THE CAROLINA JOURNAL of PHARMACY

JANUARY 1987 VOLUME 67 NUMBER 1

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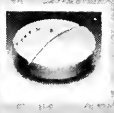

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THE CAROLINA
JOURNAL of PHARMACY

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CONTENTS

1987 Convention Highlights 5
Report of the Loan Fund/Endowment Fund Committee ... 8
International Leadership Conference 15
Pharmacist Allen Lloyd 17
Local News 18
Correspondence Course — Personal Hygiene 19
Dickinson's Pharmacy 30
Sleeping Pills 33
Classified Advertising 39

ADVERTISERS

APhA 16
Colorcraft 13
Justice Drug Company 1
Kendall Drug Company 28
Knoll Pharmaceuticals ..... 2nd Cover; 36 & 37
Eli Lilly and Company 12
Owens & Minor, Inc. ..... 3rd Cover
Pilot Life 2
Dr. T.C. Smith Co./W.H. King Drug ..... 4th Cover
Spear Associates 14
Store Fixtures & Planning, Inc. 22
The Upjohn Company 6
USP 4
Washington National 32

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1987 CONVENTION IN BRIEF
Adam's Mark Hotel
Charlotte, North Carolina
April 22, 23, 24 & 25

WEDNESDAY APRIL 22

— Joint Management Seminar 9:00 – 5:00 pm
Sponsored by North Carolina Pharmaceutical Association
and North Carolina Society of Hospitals.

— Convention Registration Desk Opens 3:00 pm

— Opening Banquet 7:30 pm
Speaker: Michael Broome
Features: Presentation of NCPhA Coat of Arms, Don Blanton Award and Bowl of Hygeia Award, Young Pharmacist of the Year and announcement of 1987 Pharmacist of the Year.

THURSDAY APRIL 23

— Convention Registration Desk Opens 8:00 am
— TMA Breakfast 8:00 am
— PharmPac Breakfast 7:30 am. Guest speaker to be announced
— Practitioner-Instructor Luncheon 1:00 – 2:00 pm
— Workshop — 2:00 – 5:00 pm
— Watercolor Class — 3:00 – 5:00 pm
— Golf and Tennis Tournaments
— TMA Sponsored Dance 9:00 – 12:00 midnite

FRIDAY APRIL 24

— Convention Registration Desk Opens 8:00 am
— NCPhA 2nd Business Session 9:00 – 12:30 pm
— TMA Business Session 11:00 am – 12:00 noon
— Woman's Auxiliary Business Session 9:30 am
— Exhibition Ribbon Cutting 12:30 pm
— Complimentary Buffet Lunch in Exhibit Hall 12:30 pm
— Exhibit Program 12:30 – 5:00 pm
— Casino Night 8:30 – 11:00 pm

SATURDAY APRIL 25

— Christian Breakfast 7:30 am
— Convention Registration Desk Opens 8:00 am
— NCPhA 3rd Business Session 9:00 – 12:30 pm
— Awards Luncheon & Installation Ceremony
Speaker: Lonnie Hollingsworth, President, NARD
Induction into 50+ Club, Academy of Pharmacy, and other awards. Installation of 1987–1988 NCPhA Officers
— Executive Committee Meeting 2:45 – 4:00 pm

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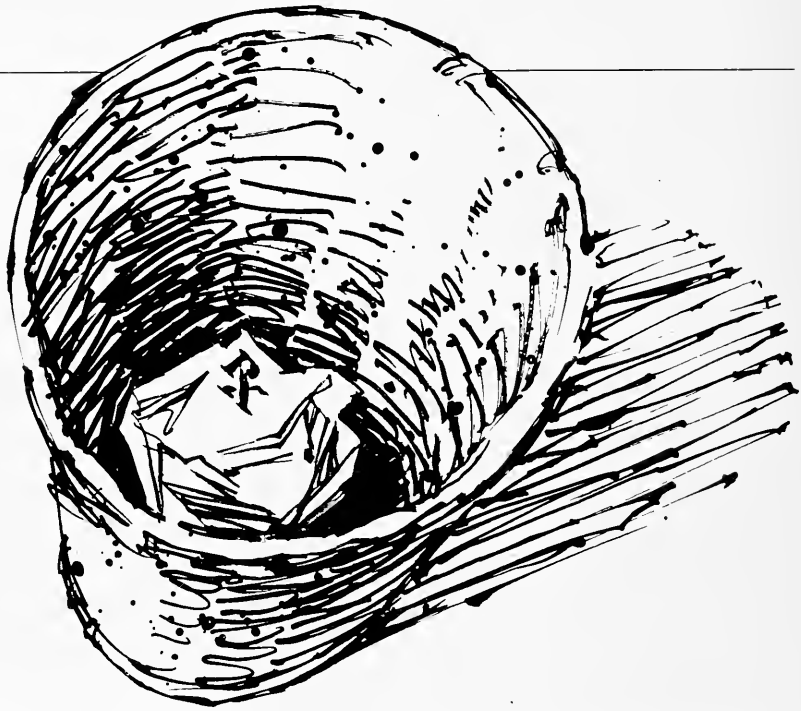

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Woman's Auxiliary ..... Mary Lou Davis

Traveling Members' Auxiliary ..... E. Delacy Luke

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Parke-Davis
Pfizer Pharmaceuticals
Smith Kline & French Laboratories
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Eli Lilly Company
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QS/1 Pharmacy Systems
Spear Associates, Inc.
Store Fixtures & Planning, Inc.
The Upjohn Company
Rugby Laboratories, Inc.
Washington National Insurance Co.
Liberty Drug Systems, Inc.

SPECIAL UNIT FORMED TO COMBAT HEALTH INSURANCE FRAUD

Fraud in the $425-billion-a-year health care industry is reaching epidemic proportions and Blue Cross and Blue Shield of North Carolina (BCBSNC) is doing its part to fight it.

A special investigative unit was formed January 1 to combat fraudulent and criminal use of the health insurance system. Its function is to identify and investigate suspected instances of fraud, and when necessary, seek prosecution of persons conducting fraudulent activities involving BCBSNC benefits.

Examples of health insurance fraud include using someone else's ID card to receive medical services, falsifying medical records and receipts, and billing for services not rendered.

"As the state's oldest and largest health insurer, we are stewards of our subscribers' money and we have the fiduciary responsibility to safeguard that money," said Rose Carpenter, head of the first-ever fraud unit.

"We won't be going on witch hunts, but we do want people to know that we will aggressively pursue and prosecute offenders," Carpenter said. "There are no demographics to suggest that fraudulent activities are conducted by just one segment of society or the health insurance system. We'll need help from everybody — our subscribers, our employees and health care providers — to put an end to the abuses."

Carpenter noted that pharmacists could assist BCBSNC's fight against health insurance fraud by making sure their signatures are stamped on any drug records given to customers.

"One area of concern is that with the increased use of computers for record keeping, it would be quite easy for someone to falsify a drug record on a home computer, print it out and submit it for payment," Carpenter said. "Not only would a stamped signature from the pharmacist on these print-outs assure authenticity, but it would speed up claims processing as well."

Persons suspecting fraudulent activity as it relates to BCBSNC are encouraged to contact Carpenter at (919) 489-7431. Confidentiality is assured to all persons providing information.

106th ANNUAL CONVENTION
OF THE
NORTH CAROLINA PHARMACEUTICAL ASSOCIATION

APRIL 20-22, 1986
HOLIDAY INN FOUR SEASONS
GREENSBORO

COMMITTEE REPORT OF THE COMMITTEE ON CONSOLIDATED LOAN FUND/ENDOWMENT FUND

COMMITTEE MEMBERS

Jack K. Wier — Chairman, Chapel Hill
Laura G. Burnham, Winston Salem
Howard Q. Ferguson, Randleman
Robert L. Hall, Mocksville
Joseph L. Johnson, Jr., Greensboro
Donald V. Peterson, Durham
Russell K. Phipps, Chapel Hill
Ralph P. Rogers, Durham
B.R. Ward, Goldsboro
Jack G. Watts, Burlington
Ronald J. Winstead, Durham

CONSOLIDATED PHARMACY LOAN FUND

The Consolidated Pharmacy Loan Fund is the only regular source which can meet quickly the needs of pharmacy students for emergency financial aid. During calendar 1985 this fund provided $39,900.00 in 133 loans to 65 students. This represents approximately 6½ percent of the total documentable financial aid received by students at the UNC-CH School of Pharmacy.

Total documentable financial aid to pharmacy students from other sources for the 1985–86 academic year was $579,232.50 with approximately 69 percent of this amount coming from the federal government. Of this total amount of aid from other sources, 44 percent was in the form of loans, 5.7 percent was in payments for work performed by the students, and approximately 50 percent was in the form of grants and scholarships. School of Pharmacy scholarships accounted for $18,600.00, approximately 3 percent of the total of financial aid from sources other than the Consolidated Pharmacy Loan Fund. Pharmacy students received about two times the financial support from the Consolidated Pharmacy Loan Fund as they did from School of Pharmacy Scholarships. A summary table of 1985–86 financial aid to pharmacy students is attached to this report.

A summary table of the financial activity of the Consolidated Pharmacy Loan Fund is also attached. This table reveals that 2 fewer loans ($600.00 less value) were made to pharmacy students in 1985 than in 1984, but were still almost $4,000.00 less than those of 1982 and 1983.

It is the opinion of this committee that the trend toward frugality in federal expenditures undoubtedly will reduce the monies available from that source for grants and loan guarantees to students in the near future. If such is the case, it follows that there will be increased pressures on all other sources of financial aid for students. NCPhA to seek increased contributions to the Consolidated Pharmacy Loan Fund.

This committee reported last year that it had asked the NCPhA Executive Committee for guidance on two subjects: the subject of instituting an interest charge on loans made to pharmacy students, and the subject of the relationship of the Consolidated Pharmacy Loan Fund to students who will become enrolled at the new School of Pharmacy at Campbell University. An *ad hoc* committee was appointed by President Brown and charged by him with the task of ascertaining, if possible, the intent of the founders of the Consolidated Loan Fund as to the clientele which the fund was to serve, and the basis for their obvious intent not to charge interest on loans made to pharmacy students. W. J. Smith was chairman of the committee and duly made his report to this committee. A copy of Mr. Smith's report is attached to this report.

This committee met on February 23 this year. The above subjects were considered, with Mr. Smith's report as one source of input to committee deliberations. The results of those deliberations were as follows:

1. *Loans to students of pharmacy at Campbell University* — All monies in the Consolidated Pharmacy Loan Fund at this time shall be reserved for loans to NCPhA student members at

the UNC-CH School of Pharmacy. If, and only if, the officials at Campbell University School of Pharmacy wish to participate in such a loan fund, future NCPhA solicitations of monies for the Loan Fund will allow donors to stipulate whether their donations should provide loan funds for students at the UNC-CH School of Pharmacy, for students at the Campbell University School of Pharmacy, or for students at both schools.

The above recommendation was transmitted to President Brown and the NCPhA Executive Committee.

2. *Interest charge on loans to students* — Discussion of this subject engendered lively disagreement, as on previous occasions. Because four of the eleven members of the committee were not present for that discussion, chairman Wier submitted the question to all members of the committee by way of a mail ballot. A copy of his letter to committee members and a copy of the ballot which they received is attached to this report. Six members of the committee voted to maintain the policy of no interest on these loans, which policy has been in effect since the inception of the loan fund. Five members voted in favor of charging interest on loans to students. Arguments made by committee members for and against the proposition are contained in the attached letter.

Because a bare majority of the committee members favored continuing the policy of no interest on loans, chairman Wier forwarded all materials pertaining to the subject, and to the vote, to President Brown and the NCPhA Executive Committee. It is the opinion of the chairman of this committee that such an important monetary issue should be settled by the Executive Committee rather than by this committee.

ENDOWMENT FUND

The financial report of the Endowment Fund and its several constituent funds is attached to this report.

General Endowment Fund

The General Endowment Fund was increased during 1985 by contributions of $633.75 to a value of $78,796.59. Interest earned by the fund was $7,241.91.00. $7,052.89 of that interest had been transferred to the General Operating Fund by December 31, 1985. The balance of the interest was subsequently transferred to that fund.

Kappa Psi Fraternity Fund

The NCPhA owns a $5,000.00 bond issued by the UNC-CH chapter of Kappa Psi Professional Pharmacy Fraternity. The fraternity has made annual payments of interest on that bond, but has made no payments toward recovery of the bond. This committee recommended that the Executive Director of the NCPhA attempt to work with Kappa Psi Fraternity, especially the alumni members, to mount a fund drive to eliminate this debt.

Ralph P. Rogers, Sr., Award Fund

The value of this fund increased during 1985 from $15,770.81 to $17,559.80. Expenses for the Award and the Award Dinner were $872.08; contributions were $1,113.30; interest earned was $1,547.77. The award is made to a student at the UNC-CH School of Pharmacy for achievement in Pharmacy Administration course work.

W. J. Smith Convention Speaker Fund

With no expenditures, contributions of $95.00, and interest earned of $588.43, the value of this fund increased during 1985 to $6833.55.

Jesse S. Stewart Memorial Scholarship Fund

During 1985, expenditures were $500.00 (the scholarship) and interest earned was $748.16. The balance of the fund at the end of 1985 was $6,629.47.

CONSOLIDATED PHARMACY LOAN FUND

1985

Number of Loans Made	133
Total Value of Loans	$ 39,900.00
Average Value of Loans	$ 300.00
Value of Loans Outstanding	$108,800.00
Contributions to Fund	$ 10,423.71
Total Assets of Fund	$147,864.89

SCHOOL OF PHARMACY — UNC-CH
1985-86 STUDENT FINANCIAL AID
January 13, 1986

TOTAL NEED			$499,880.00
TOTAL FUNDS AWARDED			$579,232.50
DIFFERENCE OF NEED AND FUNDS AWARDED			$79,352.50
FUNDS OR GUARANTEES BY FEDERAL GOV'T.			
Grants	$155,831.00		
Loans	$236,510.00		
Work-Study	$7,250.00		
Total Federal Support		$399,591.00	
FUNDS OR GUARANTEES BY STATE GOV'T.			
Grants	$23,410.50		
Loans	$10,440.00		
Total State Support		$33,850.50	
UNC-CH FUNDS			
Scholarships	$65,775.00		
Salaries	$11,192.00		
Total UNC-CH Support		$76,967.00	
SCHOOL OF PHARMACY SCHOLARSHIPS		$18,600.00	
MISCELLANEOUS SOURCES			
Grants	$25,465.00		
Loans	$9,875.00		
Salaries	$14,884.00		
Total Miscellaneous Funds		$50,224.00	
TOTAL FINANCIAL SUPPORT			$579,232.50

These funds were awarded to 196 students which is 40.7 percent of the Pharmacy student body (481).

In addition to the funds provided through the Office of Student Aid and the School of Pharmacy, $39,900.00 was provided as loans to students during calendar 1985 by the Consolidated Loan Fund of the North Carolina Pharmaceutical Association. These loans are provided at no interest and were made to 65 students.

CONSOLIDATED PHARMACY LOAN FUND
Comparison of Selected Activities for 1980 through 1985

	1980	1981	1982	1983	1984	1985
Number of Loans Made	76	110	119	136	135	133
Total Value of Loans	$22,050.00	$32.820.00	$ 35,200.00	$ 40,600.00	$ 40,500.00	$ 39,900.00
Average Value of Loans	$ 290.13	$ 298.36	$ 295.79	$ 300.00	$ 300.00	$ 300.00
Value of Loans Outstanding	$64,875.00	$76,655.00	$ 89,233.33	$ 99,048.33	$103,395.00	$108,800.00
Contributions to Fund	$ 6,359.63	$23,354.33	$ 14,638.68	$ 14,238.76	$ 9,548.39	$ 10,423.71
Total Assets of Fund	$73,611.39	$97,489.52	$116,547.42	$128,962.03	$140,645.05	$147,864.89

* * *

NOTE: The maximum loan to a student each semester is $300.00. The maximum total loan to a student is $1,800.00.

ENDOWMENT FUND
1985

	Balance 1/1/85	Balance 12/31/85
General Endowment Fund	$77,973.82	
Interest	7,241.91	
Interest Transferred to Gen. Fnd.	7,052.89	
Contributions	633.75	$ 78,796.59
Kappa Psi Bond	$ 5,000.00	
Interest	250.00	
Interest Transferred to Gen. Fnd.	250.00	$ 5,000.00

RESTRICTED FUNDS

Ralph P. Rogers, Sr. Fund	$15,770.81	
Interest	1,547.77	
Expenses [Award and Dinner]	(872.08)	
Contributions	1,113.30	$ 17,559.80
W. J. Smith Convention Spkr. Fund	$ 6,067.62	
Interest	588.43	
Contributions	95.00	
Due from Gen. Fund (Contributions)	82.50	$ 6,833.55
J. S. Stewart Scholarship Fund	$ 6,381.31	
Interest	748.16	
Due to Gen. Fund (Scholarship)	(500.00)	$ 6,629.47
TOTAL		$114,819.41

To: Members, Consolidated Loan Fund Committee, NCPhA

From: Jack K. Wier, Chairman

Date: February 25, 1986

Subject: Ballot — Should interest be charged on loans?

1. At the scheduled meeting of this committee on February 23, the subject of instituting an interest charge on loans made to Pharmacy students from this fund was explored again. Again, opinion was divided. Because four of the eleven members of the committee were not present, and because this is a matter of considerable import, I chose to conduct a vote on the subject by mail ballot. The recommendation of this committee to the Executive Committee of the NCPhA will be determined by the results of this vote. Please mark and return the ballots promptly. Please sign your ballot. I will submit photocopies of these ballots to the Executive Committee along with the summary recommendation from this committee.

2. Fact:

   a. This loan fund was established circa 1945 with a sum of about one hundred and seventy dollars.

   b. The originators of the loan fund specifically decided against charging interest on the loans made.

   c. The present value of the loan fund is $147,864.89. In 1985, loan repayment plus contributions exceeded money loaned by $5,018.71.

(Continued on page 13)

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MEMBERS

(Continued from page 11)

d. The increase in value of the fund is entirely from contributions to the fund. Any bank interest earned has been transferred to the General Fund.

e. As it stands now, repayment of loans must begin within 6 months after graduation from the School of Pharmacy, and payments are to be no less than fifty dollars per month.

f. Bad-debt experiences have been minimal. Never-the-less, beginning in 1983, penalty interest of 6 percent is charged against loans whose repayments are in default.

g. The monies available in the loan fund have been sufficient for the past several years to meet all requests for loans.

h. Loans from this fund account for approximately six percent of the total financial aid received by students at the School of Pharmacy.

3. Speculation (probably valid):

a. Imminent decreases in federal funding will reduce the financial aid available from UNC-CH.

4. Arguments in favor of instituting an interest charge on loans:

a. The general upward inflation trend will make the total value of the loan fund decrease in terms of future real dollars. A reasonable interest charge will make the total value of the fund grow with the inflation rate.

b. It is poor business practice to loan money for any purpose without charging interest.

c. The charging of interest will make the borrowers regard the loans in a more serious light.

d. Other private-source loan funds with which some of the committee members are associated do have an interest charge on loans.

5. Arguments in favor of maintaining the present "No Interest" policy:

a. These small emergency loans to students at the School of Pharmacy engender considerable good will toward the NCPhA among the student body of the School of Pharmacy. As these students always represent the newest generation of pharmacists in the state, this good will translates directly into support of the NCPhA.

(Chairman's comment: There is no direct evidence available to support or deny the above contention. Some younger members of this Committee have stated that these no interest loans induced them to support the Association and the Consolidated Loan Fund.)

b. An interest charge on these loans will give the borrower no more commitment to the lender (the NCPhA) than he would have to a commercial bank from which he obtained a loan.

c. The fund has seen continuous growth from contributions of members and friends of the NCPhA. Because this growth is expected to continue, and because the fund seems able to meet all current loan requests, increased fund growth from interest charged on loans is not needed.

I will appreciate your prompt response. Time is short if we are to submit a recommendation to the Executive Committee prior to the Convention.

Thank you for your assistance.

Respectfully submitted,
Jack K. Wier, Ph.D.,
Chairman

INTERNATIONAL LEADERSHIP SYMPOSIUM: THE ROLE OF WOMEN IN PHARMACY

A cooperative international effort has resulted in the assembly of pharmacy leaders to present the INTERNATIONAL LEADERSHIP SYMPOSIUM: THE ROLE OF WOMEN IN PHARMACY in London, June 21–27, 1987. To open the program, the Baroness Trumpington of Sandwich, Parliamentary Undersecretary for Health, Department of Health and Social Security (UK), will present the keynote address.

The week-long worldwide information exchange will include plenary sessions of such topics as:

- "The Economics of Health Care" presented by Dr. Gail Wilensky (USA), Vice President for Health Affairs, Project HOPE, and Professor George Teeling Smith (UK), Director, Office of Health Economics
- "The Pharmacist's Role in Health Care Delivery" presented by Dr. Gloria Francke (USA), Pharmacy Information Specialist, and Mme. Jacqueline Surugue (France), Hospital Pharmacist LaQueue enBrie
- "Pharmacy in the 21st Century" presented by Dr. Joseph Oddis (USA), President, Federation Internationale Pharmaceutique, and Executive Vice President, ASHP and Dr. Peter Noyce (UK), Deputy Chief Pharmacist, Department of Health and Social Security
- "Legislative and Regulatory Environment for Pharmacy" presented by the Honorable Don M. Newman (USA), Undersecretary, Department of Health and Human Services and Mr. Jan Winters (The Netherlands), President, Section for Community Pharmacists, Federation Internationale Pharmaceutique
- "Leadership in Pharmacy" presented by Dr. Lucinda Maine (USA), Director of Professional Relations, School of Pharmacy, Samford University, and Ms. Cecilia Claessen (Sweden), Apoteksbolaget A, The National Corporation.

Additional topics and discussion groups will be presented by representatives from Europe, Australia, and North America. Proceedings will be distributed.

For more information contact:

Mrs. Mary Grear
Correspondent
P.O. Box 981
Claremore, OK 74018
(919) 342-1711

NEW CPE PROGRAM ON HYPOTHYROIDISM AVAILABLE FROM FLINT LABORATORIES, INC.

A new home-study continuing pharmacy education program on hypothyroidism is available without charge from Flint.

The program is edited by R. Keith Campbell, RPh, FAPP, Profesor of Clinical Pharmacy, Washington State University College of Pharmacy. Continuing education credits are available from Washington State University College of Pharmacy, which is approved by the American Council of Pharmaceutical Education as a provider of continuing education.

The new program, "Hypothyroidism Update," is issued in four sections: Hypothyroidism Disorders: Diagnosis and Management, Hypothyroidism in the Elderly, Hypothyroidism in Middle Age, and Hypothyroidism in the Young.

A multiple-choice self-test accompanies each section. Pharmacists wishing to enroll in the program without charge may write to: CPE Program Administrator, Flint Laboratories, Inc., 1425 Lake Cook Road, Deerfield, IL 60015.

Pharmacists who wish to submit their completed examination for grading and certification of successful completion should send their answer sheet with $5 to the Washington State University College of Pharmacy, Weger Hall 147, Pullman, WA 99164-6501. A score of at least 70% must be achieved in order to obtain CPE credit.

For additional information, contact Char Cary, Flint Laboratories, Inc., 1425 Lake Cook Road, Deerfield, IL 60015.

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REACHING NEW HEIGHTS

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American Pharmaceutical Association
134th APhA Annual Meeting
March 28-April 1, 1987

PHARMACIST MIXES CIVIC PRIDE, PRESCRIPTIONS

by Andy Trincia for The News and Observer

HILLSBOROUGH — Allen A. Lloyd keeps going back to the clock in the old Orange County Courthouse. Just like Hillsborough folks keep going back to Lloyd.

Both are town institutions. As surely as the clock spins, Lloyd will be in back of the prescription counter at James Pharmacy.

Since 1937, Lloyd has been selling pills and mixing potions for what ails his customers. Since 1963, he has been winding the clock. At 71 years old, he says he enjoys both jobs.

"We have a lot of loyal customers," Lloyd said in an interview. "Some of my best customers are the older people. But so many of them are getting old and dying off."

Lloyd, a Hillsborough native and town commissioner, said he liked being his own boss at the pharmacy, where he supervises seven employees. His pharmacist-daughter, Evelyn P. Lloyd, joined him in 1965.

"Working at a smaller store is better than one of these chain drug stores," he said. "You don't have so many bosses."

He's largely on his own in his other job, too. The town board appointed him in 1963 as the official keeper of the clock, and he takes the job seriously.

Every two or three days he climbs the spiral staircase in the courthouse, built in 1846. He winds the clock, built in England in 1766, with its original crank.

He said he was glad to take on the chore, which he does for free. The clock is a part of the town, a fond memory of childhood, he said.

Lloyd, who is a graduate of the University of North Carolina at Chapel Hill, also has fond memories of the pharmacy, begun by a friend at the 111 N. Churton St. location and still owned by the friend's widow, Oma R. James.

He remembers the '40s and '50s, when it was a popular teenage gathering spot, when couples sipped on fountain sodas and milkshakes. People still come for the refreshments, but teenagers gather at fast food restaurants in Hillsborough, Lloyd said.

But the soda fountain is still a place to catch up on town gossip. One frequent customer is Hillsborough Mayor Frank H. Sheffield, Jr.

"It's always a friendly atmosphere," Sheffield said in a telephone interview. "It's just a real institution in Hillsborough. It doesn't seem to have changed in years."

Sheffield remembers when former Gov. James B. Hunt Jr. visited Hillsborough in June 1984 to dedicate the town cemetery.

"Governor Hunt made a reference in his speech to James Pharmacy," Sheffield said. "He said they had the best fountain Cokes in North Carolina."

Hillsborough's history is another subject he takes seriously. His interest in it has resulted in a book, "History of the Town of Hillsborough, 1754–1982," which he co-authored with his wife Pauline O. Lloyd.

NARD LAUNCHES RX EXPO '87

ALEXANDRIA, VA — November 26, 1986 — Expanding on four consecutive years of successful NARD Home Health Care Conferences, the National Association of Retail Druggists has announced that an exciting new mid-year meeting — RxExpo — will be held April 29–May 2, 1987 in New Orleans.

In addition to the in-depth programming on home health care that has made NARD's Home Health Care Conferences such huge successes in years past, Rx Expo will offer attendees seminars and workshops on a wide variety of disciplines covering both the business and professional practice of pharmacy.

Participants will be able to register for educational tracks covering home health care and long-term care, financial management, clinical pharmacy, multiple locations pharmacy ownership, and professional pharmacy management. NARD's Geriatric Certificate Program, unveiled at NARD's 1986 annual meeting in Louisville, will be offered again during Rx Expo. In addition, NARD has selected Rx Expo to introduce an all-new program that offers pharmacists a certificate in counseling ostomy and incontinence patients. Rx Expo will also serve as the site of NARD's 1987 PSAO Conference, following up on the association's much talked about First Annual PSAO Conference held last May.

NARD's home health care trade exposition will also be a part of Rx Expo '87, but this year

(continued on page 31)

LOCAL NEWS

The Northeastern Carolina Pharmaceutical Society held their annual Christmas Party on Sunday, December 7, 1986 at the Holiday Inn in Williamston. Entertainment was provided by members of the ECU School of Music. Distinguished guests were Mr. and Mrs. Al Mebane of the NCPhA.

Mr. Mebane swore in the 1987 officers of the Society. They are pictured above (left to right), Bill Brown, past president, Al Mebane, Dean Bryan, president, Dana Outten, secretary-treasurer, and Mike Adams, vice-president.

Dear State Pharmacy Association

Journal Editor:

We have learned that an operation calling itself ANSWERS UNLIMITED is offering the answers to CE correspondence courses for an annual fee.

Perhaps you have already received a letter from ACPE alerting you to that fact.

Please be aware that the repro proofs of CE articles, tests included, which have been provided to you on a complimentary basis from Merrell Dow and Lakeside Pharmaceuticals, divisions of Merrell Dow Pharmaceuticals, Inc. as a service to pharmacy are copyrighted.

In our opinion, the provision of and utilization of answers either in advance of, or concurrent with the use of the post-tests:

- could possibly place the ACPE-approved provider in non compliance with CE criteria and guidelines
- is a violation of copyright laws
- may render the credit awarded to the participant invalid
- is in clear contravention to the intent of continuing education for pharmacists.

We strongly urge that you consider writing to this person and tell him YOUR feelings about this. James Brian, Answers Unlimited, Box 143, Palos Park, IL 60464

It is our fervent hope that this dubious operation will "dry up and blow away" from economic nonsupport. At stake is the future credibility of CE correspondence courses as well as the integrity of the profession.

Sincerely,
Jack R. Statler, R.Ph.
Professional Relations Manager

The regular monthly meeting of the Guilford County Society of Pharmacists was held Sunday, January 18, 1987 at the Ramada Inn Downtown in Greensboro. Following the social hour and dinner, our guest speaker for the evening, Mr. Andrew Barrett, Executive Director of Pharmacy Network of North Carolina, discussed the goals and objectives of his organization. Mr. Barrett also shared with us the progress PN/NC has made thus far in negotiating some major contracts for its member pharmacies, and what is being done to increase the membership by bringing in more of the chain pharmacies as well as independents. During the short business session that followed, members were reminded that it is time to pay their 1987 dues, and that new officers would be installed at the February meeting. There being no further business, the meeting was adjourned.

CORRESPONDENCE COURSE

ADVISING CONSUMERS ON OTC PERSONAL HYGIENE PRODUCTS

by J. Richard Wuest, Pharm.D., R.Ph.
Professor of Clinical Pharmacy
University of Cincinnati, Cincinnati, OH
and
Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University, Ada, OH

Goals

The goals of this lesson are to:
1. review the concepts of personal hygiene;
2. explain how to advise patients on the selection of OTC personal hygiene products.

Objectives

At the completion of this lesson, the successful participant will be able to:
1. recognize effective OTC personal hygiene products;
2. identify the pharmacological actions of the ingredients of these agents;
3. explain the proper technique for applying/administering these OTC agents.

Introduction

Personal hygiene is truly big business in the United States. It is estimated that Americans spend more than $500,000 annually on antiperspirants and deodorants alone. Advertising experts on Madison Avenue have successfully sold the concept to Americans that perspiration and body odor (which are normal body functions) are socially unacceptable. This extravagant spending and preoccupation with body odor is not a new phenomenon, however. Egyptian, Greek, and Roman historians all described methods for masking body odor. For centuries the French have made a significant name in the Western world by perfecting and producing perfumed oils and waters.

Deodorants developed in the 1800's contained zinc oxide. Simple solutions of aluminum chloride and/or iron chloride came in the 1900's. But, the major problem with these deodorants was that they were highly acidic, and irritated underarm tissue or ruined clothing. Aluminum chlorohydrate was introduced in the 1940's to help solve these problems; it and its derivatives have been the mainstay of commercial antiperspirant products since that time.

Deodorants Versus Antiperspirants. There are two types of products used for general personal hygiene: antiperspirants and deodorants. The basic difference between them is that **deodorants** either directly mask body odor or decrease the bacterial populations, in the underarm area, that are responsible for producing odor. They are considered by FDA to be cosmetics because they do not directly affect bodily activities.

Antiperspirants, as the name implies, inhibit perspiration. They are legally classed as drugs because they do affect normal body actions. Antiperspirants will be the subject of this article.

(Continued on page 20)

CORRESPONDENCE COURSE

(Continued from page 19)

What Causes Sweating?

An explanation of sweat, its function, and what produces it is in order before reviewing the active ingredients of antiperspirants. There are three secretion (exocrine) glands involved in sweat production: the apocrine, the eccrine, and the sebaceous glands (see Fig. 1). **Sebaceous glands** produce sebum, an oily substance that serves as a moisturizing agent for the skin. It holds sweat on the outer dermal layer of the skin so that the stratum corneum can be properly hydrated. Sebum also serves as a nutritional source for bacteria that live on the skin.

Both the sebaceous glands and the **apocrine sweat glands** open into hair follicles and release their secretions there. Most of the apocrine glands are localized in the armpit (axillary), perianal and nipple (areolar) areas. There is also a significant number of apocrine-like glands in the inner eyelid (conjunctiva) and ear canal (ceruminous); the mammary gland is actually a modified apocrine gland.

The exact function of the apocrine glands has not yet been determined. Elevations in the environmental temperature do not increase their secretions. Instead, apocrine glands secrete a slightly off-colored, low volume, viscous fluid when they are stimulated by emotional stress such as anger, fear, or pain. Direct mechanical pressure such as stroking or petting also increases their secretions. Bacteria on the skin metabolize materials in apocrine fluids to produce an odor characteristic to each individual. The current leading theory is that apocrine secretions somehow play a role in subconscious communication between humans.

Interestingly, most other mammals (specifically the lower primates) have elaborate means of communicating with each other via the sense of smell. The fact that apocrine glands do not fully develop and function until after puberty; that they are located in warm, moist areas which

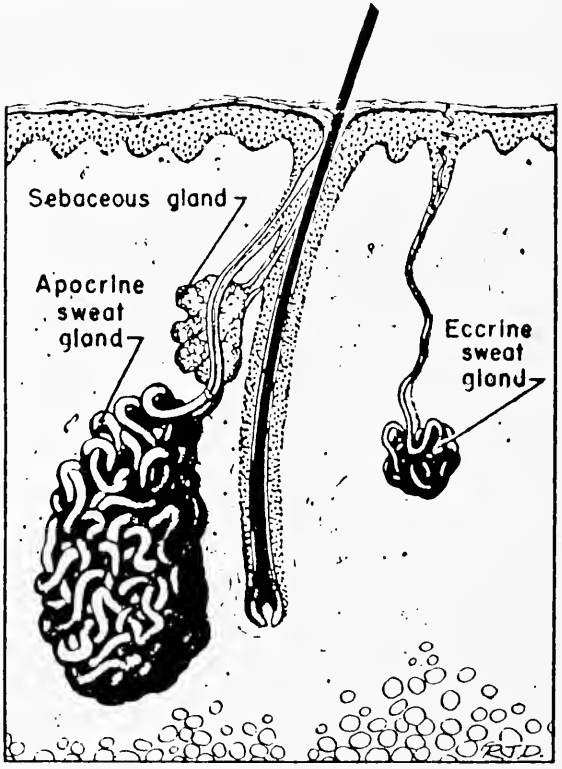

FIGURE 1. Glandular appendages of the skin.

are very susceptible to bacterial growth; that they coexist with other (eccrine) glands which produce a high volume of sweat that evaporates and, therefore, spreads the bacteria-produced odor adds substance to the theory that these glands are involved in sexual attraction. The reasoning that the hair growing out of the follicles could serve as "wicks" for sending out the secretions adds even more credence to this theory.

The other types of sweat glands called **eccrine glands** are present in nearly all areas of the skin. They open directly onto the skin and occur to the largest extent around hair follicles. Eccrine glands consist of a deeply coiled ductwork system located in the subcutaneous area that produces a watery secretion from plasma which is modified by the cells in the ductwork opening onto the surface. Eccrine sweat is composed of sodium, chlorine, potassium, urea, lactate, and glucose.

Concentrations of these various substances differ from individual to individual and the relative concentration of each constituent is modified by the rate of sweat secretion. During periods of rapid, profuse sweating, the concentration of each of these components will be much less than during periods of relative dormancy. Unlike the apocrine secretions, which rarely exceed a few milliliters, the eccrine glands can turn out as much as 12,000 milliliters of fluid in a twenty-four hour period. The average volume, however, is approximately one liter per day.

These eccrine glands are important in maintaining the body's proper temperature and electrolyte balance. Their activity is regulated by at least three known factors: thermal, mental, and gustatory response. The hypothalmus contains the heat-regulating center. It, in turn, is activated or deactivated by the volume and temperature of blood circulating through its stem from the skin, and by antipyretic drugs.

Other areas of the brain are also believed to be involved in stimulation of eccrine glands, although the exact site of activity has not yet been determined. It is known, however, that mental stress increases sweat production, especially on the palms and soles of some individuals. The third regulatory mechanism, gustatory, has not yet been fully explained, but its existence is noted by the sweating that occurs around the mouth and on the forehead and nose after eating spicy foods.

There are various pathological disorders of the sweat glands. The more common ones are listed in Table 1.

TABLE 1
Disorders of the Sweat Glands

Anhydrosis: scanty or nonexistent sweat production. Results from CNS disorders or disruption of the autonomic nervous system. It is also a side effect of drugs with atropine-like effects (e.g. anticholinergics, tricyclic antidepressants, phenothiazines).

Bromhydrosis: bad smelling sweat. Usually the result of improper hygiene but can be caused by volatile substances being picked up from the blood and secreted by the apocrine glands (e.g., garlic).

Chromohydrosis: colored sweat. Can be caused by metabolites and systemic disturbances (e.g., malfunction of the hypothalamus, hyperthyroidism, diabetes, menopause, cancer, infections).

Hyperhydrosis: excessive sweating. Caused by both mental and systemic disturbances (e.g., malfunction of the hypothalmus, hyperthyroidism, diabetes, menopause, cancer, infections).

How Can Underarm Odor Be Eliminated?

While it is known that skin bacteria are the immediate cause of underarm odor, the exact species responsible has not yet been determined. Those that are undoubtedly involved include *Propionibacterium acnes, Propionibacterium granulosum,* various diphtheroids, and coagulase-negative staphylococci. The relative proportions of each of these vary from individual to individual and none of them are pathogens. The odor is known to result from bacterial decomposition of apocrine secretions. This fluid is somewhat sticky and thus adheres to the hair growing out of the axillary area. This hair also provides the bacteria with a greater surface area on which to grow and come in contact with apocrine secretions.

There are three methods for reducing underarm odor with drugs, based upon what is known about this condition. These include inhibiting bacterial growth, reducing apocrine secretions, and removing all sweat secretions from the skin as quickly as possible. The primary

(Continued on page 22)

CORRESPONDENCE COURSE

(Continued from page 21)

means, needless to say, is this third alternative, achieved by regular, effective washing of the area. Many experts (and millions of "non-experts") believe that shaving the hair from the underarms (a practice popular with women) is helpful in preventing axillary odor. Although this is usually done more for cosmetic reasons, it not only reduces the ability of bacteria to produce odor, it also enhances the detergent and mechanical action of soap when the area is washed.

Decreasing wetness by reducing sweat production is another effective method for reducing underarm odor. This occurs because the three factors that enhance bacterial growth are the nutrients in apocrine secretions, the warm temperature, and the wetness supplied by the water in both forms of sweat. Since the principle source of wetness in the underarm area is eccrine sweat, limiting secretions by these glands will reduce odor. Antiperspirants accomplish this. It should also be noted that those agents cleared by the FDA advisory panel that reviewed them as being safe and effective, were felt to have a direct bacterial action on organisms with which they came in contact.

Do Antiperspirants Really Work?

Currently there are three proposed theories that are purported to explain the mechanism of action of antiperspirants. None has been proven conclusively. One holds that metallic ions in the chemicals bind with anions in the keratin issue and form a functional closure of the sweat gland duct. This, then, reportedly causes an intraluminal pressure head which stops glandular secretion via a feedback mechanism.

Another theory suggests that aluminum and zirconium salts alter the permeability of water within the sweat duct and cause it to flow into the tissue below the epithelial skin. This, then, is taken back up in the blood instead of being deposited on the surface.

The third theory is that the metallic ions

decrease sweating by interfering with acetylcholine-induced nerve stimulation of the gland. The proposed mechanism is that the metallic ions in the antiperspirant have a direct effect on acetycholinesterase (the enzyme that metabolizes acetylcholine).

However, the panel that reviewed the antiperspirant drugs was not convinced that they exert sufficient "anti-wetness" action to be the only mechanism of action. Its members felt that even though the resulting dryness is less suitable for bacterial agents (especially the aluminum chlorohydrates and aluminum chloride) possess some antibacterial action in their own right. This means that, in the panel's view, an effective antiperspirant is also an effective deodorant whether or not it has a "perfumy" odor.

Remember that the odor associated with underarm perspiration is due to bacterial breakdown of apocrine secretions. No OTC product is known to cause an effect on apocrine sweat production. Sweat produced by the apocrine glands enhances bacterial growth and the formation/evaporation of odor. Eccrine sweat production is a normal part of the biological function that helps regulate body temperature and electrolyte balance. These glands are located over the entire body (estimated to exceed three million); they become active under thermal stress. The eccrine sweat then evaporates from most areas of the skin and cools the blood circulating through the skin and, therefore, the body itself.

The eccrine glands in the underarm area are further unique in that they alone are stimulated by emotional stress. This adds to odor production. The net result is that, since the underarms are not important in overall regulation of body temperature, their sweat production can be inhibited by antiperspirants without jeopardizing body hemostasis. Therefore, they are safe and effective for OTC use as antiperspirants. Table 2 lists those products that have been ruled by the FDA's advisory panel to be safe and effective. The basic components are aluminum chloride, aluminum chlorohydrates, and aluminum zirconium chlorohydrates.

Aluminum chlorohydrates are composed of nine different salt forms. They vary in the ratio of aluminum ions to chloride ions within the molecule, and whether they are complexed with propylene glycol or polyethylene (the glycols) increase the alcoholic stability of the salts and enhance their ability to form the various vehicles used for commercial antiperspirants. They are, however, considered to be approximately equal to each other in effectiveness.

TABLE 2
Safe and Effective OTC Antiperspirant Drug Ingredients*

Aluminum chlorohydrates:
- Aluminum dichlorohydrate
- Aluminum sesquichlorohydrate
- Aluminum chlorohydrex PG
- Aluminum dichlorohydrex PG
- Aluminum sesquichlorohydrex PG
- Aluminum chlorohydrex PEG
- Aluminum dichlorohydrex PEG
- Aluminum sesquichlorohydrex PEG

Aluminum chloride
(aqueous solutions up to 15%)

Aluminum sulfate
(buffered with aluminum lactate)

Aluminum zirconium chlorohydrates:
- Aluminum zirconium trichlorohydrate
- Aluminum zirconium tetrachlorohydrate
- Aluminum zirconium pentachlorohydrate
- Aluminum zirconium octachlorohydrate
- Aluminum zirconium trichlorohydrex GLY
- Aluminum zirconium tetrachlorohydrex GLY
- Aluminum zirconium pentachlorohydrex GLY
- Aluminum zirconium octachlorohydrex GLY

PG = Propylene glycol complex
PEG = Polyethylene glycol complex
GLY = Glycine complex

*as determined by an FDA advisory panel

Aluminum zirconium chlorohydrates are somewhat similar to the aluminum chlorohydrates in that the basic differences between the members of the group are their ratio of aluminum to zirconium to chloride atoms, and whether or not they are complexed with glycine. Glycine enhances their formulation properties.

(Continued on page 25)

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CORRESPONDENCE COURSE

(Continued from page 23)

When **aluminum chloride** hydrolyzes in solution, it forms several compounds including oxychloride and free hydrogen ions. These ions lower the pH substantially and solutions greater than 15% are not considered to be safe for OTC use. Aluminum chloride reduces sweating to a significantly greater degree than do the other antiperspirants, but it also has a greater tendency to irritate the skin.

While **buffered aluminum sulfate** is considered to be a safe OTC antiperspirant, the unbuffered form (cake alum) is not. The unbuffered form produces a high degree of skin irritation. Adding sodium aluminum lactate to the product buffers the solution and significantly decreases the irritation caused by aluminum sulfate itself. Another complex, potassium aluminum sulfate (i.e., medicinal alum), is known to possess styptic and astringent activities, but it has never been clinically tested for its antiperspirant activity.

The panel concluded that two other agents were definitely unsafe for OTC use. They are zirconium-containing aerosols and alcoholic solutions of aluminum chloride. As stated earlier, some zirconium-containing formulations are considered to be safe and effective, but not the aerosols. The problems with them stem back to evidence gathered a decade ago that chronic inhalation of zirconium-containing aerosol products might produce abnormal tissue growing in the lungs. They were removed from the market and will not be allowed back until adequate testing is done. Aluminum chloride in alcoholic solutions is barred from OTC sale because data relating to its use have resulted from prescription use under medical supervision. The FDA could find no evidence that it is safe for self-use via the more open OTC market.

Consumer Counseling

Since there are no significant differences between the various ingredients, a major determinant in choosing an antiperspirant is whether or not a particular product irritates the skin. Good advice is to use "whatever works for you." Another factor is the product smell. However, covering one odor with another is not a substitute for proper hygiene.

Most often, repeated application of the antiperspirant is needed before signficant wetness reduction is seen. Also, the underarm area should be dry before application and be allowed to dry afterwards. Applying an antiperspirant when one is sweating prevents the agent from penetrating into the sweat gland ducts. Allowing the area to dry after application, before putting on clothing, will lessen the chance of the product hydrolyzing to hydrochloric acid which induces skin irritation. Irritation is also reduced by not applying antiperspirants to abraded or freshly shaven skin. Since all of us are biochemically different, if one product fails to do the job, another one with a different combination of ingredients may do fine.

Feminine Hygiene

The question of whether or not to use douche products and feminine deodorant spray stirs up a great deal of controversy. Some gynecological experts question the use of the latter agents, stating that they may cause more harm than good to sensitive vaginal tissue. Douching has both proponents and opponents. Some experts believe that proper douching enhances the health of vaginal tissue, and that proper cleansing of the perianal area is imperative to prevent vaginitis. Others argue that the vagina is quite capable of keeping itself clean and that adequate washing will prevent the spread of organisms from the anus to vagina.

Several factors contribute to the proper function and health of the vaginal tract. These include the thickness of the lining, pH, various secretions, and the bacterial flora.

The thickness and consistency of the vaginal epithelial lining is determined by the level of estrogens in the body. During the years following menses but before menopause, estrogen blood levels are high and vaginal tissue cell height is greatest. The chance for pathogenic invasion of the vagina at this time is less likely than before or after menstration.

Two other factors, vaginal pH and bacterial flora, are interrelated. Again, there are major differences in these during the childbearing years. Before menses begins and after menopause occurs, the pH of the vaginal tract is somewhat alkaline. During the childbearing years, the pH averages between 3.5 and 4.2 with a range of 3 to 6. It is known that keeping the vaginal tract acidic aids the endogenous nonpathogenic bacteria/flora to inhibit infection from occurring. Whenever the pH becomes alkaline (as in

(Continued on page 27)

TABLE 3
Representative OTC Douche Products

Product	Ingredients
Betadine	Povidone-iodine
Bo-Car-Al	Boric acid, eucalyptus, menthol, methyl salicylate, phenol, potassium aluminum sulfate, thymol
Demure	Benzethonium chloride
Dismiss	Cetearyl octate, citric acid
Femidine	Povidone-iodine
Gentle Spring	Sodium lauryl sulfate
Jeneen	Lactic acid, octoxynol
Massengill Disposable	Cetylpyridinium chloride, lactic acid, octoxynol
Massengill Liquid	Lactic acid, octoxynol
Massengill Powder	Ammonium aluminum sulfate, methyl salicylate, phenol, thymol
Massengill Medicated	Povidone-iodine
Massengill Vinegar	Citric acid, vinegar
New Freshness	Vinegar
Nylmerate II	Acetic acid, boric acid, nonoxynol
Operand	Povidone-iodine
Phenithyn	Benzethonium chloride
PMC	Ammonium aluminum sulfate, eucalyptus, menthol, phenol, thymol
Povi-Douche	Povidone-iodine
Summer's Eve	Citric acid
Summer's Eve Medicated	Potassium sorbate
Summer's Eve Vinegar	Sorbic acid, vinegar
Stomaseptine	Eucalyptol, menthol, thymol
Trichotine	Sodium lauryl sulfate
Trivia	Alkyaryl sulfonate, oxyquinoline
V.A.	Boric acid, oxyquinoline, potassium aluminum sulfate, zinc sulfate
Vagesic	Docusate, polyoxyethylene nonyl phenol
Zonite	Benzalkonium chloride, menthol, thymol

CORRESPONDENCE COURSE

(Continued from page 25)

pregnancy and during oral contraceptive use) vaginal infections are more likely to occur.

A variety of secretions are produced in the vaginal tract that cleanse and lubricate. They include secretions from sebaceous, apocrine, and eccrine glands (covered earlier), as well as from other special glands. In themselves, they have no odor, but if they remain on the external surface of the vagina, bacterial decomposition can and will produce odor. Two organisms that are especially implicated in odor production are *Trichomonas* and *Gardnerella* (previously called *Haemophilus*) *vaginale.* They also cause inflammation as does another pathogen — the yeast *Candida albicans.*

When douching is indicated for medical purposes, the most common reasons are to alleviate itching or burning of the external vagina (vulvar pruritis), to remove excessive vaginal discharge (leukorrhea), to modify the infectious vaginitis conditions mentioned above, and to treat non-specific vaginitis (i.e., the cause is unknown).

Much of the douching controversy centers on the fact that there are no pain and itching symptoms until the inflammation has spread to the external genitalia. Therefore, a considerable cadre of gynecologists believe that the question of whether to douche or not is best answered by consultation and discussion between physician and patient rather than by heeding the advertisements in ladies' magazines.

Needless to say, none of the above mentioned conditions is amenable to self-medication. However, there is a move to make anti-candidal agents (e.g., nystatin) available OTC for women who have had candidiasis (moniliasis), are able to self-diagnose the condition, and can begin treatment while waiting to see the physician, who will determine whether other therapy is needed later.

This has been suggested by the FDA Advisory Panel on OTC Antifungal Drugs, and representatives of OTC manufacturing companies agree. At the time of writing this lesson, however, FDA has not accepted the shift of anti-candidal drugs to OTC status. While miconazole and haloprogin were granted OTC status, their manufacturers can promote them to the public for treatment of ringworm but not candidal infections.

While not taking sides in the argument of whether it is beneficial to douche, we should review the ingredients contained in OTC products, and discuss how they act. Most OTC douche products consist of one or more of the following agents: acidifiers, antimicrobial agents, astringents, counterirritants, and/or surfactants (see Table 4). At this time, none of these has been proven effective for its intended use.

TABLE 4
Ingredients in OTC Douche Products

Ingredient	Claimed Action
Acetic Acid	Acidifier
Alkyaryl Sulfonate	Surfactant
Ammonium aluminum sulfate	Astringent
Benzalkonium chloride	Surfactant*
Benzethonium chloride	Surfactant*
Boric Acid	Acidifier*
Cetearyl octate	Surfactant*
Cetylpyridinium chloride	Surfactant*
Citric acid	Acidifier
Eucalyptus	Analgesic
Lactic acid	Acidifier
Menthol	Analgesic
Methylbenzethonium chloride	Surfactant*
Methylsalicylate	Analgesic
Nonoxynol	Surfactant
Octoxynol	Surfactant
Phenol	Analgesic*
Polyoxyethylene nonyl phenol	Surfactant
Potassium aluminum sulfate	Astringent
Potassium sorbate	Antimicrobial
Povidone-iodine	Antimicrobial
Sodium laryl sulfate	Surfactant
Sorbic acid	Antimicrobial
Thymol	Analgesic*
Vinegar	Acidifier
Zinc sulfate	Astringent

*also claimed to have antimicrobial action

The **acidifiers** contained in OTC douche products include acetic acid (vinegar), boric acid, citric acid, and lactic acid. While commercial products are more convenient and expensive than homemade vinegar solutions, there is no evidence

(Continued on page 28)

CORRESPONDENCE COURSE

(Continued from page 27)

that any of them is more effective than a solution made from two tablespoons of vinegar in a quart of warm tap water. Acidifiers are used to lower an elevated vaginal pH to a more infective-resistant acidic pH.

Antimicrobials include the quaternary ammonium compounds (QAC's), benzalkonium chloride, benzethonium chloride, cetylpyridinium chloride, and methylbenzethonium chloride. These agents also serve as surfactants. Other antimicrobials used are oxyquinoline, phenylmercuric nitrate, povidoneiodine, and potassium sorbate/sorbic acid. Boric acid is also claimed to have antimicrobial activity. However, most of these agents are present as preservatives, rather than in concentrations likely to be antimicrobial. None has been proven to be an effective antimicrobial for this use.

Astringents are purported to reduce local edema, inflammation, and discharge. Those items claimed to exert this action when included in douche preparations are ammonium and potassium aluminum sulfate (alums) and zinc sulfate. These agents exert beneficial effects on skin and other mucous membrances so it can be assumed they will do the same on vaginal tissue.

Eucalyptol, menthol, methyl salicylate, phenol, and thymol are **counterirritants** which are added to the products to provide anesthetic, antipruritic, and antiseptic effects. Evidence of these effects are lacking. Many feel that, at the concentrations needed to provide counterirritant effects, the products would be too irritating to the sensitive membranes of the vaginal tract. In reality, at the strength present in OTC douche products, they are believed to provide a soothing, "refreshing" deodorant effect.

Surfactants such as docusate salts (previously called dioctyl sulfosuccinates), nonoxynol, octoxynol, and sodium lauryl sulfate are included to decrease surface tension and facilitate the spread of the douche solution over the mucosa of the vaginal tract. They are all effective for this purpose as are the quarternary ammonium compounds.

CORRESPONDENCE COURSE QUIZ

Personal Hygiene

1. Bacteria on the skin produce body odor by metabolizing material secreted by which of the following sweat glands?
   a. Apocrine.
   b. Eccrine.
2. The bacteria that cause underarm odor are:
   a. nonpathogenic.
   b. pathogenic.
3. Complexing the aluminum chlorohydrates with propylene glycol or polyethylene glycol accomplishes which of the following?
   a. Increased water solubility
   b. Increased effectiveness
   c. Increased safety
   d. Increased alcoholic stability
4. Vaginal infections are more likely to occur when the vaginal pH is:
   a. acidic
   b. neutral
   c. alkaline.
5. The leading theory holds that secretion from which of the following glands plays the most important role in subconscious communication between humans?
   a. Apocrine
   b. Eccrine.
6. All of the following are proposed theories on the mechanism by which antiperspirants act with the **EXCEPTION** of:
   a. the metallic ions in the antiperspirant bind with anions in the keratin tissue and form a functional closure of the sweat gland duct.
   b. the aluminum and zinc salts of the antiperspirants alter the permeability of water within the sweat gland.
   c. the metallic ions of the antiperspirants interfere with nerve stimulation of the sweat glands by acetylcholine.
   d. the aluminum and zinc ions of the antiperspirant chemically inactivate the odor producing metabolism within the causative organisms.
7. Solutions of aluminum chloride in concentrations greater than 15% are not considered to be safe for OTC use because:
   a. they are ineffective.
   b. they are insoluble.
   c. they are too acidic.
   d. they are too alkaline.
8. Vaginal "yeast" infections are caused by which of the following organisms?
   a. Candida.
   b. Gardnerella.
   c. Haemophilus.
   d. Trichomonas.
9. The basic difference between an antiperspirant and a deodorant is that:
   a. Antiperspirants decrease bacterial count, deodorants do not.
   b. Antiperspirants mask body odor, deodorants do not.
   c. Antiperspirants affect bodily action, deodorants do not.
10. The type of sweat that is profuse, watery and composed of sodium, chloride, potassium, urea, glucose and lactate best describes that produced by the:
    a. apocrine gland.
    b. eccrine gland.
11. All of the following formulations of zirconium-containing products are considered safe and effective for OTC antiperspirants **EXCEPT** the:
    a. aerosols.
    b. aqueous solutions.
    c. creams.
    d. lotions.
12. Which of the following is **LEAST** likely to exert its purported effect when used as a vaginal douche?
    a. Boric acid as an antimicrobial
    b. Octoxynol as a surfactant.
    c. Vinegar as an acidifier.
    d. Zinc sulfate as an astringent.
13. Apocrine gland secretion increases as a result of all of the following stimuli with the **EXCEPTION** of:
    a. anger.
    b. fear.
    c. heat.
    d. pain.
14. The term that refers to bad-smelling sweat is:
    a. anhydrosis.
    b. bromhydrosis.
    c. chromohydrosis.
    d. hyperhydrosis.
15. The type of sweat gland that is most involved in the regulation of body temperature is the:
    a. apocrine gland.
    b. eccrine gland.

DICKINSON'S PHARMACY

by Jim Dickinson

Case study: Losing to the chains. How does a firmly-established independent pharmacy lose a reliable and active, chronic patient to a drug chain in a prescription market that most experts agree is moving from price to service as its primary denominator?

This question goes right to the root of the survivability of independent pharmacy, and to the effectiveness of the PSAO (Pharmacy Services Administrative Organization) movement now sweeping the country. Because of this, the following case study (disguised to protect your columnist from lawyers but nonetheless based on fact) is importantly instructive.

Paul M, 46, is a self-employed businessman who's a well-stabilized chronic patient in a community that has three independent pharmacies and three chain drug stores. His drug bill runs about $200 a month, at the largest of the three independents, which has had his business for years.

Because he's well-stabilized, and because his life is orderly, the pharmacy's services have not concerned Paul. It has never bothered him, for instance, that the pharmacy is never open Sundays, unlike Thrifty Drug, Rite Aid and SupeRx.

Paul likes the convenience of charging his hefty drug purchases, especially when slow insurance reimbursements tie up his cashflow and cause him to run his account past 30 days.

And he likes the pharmacy itself. Although it does a heavy volume, it has managed to keep a small and personal atmosphere; in short, it looks like he thinks a pharmacy should look.

Emergency service, like Sunday service, had never been important to Paul. And that's the focal point of this case study — suddenly, both became very important to him.

One Friday night, as he was packing for a pre-dawn Saturday departure on a week-long business trip, he realized that one of his medicines would run out on Monday.

That's when he discovered that his independent pharmacy did not have an after-hours number. Not to worry, though — he'd leave a note under the pharmacy door with a completed Federal Express label on his way out of town — the pharmacist could ship it across country the next day, and it would be at his hotel bright and early Monday morning.

Paul's weekend passed in travel and business calls. So did an entire Monday — without his medication. Alarmed, he called his pharmacy during a break in a business meeting, to learn that the medication was not shipped until that very morning.

"But I need it *now!*"

"I sent it as soon as I saw your note," the pharmacist said, defensively.

"But I put that note under your door on Friday night — why didn't you send it Saturday? I even made out the Federal Express label for you, on my account."

"I don't know. The fellow who was here Saturday is off for three days. I sent it as soon as I saw your note."

Furious and frightened, Paul broke away from the meeting and went to the nearest pharmacy, which happened to be a Longs drug chain. He explained his plight to the pharmacy, showing the empty vial, and was dispensed enough to last him through his crisis.

That made Paul think about the different kinds of pharmacies, and what they do. Chains in his home town, he realized, don't close at 6:00 PM and all day Sundays, like his independent did. And the chain pharmacist who helped him as a total stranger was at least as personable and understanding as his own pharmacist.

Paul suddenly realized how vulnerable his independent pharmacy made him, lacking an after-hours emergency service when his expanding business would doubtless send him out of town at short notice again and again, more and more often. At the very least, he felt, his pharmacist should have had an answering service. The convenience of a charge account suddenly paled next to after-hours service.

It's not important to this case study to record what Paul did about his problem. What is important is the realization that his problem is symptomatic of a profound change in society's thinking about health care. As more and more people begin to work for themselves — and to self-insure, in the case of employers — the simplistic notion that price/convenience are everything yields to notions such as cost-effectiveness, drug utilization reviews, emergency service for increasingly mobile patients, and patient counseling.

The "S" in PSAO is the key, and it's strategically placed exactly where it belongs — right beside "Pharmacy." Paul paid twice for the

same drug, and used Federal Express at additional cost to himself, simply because his pharmacy could not respond to an emergency situation before he left town; in short, it could not be as helpful as a later-closing chain drugstore would have been.

"Service" isn't a big word. It can mean different things to different people. It's over-promoted and under-fulfilled. But it's what health care buyers want. The pharmacy — chain or independent — that fails to deliver it will likely lose out to one that does.

This feature is presented on a grant from G.D. Searle & Co., in the interests of promoting the open discussion of professional issues in pharmacy. G.D. Searle & Co., accepts no responsibility for the views expressed herein as they are those of the author and not necessarily those of G.D. Searle & Co.

Nard Launches

(continued from page 17)

the exposition will be greatly expanded to also include nonprescription drugs, health and beauty aids, and general merchandise. NARD expects a strong turnout of independent retail pharmacists for Rx Expo's expanded program offerings — all held in beautiful New Orleans — which means this will be an important marketing opportunity for exhibitors of home health care products, OTC drugs, sundries, and the wide variety of other products sold in independent pharmacies.

Promotion to exhibitors has already begun, and registration information will be distributed to the nation's independent retail pharmacists during December as part of an aggressive promotional campaign for Rx Expo '87.

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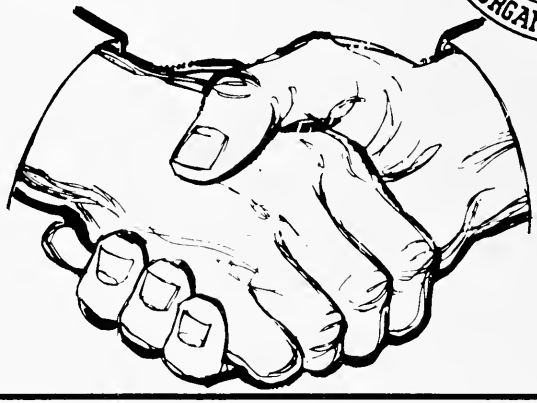

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SLEEPING PILLS: WHEN ARE THEY A SAFE ANSWER FOR THOSE WHO CAN'T SLEEP?

by J. Christian Gillin, M.D.
Professor of Psychiatry
University of California, San Diego
School of Medicine
La Jolla, CA

Methought I heard a voice cry, "Sleep no more! Macbeth does murder sleep!"

Macbeth and his lady, it would seem, could have used help with a sleep problem. In fact, a lot of us could use help today.

A recent national survey found that one-third of the population suffers from some degree of insomnia, and half of that group considers it serious, often leading to high levels of emotional distress.

In treating insomnia, sleep medications are sometimes appropriate, sometimes not. The ideal hypnotic does not exist. If it did, it would:

- Help you fall asleep quickly and sleep soundly,
- Improve next-day alertness,
- Bring sleep stages and patterns closer to normal,
- Not interact with other drugs,
- Be safe even when taken in large quantities,
- Be effective over a long period with no increase in dosage,
- Have no side effects.

Nevertheless, the National Institutes of Health reports that *properly prescribed* sleep medications can be safe and effective. And the new shorter-acting hypnotics rarely produce the next-day lethargy associated with earlier sleep medications.

Type of Insomnia Determines Type of Treatment

The key to proper use of the hypnotic agents lies in determining the type of insomnia being experienced. According to an NIH Consensus Panel, there are three basic types: transient insomnia, short-term insomnia and long-term insomnia.

Transient insomnia is related to minor situational stress such as long-distance jet travel or hospitalization for elective surgery. In such cases, physicians often recommend small doses of a short-acting hypnotic, with treatment lasting no more than one to three nights. Other physicians consider drug therapy unnecessary for transient insomnia. Just stick it out, they say; it happens to everyone occasionally. But transient insomnia can be disruptive or even dangerous if it is severe and precedes an important daytime task or a long drive.

Short-term insomnia can last up to three weeks and may recur. It is often associated with stress in work or family life, or with illness. In such cases, low doses of a hypnotic agent may be used *intermittently* for up to three weeks, along with avoiding caffeine, alcohol and daytime naps. The key to effective therapy is intermittent use, since continuous long-term use of hypnotic drugs can, paradoxically, lead to disruption of normal sleep. A short-acting drug is preferable where next-day alertness is desirable. A long-acting drug, on the other hand, may help allay next-day anxiety.

Long-term insomnia is more serious and calls for a complete diagnostic workup. In the absence of serious medical or psychiatric problems, long-term insomnia may respond to a combination of behavioral therapy, better sleep habits and, again, intermittent use of sleep-promoting medications, perhaps one night in three for a limited period of time.

The Many Facets of Sleep

The usual amount of sleep obtained and the timing of sleep vary between individuals. The newborn may sleep up to 16 hours per day, distributed in relatively short episodes more or less evenly across the 24-hour day. As babies grow older, total sleep time falls and gradually becomes more consolidated at night. Napping may continue for several years. On the other

(Continued on page 34)

SLEEPING PILLS

(Continued from page 33)

hand, the clearcut sleep-wake periods characteristic of adulthood often break down in the elderly as sleep becomes more shallow and broken, and wakefulness is interrupted by naps or periods of drowsiness.

In addition, people vary in the amount of sleep they require each night. Some people seem to thrive on six hours per night, while others don't feel well rested until they have obtained nine or more hours. No one really knows how much sleep is essential. The amount of sleep any individual needs can be determined by the Multiple Sleep Latency Test used by sleep disorders centers around the country.

A practical approach is to ask how alert and rested an individual feels during the day. A chronically sleepy person is either not getting enough sleep or suffers from excessive daytime sleepiness brought on by narcolepsy, sleep apnea, sedating medications or other medical or psychiatric disorders.

There are many reasons why such problems should be investigated, among them the fact that sleep loss accumulates, and the larger the sleep debt becomes, the more likely it is to lead to a potentially dangerous episode of drowsiness.

Because insomnia is so prevalent and significant a problem, the medical community has long sought effective and safe sleep-promoting medications.

Approximately 20 million prescriptions for sleeping pills are written in the United States each year, making them the most widely used of all drugs, according to Michael Balter, Ph.D., former chief of the Applied Therapeutics program of the National Institute of Mental Health. For example, about half of all patients in hospitals receive sleep-promoting medications at some time during their stay.

Nonprescription remedies for sleep are used in even greater volume than prescription drugs, even though their use can present problems. The active ingredient in almost all "nighttime sleep aids" is an antihistamine. Though antihistamines do promote drowsiness, their side effects can include disorientation, confusion, dizziness, ringing in the ears, poor coordination, blurred vision and irritability.

Alcohol is no help. Certainly a nightcap can lull you to sleep, but it won't be a sound sleep. Thomas Roth, Ph.D., director of the Sleep Disorders and Research Center at Henry Ford Hospital in Detroit, says alcohol in any pharmacologically active dose disturbs overall sleep.

Choosing the Best Hypnotic

For years, barbiturates were the drugs most commonly used to overcome insomnia. But they can be dangerous, even lethal in high doses. Taken regularly, they lose their effectiveness as tolerance develops. They can cause a cycle of dependence and escalating doses. When combined with alcohol, of course, barbiturates can be deadly.

Chloral hydrate and its derivatives were also prescribed regularly in the past, but their effectiveness is soon lost. The risk of overdose is high, and the drugs frequently cause gastric irritation and can lead to internal bleeding. They may also interfere with the effects of other drugs.

The benzodiazepines are currently the drugs of choice to induce sleep. For the most part, they are effective for both short-term and intermittent use and are nontoxic and nonaddictive. Three of them in the U.S. market today are specifically intended for the treatment of insomnia: flurazepam (Dalmane, Hoffman-LaRoche), temazepam (Restoril, Sandoz) and triazolam (Halcion, Upjohn).

They differ primarily in their rates of absorption and duration of action. Flurazepam is the longest acting, and triazolam is the shortest acting.

For Benzodiazepines: A Wide Spectrum of Use

According to the recommendations of a panel of sleep experts convened by the National Institutes of Health, the shorter-acting benzodiazepine hypnotics are generally preferred for transient and short-term insomnia. They are also recommended for such groups as younger patients with liver or kidney problems or geriatric patients, who clear drugs more slowly and are more sensitive to the effects of benzodiazepines. Longer-acting drugs may be preferable, the panel says, as adjunctive therapy in some chronic insomnia or in cases where reduction of next-day anxiety is desirable.

With some other patients, such as those who have sleep apnea or a history of substance abuse, the panel advises caution in the use of any sleep medication.

PHARMACISTS RECOGNIZED BY STATE SCHOOL BOARD ASSOCIATION

Two members of the North Carolina Pharmaceutical Association have been selected by the N.C. School Board Association as 1986 All State School Board Members.

Linda T. Taylor, Crossnore, and Richard Dameron, Tabor City, were honored at the 1986 North Carolina School Board Conference in Winston-Salem along with six other school board members from around the state.

The award is given for outstanding service to the local Board of Education as well as the North Carolina School Board Association.

Linda was a member of the Avery County Board of Education for eight years and chairperson for one year. Previously, she has been selected as Avery Woman of the year for her service to the community. She helped get a new roof and paved parking lot for Avery High School. She also helped plan for a new school in the area.

Linda, together with her husband, Bob, owns and operates the Crossnore Drugstore.

Richard is serving his third term on the Columbus County Board of Education and is current chairman. He has been president of the Tabor City Chamber of Commerce, the Civitan Club and the Columbus County Pharmaceutical Association. In June of 1986, Dameron Drug Store was presented the community service award by Merck Sharpe and Dohme.

The staff of the NCPhA, faces behind the voices you get on the phone. Left to right, Al Mebane, Executive Director; Betsy Mebane, financial secretary and administrative assistant; Erie Cocolas, receptionist and membership records; and Laura Tate, secretary, CE records and liability insurance.

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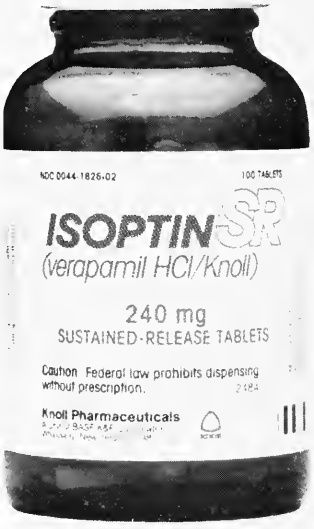

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WARNINGS: Heart Failure: ISOPTIN should be avoided in patients with severe left ventricular dysfunction (see DRUG INTERACTIONS). Patients with milder ventricular dysfunction should, if possible, be controlled before verapamil treatment. Hypotension: ISOPTIN (verapamil HCl) may produce occasional symptomatic hypotension. Elevated Liver Enzymes: Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Periodic monitoring of liver function in patients receiving verapamil is therefore prudent. Accessory Bypass Tract (Wolff-Parkinson-White): Patients with paroxysmal and/or chronic atrial flutter or atrial fibrillation and a coexisting accessory AV pathway have developed increased antegrade conduction across the accessory pathway producing a very rapid ventricular response or ventricular fibrillation after receiving intravenous verapamil. While this has not been reported with oral verapamil, it should be considered a potential risk. Treatment is usually D.C.-cardioversion. Atrioventricular Block: The effect of verapamil on AV conduction and the SA node may cause asymptomatic 1st degree AV block and transient bradycardia. Higher degrees of AV block, while infrequent (0.8%), may require a reduction in dosage or, in rare instances, discontinuation of verapamil HCl. Patients with Hypertrophic Cardiomyopathy (IHSS): Although verapamil has been used in the therapy of patients with IHSS, severe cardiovascular decompensation and death have been noted in this patient population.

PRECAUTIONS: Impaired Hepatic or Renal Function: Verapamil is highly metabolized by the liver with about 70% of an administered dose excreted in the urine. In patients with impaired hepatic or renal function verapamil should be administered cautiously and the patients monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacological effects (see OVERDOSAGE).

Drug Interactions: Beta Blockers: Concomitant use of ISOPTIN and oral beta-adrenergic blocking agents may be beneficial in certain patients with chronic stable angina or hypertension, but available information is not sufficient to predict with confidence the effects of concurrent treatment in patients with left ventricular dysfunction or cardiac conduction abnormalities. Digitalis: Clinical use of verapamil in digitalized patients has shown the combination to be well tolerated if digoxin doses are properly adjusted. However, chronic verapamil treatment increases serum digoxin levels by 50 to 75% during the first week of therapy and this can result in digitalis toxicity. Upon discontinuation of ISOPTIN (verapamil HCl), the patient should be reassessed to avoid underdigitalization. Antihypertensive Agents: Verapamil administered concomitantly with oral antihypertensive agents (e.g., vasodilators, angiotensin-converting enzyme inhibitors, diuretics, beta blockers, prazosin) will usually have an additive effect on lowering blood pressure. Patients receiving these combinations should be appropriately monitored. Disopyramide: Disopyramide should not be administered within 48 hours before or 24 hours after verapamil administration. Quinidine: In patients with hypertrophic cardiomyopathy (IHSS), concomitant use of verapamil and quinidine resulted in significant hypotension. There has been a report of increased quinidine levels during verapamil therapy. Nitrates: The pharmacologic profile of verapamil and nitrates as well as clinical experience suggest beneficial interactions. Cimetidine: Two clinical trials have shown a lack of significant verapamil interaction with cimetidine. A third study showed cimetidine reduced verapamil clearance and increased elimination to 1/2. Anesthetic Agents: Verapamil may potentiate the activity of neuromuscular blocking agents and inhalation anesthetics. Carbamazepine: Verapamil may increase carbamazepine concentrations during combined therapy. Rifampin: Therapy with rifampin may markedly reduce oral verapamil bioavailability. Lithium: Verapamil may lower lithium levels in patient on chronic oral lithium therapy. Carcinogenesis, Mutagenesis, Impairment of Fertility: There was no evidence of a carcinogenic potential of verapamil administered to rats for two years. Verapamil was not mutagenic in the Ames test. Studies in female rats did not show impaired fertility. Effects on male fertility have not been determined. Pregnancy (Category C): There are no adequate and well-controlled studies in pregnant women. ISOPTIN crosses the placental barrier and can be detected in umbilical vein blood at delivery. This drug should be used during pregnancy, labor, and delivery, only if clearly needed. Nursing Mothers: ISOPTIN is excreted in human milk, therefore, nursing should be discontinued while verapamil is administered. Pediatric Use: Safety and efficacy of ISOPTIN in children below the age of 18 years have not been established.

ADVERSE REACTIONS: Constipation 8.4%, dizziness 3.5%, nausea 2.7%, hypotension 2.5%, edema 2.1%, headache 1.9%, CHF/pulmonary edema 1.8%, fatigue 1.7%, bradycardia 1.4%, 3° AV block 0.8%, flushing 0.1%, elevated liver enzymes (see WARNINGS). The following reactions, reported in less than 1.0% of patients, occurred under conditions (open trials, marketing experience) where a causal relationship is uncertain; they are mentioned to alert the physician to a possible relationship: angina pectoris, arthralgia and rash, AV block, blurred vision, cerebrovascular accident, chest pain, claudication, confusion, diarrhea, dry mouth, dyspnea, ecchymosis or bruising, equilibrium disorders, exanthema, gastrointestinal distress, gingival hyperplasia, gynecomastia, hair loss, hyperkeratosis, impotence, increased urination, insomnia, macules, muscle cramps, myocardial infarction, palpitations, paresthesia, psychotic symptoms, purpura (vasculitis), shakiness, somnolence, spotty menstruation, sweating, syncope, urticaria. Treatment of Acute Cardiovascular Adverse Reactions: Whenever severe hypotension or complete AV block occur following oral administration of verapamil, the appropriate emergency measures should be applied immediately, e.g., intravenously administered isoproterenol HCl, levarterenol bitartrate, atropine (all in the usual doses), or calcium gluconate (10% solution). If further support is necessary, inotropic agents (dopamine or dobutamine) may be administered. Actual treatment and dosage should depend on the severity and the clinical situation and the judgment and experience of the treating physician.

OVERDOSAGE: Treatment of overdosage should be supportive. Beta-adrenergic stimulation or parenteral administration of calcium solutions may increase calcium ion flux across the slow channel, and have been used effectively in treatment of deliberate overdosage with verapamil. Clinically significant hypotensive reactions or fixed high degree AV block should be treated with vasopressor agents or cardiac pacing, respectively. Asystole should be handled by the usual measures including cardiopulmonary resuscitation.

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Relief Pharmacist Available: Central Eastern North Carolina. Contact Pharmacy Relief, PO Box 2064, Chapel Hill NC 27515, or call 919-481-1272 evenings.

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Winthrop Pharmaceuticals Adopted as New Name for Winthrop-Breon Laboratories

On January 1, 1987, Winthrop-Breon Laboratories became Winthrop Pharmaceuticals, it was announced today by Harry A. Shoff, President of Winthrop. The division is the ethical medical marketing unit of Sterling Drug Inc., New York.

In making the announcement, Mr. Shoff stated: "We changed the name to define more concisely our interests and to bring us more closely in line with our stated corporate mission — to continue to provide high-quality pharmaceuticals that best serve the needs of patients and our customers. This name change," he said, "clearly defines this philosophy."

The name Winthrop has long been associated with Sterling's prescription business, beginning soon after World War I when the Winthrop Chemical Company Inc. was established as a Sterling subsidiary to market prescription medicines. It became Winthrop-Breon in 1984 upon the consolidation of Sterling's two ethical marketing divisions: Winthrop Laboratories and Breon Laboratories.

PHARMACY NETWORK OF NORTH CAROLINA

The Pharmacy Network of North Carolina is off to a fast start. Executive Director, Andy Barrett reports that two proposals have been presented. One of these proposals was to an insurance company and the other to a major HMO. Response is expected from the insurance company during the first quarter of 1987. Negotiations are underway with the HMO. Additionally, proposals are being prepared for another HMO and two PPO's have requested the development of a prescription drug program.

Membership in PN/NC is now over 550 stores with the recent commitment by the Rite Aid chain to join with all its stores. Inquiries concerning membership have been received from all the chains in North Carolina. Barrett expects membership to increase dramatically as soon as a contract is signed with a third party.

Barrett reports, "We are making an impact on the third party sector. PN/NC has something of value to sell to third party payers who are marketing their services in a highly competitive marketplace. We have convenient, quality, cost-effective pharmacy services available from a state-wide network of stores. We will make a significant impact on pharmacy in North Carolina. Individual pharmacists can help themselves and PN/NC by communicating the advantages of neighborhood pharmacies to their customers."

Andy Barrett, Executive Director
Pharmacy Network of North Carolina

PHARMACIST PROFESSIONAL SERVICES/CONSULTATION: Temporary and/or Continual. Contact: L.W. Matthews, III (919) 967-0333 (or 929-1793). 1608 Smith Level Rd., Chapel Hill NC 27514.

PHARMACIST NEEDED: Kerr Drug Stores has pharmacist positions available in North Carolina. For more information send resume to P.O. Box 6100, Raleigh, NC 27661 or call Jackie Gupton at (919) 872-5710.

PHARMACIST NEEDED — Large, progressive independent is looking for a pharmacist who enjoys consulting with

(continued on page 40)

Sheryl Brown, left, and Daniel Miller, right, Merck, Sharp and Dohme representatives, are shown presenting the Pharmacy Recognition Award to Waits A. West and Thomas L. West of Tart and West Druggists, Roseboro. The award is given for significant achievements in continuous service to their community for 78 years.

CLASSIFIEDS

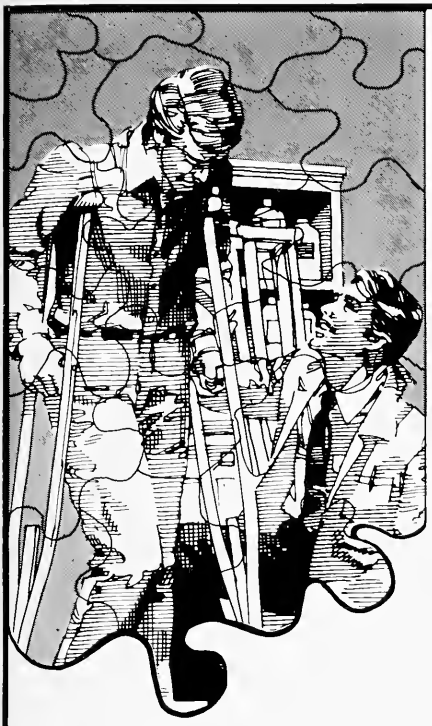
(Continued from page 39)

customers. Computerized prescription department, excellent salary, hospitalization and life insurance, paid vacations. Central North Carolina. Call Micky Whitehead at R&M Mutual Discount Drugs, Ramseur, 919-824-2151.

HOSPITAL PHARMACIST WANTED: The Department of Pharmacy Services at Sampson County Memorial Hospital has opportunities available for hospital pharmacy practice. Our 145 bed JCAH approved hospital has excellent working conditions with all ancillary departments including active Medical Staff. Starting salary in mid 30s plus comprehensive benefit package. Activities: include complete computerization, IV admixture, unit dosage, patient profile and inventory control. Patient Services: antibiotic monitoring, TPN, aminoglycoside dosing and support for continuing education. Interested cadidates contact: Patricia R. Britt, Director, Personnel 919-592-8511 EXT 477, Sampson County Memorial Hospital, Clinton NC 28328.

PROFESSIONAL PHARMACIES: Several small prescription-oriented pharmacies are currently avaialbe for individual ownership in North Carolina. These opportunities provide the vehicle to practice pharmacy the way you were taught, while offering an attractive income and more time to be with your family. In some cases, financing is also available to qualified candidates. For more information write: Jan Patrick, 10121 Padget Dr., St. Louis MO 63132.

Pharmacist Wanted: Permanent full-time, Pharm.D. preferred, to work as comprehensive farm worker health clinician, education and consultation, protocol development, inventory and formulary maintenance. NC licensure and one year experience required. Fluency in Spanish a plus. Send resume or call: Mr. Baker, Tri-County Community Health Center, PO Box 537, Newton Grove NC 28366. (919) 567-6194.



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Due to our commitment and involvement with medical/surgical products, you can enjoy competitive prices and a large assortment of disposable products in stock. We will also be happy to locate special order products in one of our medical/surgical branches and drop ship them to your store.

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Complete home health care programs are conducted for the retailer by our trained specialist initially and on an on-going basis.

- **FLOOR PLANNING**

Floor plans, store fixtures, plan-o-grams, display materials and merchandising assistance are available to the retailer, for new locations or re-merchandising existing stores.

- **ADVERTISING AND PROMOTION**

A wide variety of advertising materials including signs, decals, window banners, statement or bag stuffers, brochures, patient education materials, newspaper advertisements, catalogues, radio copy, letters, and circulars are available to assist the retailer in promoting home health care products in the retail market.

- **REPRESENTATION**

A marketing specialist is available to and will assist the retailer in the store on a regular basis in order to provide continuous support in the home health care market.

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A service bureau to electronically submit third-party claims to Medicare Part B will enhance the bottom line profit through savings in time, personnel and increased cash flow.

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A customer service representative, fully trained in third-party billing and medical/surgical products, is available by telephone with the sole responsibility of supplying the product to you as quickly as possible and to answer questions relating to third-party claims.

Contact your Owens & Minor representative or call a sales manager at one of the following locations:

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4825 Bethlehem Road, Richmond, VA 23230
804/355-0681
4500 Progress Road, Norfolk, VA 23502
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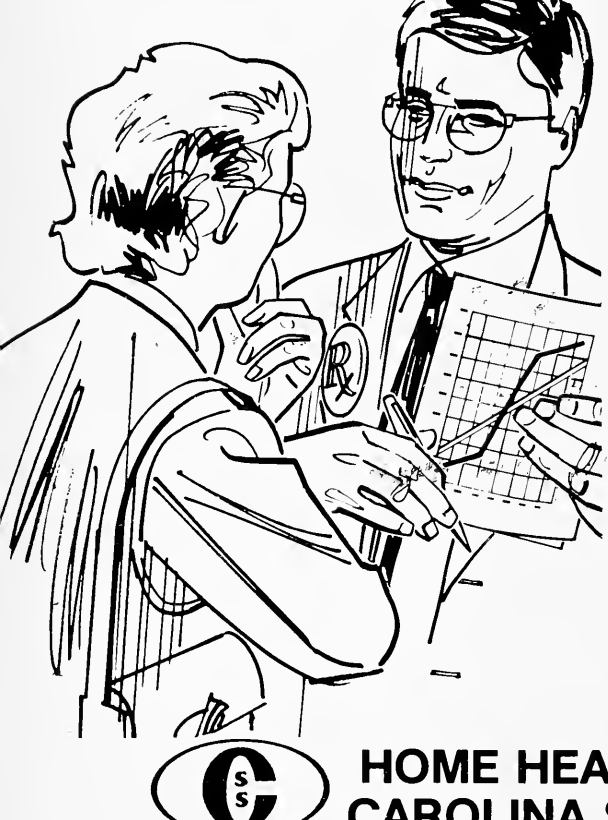

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THE CAROLINA
JOURNAL of PHARMACY

FEBRUARY 1987 VOLUME 67 NUMBER 2

1987 ANNUAL CONVENTION

NORTH CAROLINA PHARMACEUTICAL ASSOCIATION

AND

AFFILIATED AUXILIARIES

Adam's Mark Hotel
Charlotte North Carolina
April 22, 23, 24 and 25

107th Annual Convention
North Carolina Pharmaceutical Association

73rd Annual Convention
Traveling Members' Auxiliary

60th Annual Convention
Woman's Auxiliary

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THE CAROLINA
JOURNAL of PHARMACY

(USPS 091-280)

FEBRUARY 1987 VOLUME 67 NUMBER 2
ISSN 0528-1725

CONTENTS

1987 Convention Schedule 4
Association Lobbyist 7
Steroid Hormones 11
Pharmacy Policy Research Lab. 17
State Board of Pharmacy 19
Correspondence Course, Contact Lenses 23
Dickinson's Pharmacy 31
Eckel Elected to Board 34
CE Course Quiz 35
Life Members 37
Classified Advertising 38
Births and Deaths 40

ADVERTISERS

Carolina Surgical Supply 24
Colorcraft 30
Justice Drug Company 1
Kendall Drug Company ..... 2nd Cover
Knoll Pharmaceuticals ..... 32 and 33
Lawrence Pharmaceuticals 20
Lilly/Dista 8
Owens & Minor ..... 3rd Cover
Pilot Life 2
Roche ..... 14 and 15
Savage Laboratories 16
Dr. T.C. Smith Co./W.H. King Drug ..... 4th Cover
Spear Associates ..... 10 and 18
Upjohn 6
USP 12
Washington National 22

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1987 ANNUAL CONVENTION
NORTH CAROLINA PHARMACEUTICAL ASSOCIATION AND AFFILIATED AUXILIARIES

Adam's Mark Hotel
Charlotte, North Carolina
April 22 – 25, 1987

WEDNESDAY April 22, 1987

8:00 am	Seminar Registration Desk opens
9:00 am – 4:00 pm	Seminar — "Substance Abuse: Disease, Pharmacology and Treatment", sponsored by NCPhA and NCSHP with an educational grant from Glaxo, Inc.
3:00 pm	Convention Registration Desk Opens
7:30 pm	Opening Session Banquet *Guest Speaker: Michael Broome* Features: Presentation of NCPhA Coat of Arms, Don Blanton Award and Bowl of Hygeia Award, Young Pharmacist of the Year and announcement of 1987 NCPhA Pharmacist-of-the-Year

THURSDAY April 23, 1987

7:30 am	PharmPAC Breakfast
9:00 am	NCPhA First Business Session
9:15 am	Buses start loading for Auxiliary Tour
9:30 am	Buses leave for Auxiliary Tour to Heritage USA and Marriott Hotel
12:30 pm	Luncheon and Fashion Show Marriott Hotel, Tyvola Road
1:00 pm	UNC Practitioner-Instructor Luncheon
2:00 pm	Buses leave for Shopping at South Park "Specialty Shoppes on the Park"
Afternoon	Golf Tournament, Larkhaven Golf Club Sponsored by Owens-Illinois Tennis Tournament, Freedom Park Courts Sponsored by Jefferson-Pilot
2:00 pm	Workshop on "Anti-dysrhythmic Drug Therapy"
3:00 pm	Watercolor Class** — Joe Miller, Artist in Residence Dinner on Your Own
9:00 – 12:00 pm	TMA Sponsored Dance Joyce Hawley and the Rhythm Section

Don Hill
NCPhA Convention Chairman

Mary Lou Davis
Woman's Auxiliary
Convention Chairman

FRIDAY April 24, 1987

8:30 am	Coffee and Goodies, Woman's Auxiliary Hospitality Room
9:00 am	NCPhA Second Business Session
9:30 am	Woman's Auxiliary Business Session
11:00 am	Traveling Members' Auxiliary Business Session
11:45 am	Buses start loading for Myers Park Country Club
Noon	Buses leave for Myers Park Country Club Auxiliary Luncheon and Installation of Officers
12:30 pm	Opening of Exhibit Program Complimentary Buffet Luncheon in Exhibit Hall
2:00 pm	Woman's Auxiliary Tour of Historic Mint Museum
5:00 pm	Exhibit Program closes
	Dinner on Your Own
8:30 pm	Casino Night
10:30 pm	Auction to benefit Woman's Auxiliary Consolidated Pharmacy Loan Fund

SATURDAY April 25, 1987

7:30 am	Christian Pharmacists Breakfast
9:00 am	NCPhA Third Business Session
12:30 pm	Awards Luncheon & Installation Ceremony Speaker: Lonnie Hollingsworth, President, NARD Induction into 50+ Club, Academy of Pharmacy, and other awards. Installation of 1987–1988 NCPhA Officers
2:45 pm – 4:00 pm	NCPhA Executive Committee meeting

**Pre-Registration required.

Woman's Auxiliary Hospitality Room will be open except during W.A. functions.

NOTE: Convention badges required for attendance at all functions.

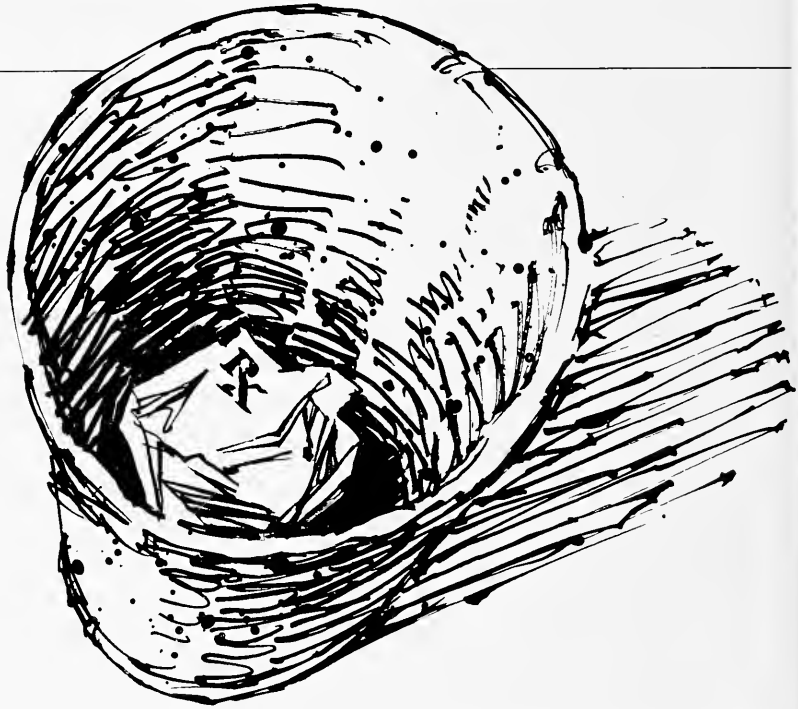
1987–1988 NCPhA Officers To Be Installed

President	Julian E. Upchurch — Durham
First Vice President	Albert F. Lockamy, Jr. — Raleigh
Second Vice President	W. Robert Bizzell — Kinston
Third Vice President	Loni T. Garcia — Lumberton

Executive Committee Members-at-Large
Betty H. Dennis — Carrboro
Claude U. Paoloni — Chapel Hill
Donald V. Peterson — Durham

Joyce Hawley

This is the only thing a lot of prescriptions will ever fill.



Sad, but true. Prescriptions written for 14% of your customers never make it to your pharmacy counter*. When asked for a reason, nearly 75% of the noncompliant group said they didn't need the medication... or didn't want to take it.

Another 6% told tales of prescriptions lost, prescriptions forgotten... or drugs that weren't available.

But surprisingly enough in this age of tight budgets, only one in ten persons said they canned their prescriptions because of high cost.

Like to know more? Just contact your Upjohn representative.

*According to the 1985 National Prescription Buyer Survey by Market Facts, Inc.

Upjohn

Sharing knowledge...sharing success.

NCPhA Legislative Lobbyist, Virgil McBride

Virgil L. McBride

The North Carolina Pharmaceutical Association is pleased to announce the selection of Virgil L. McBride as our legislative agent (or lobbyist) for this session of the North Carolina General Assembly. We look forward to a long and productive partnership and expansion of pharmacy's visibility as an important force in health related legislative issues.

Mr. McBride is a native of Mississippi. Born in 1933, he received his B.A. in Psychology and Speech from Mississippi College, Clinton, Mississippi and later his B.D. from Southeastern Baptist Theological Seminary, Wake Forest. He has done additional studies in business administration, communications, personnel administration and local government administration. He is a graduate of the Executive Program of Professional Management Education, University of North Carolina at Chapel Hill.

Mr. McBride has had a wealth of experience which will benefit him in his work as a lobbyist in the North Carolina General Assembly. He served in the US Navy in the Bureau of Navy Personnel. From 1961 to 1969, he was the Assistant to the President of Chowan College and was Director of Development. He was also Director of Development at Wake Forest University, from which he received a leave of absence to become the first Executive Director of the North Carolina Association of Independent Colleges and Universities in 1970, a position he held for four years. Since 1974, Mr. McBride has been associated with R.J. Reynolds Industries, Inc. in their public affairs department.

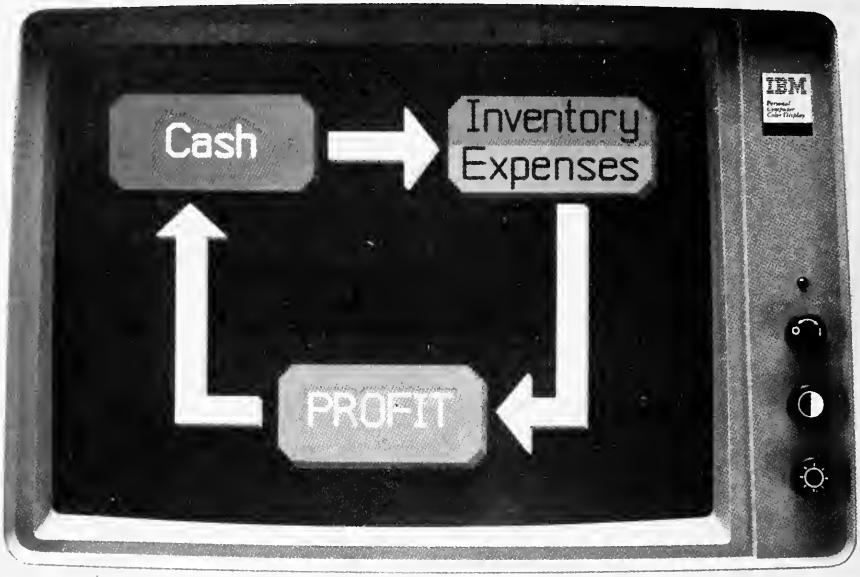
He was president of the Travel Council of North Carolina, President of the Carolina Society of Association Executives, a member of the Advisory Committee on Assessment and Accountability, North Carolina Board of Education, Treasurer of the Governor's Business Council on the Arts and Humanities and a member of the NC Rural Development Advisory Council, to list a few areas of his involvement in North Carolina politics, state government and service positions.

We hope you will meet Mr. McBride and get to know him and let him get to know you, the pharmacist he works for. You can contact him through the NCPhA office in Chapel Hill or by calling the General Assembly Legislative Switchboard at (919) 733-4111 and leaving a message. The NCPhA will try to have Mr. McBride attend as many local association meetings as possible. Your interest and personal involvement with your legislators is as important as anything one lobbyist can accomplish.

Trivia

For what was Richard Q. Peevy recognized by NARD in 1951? First correct answer will receive suitable prize and recognition.

Follow the arrows to better cash flow management.



And they could lead you to greater profits. With the help of the new Lilly Computerized Pharmacy Management Series, you can learn key cash management techniques that may be employed for operating a more profitable pharmacy. But you also earn as you learn. On satisfactory completion of a test at the end of each unit, you receive 2 hours (0.2 CEU) of continuing education credits.

With the aid of this "hands-on" program, you'll be moving in the right direction...toward increased profits.

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APhA's EIGHTH EDITION OF HANDBOOK OF NONPRESCRIPTION DRUGS NOW AVAILABLE

***Handbook of Nonprescription Drugs*, eighth edition, prepared by the American Pharmaceutical Association with the assistance of pharmacists, physicians, other health care specialists, and the U.S. Food and Drug Administration. Published by the American Pharmaceutical Association, Washington, DC 20037; 1986. 768 pages, hardbound, 8½ × 11 in. List price: $70.**

Long recognized by pharmacy practitioners, pharmacy students, and other health professinals as the ultimate source of information on nonprescription medications, the completely revised and updated 8th edition of the American Pharmaceutical Association's *Handbook of Nonprescription Drugs* is now available.

The Handbook's 35 chapters are organized to provide quick, practical information on therapeutic groups of nonprescription products and the conditions for which these products are used. The 768 page reference provides detailed information on virtually every aspect of nonprescription medications, with discussion of such topics as cold and allergy products, laxative products, antacids, nutritional supplements, weight control products, personal care products, burn and sunburn products, sleep aids, internal and external analgesics, and nonprescription contraceptives.

A unique feature of the Handbook are the product tables which provide at-a-glance comparative information — including quantitative amounts of active ingredients — on virtually all nonprescription products. The more than 100 tables have been completely updated for the 8th edition

In addition, extensive illustrations and anatomical drawings throughout the book are complemented by a special eight-page section of full-color photographs showing common dermatological and dental/oral conditions. The comprehensive index lists drugs by both trade and generic names, and includes disease conditions and symptoms.

Because nonprescription drugs, and the ways in which people use them, have changed enormously over the past few years, the 8th edition features a number of important changes:

* Extensive revisions throughout to accurately reflect product reformulations, new product introductions, and changes in brand name or manufacturer identification.
* New text discussions and product listings for former prescription drugs now generally available — including ibuprofen and hydrocortisone.
* An entirely new chapter on antipyretic drug products, reflecting professional and public concern over Reye Syndrome.
* A completely new section on sports medicine, with special emphasis on foot injuries.
* New product information on calcium-rich dietary supplements, reflecting the growing public concern about osteoporosis.
* Extensive revision of contact lens information, including four new product tables for soft and gas-permeable contact lenses — and a fifth table comparing the different types.
* Expanded information on dentifrices and oral health care products, including abrasivity data.
* New separate product listings for inhalent and orally-administered dosage form asthma products.

After December 31, 1986, the price will rise to $56 and $70, respectively. Student APhA chapters and bookstores qualify for special rates. For specific ordering information, contact the Order Desk, APhA, 2215 Constitution Avenue, NW, Washington, DC 20037.

PHARMACIST MOBILITY

According to the latest National Association of Boards of Pharmacy Newsletter, North Carolina ranked 5th on a list of pharmacists reciprocating into the state for the period 1984 through 1986. Ahead of North Carolina were Texas (715), Virginia (642), Maryland (609), Pennsylvania (601). North Carolina received 585 pharmacists during that time. These figures reflect mobility by reciprocity procedures and do not include pharmacists who become licensed in other states by examination.

The data also indicated which states had the greatest difference in pharmacists reciprocating into the state and out of the state. Arizona had the greatest net gain (368), followed by Virginia (367), Maryland (360) and North Carolina (347). Hawaii had two pharmacists leave the state and 77 reciprocate into the state, while Alaska lost 9 pharmacists and gained 63.

SURVEY FINDS WIDESPREAD IGNORANCE ABOUT ASPIRIN'S MANY USES

Most Americans don't know that aspirin may be used to reduce the risk of heart attack and stroke in high-risk persons.

In a recent national survey, it was learned that only one in four Americans has heard about aspirin therapy for vascular diseases — the nation's Number One killer.

The survey was conducted by New World Decisions, an opinion research firm in New Jersey.

Last fall, the U.S. Food and Drug Administration approved the use of aspirin to help reduce the risk of heart attack in those who have already had a heart attack, or who have unstable angina. Aspirin has also been approved by FDA to help reduce the risk of stroke in those at risk.

Studies show that in those who have unstable angina, one aspirin a day could reduce the incidence of heart attack by almost one-half. However, only 29 percent of those over 49 years of age — the population most at risk for vascular diseases — were familiar with this treatment.

The proportion of Americans who report using aspirin to treat certain conditions parallels the proportion of those who are aware of aspirin's use for those conditions.

For example, the highest level of awareness was for aspirin's usefulness in treating arthritis. Aspirin for arthritis also had the highest frequency of use — 11 percent.

Use of aspirin to reduce the risk of heart attack and stroke was only 5 percent of those surveyed.

Will aspirin keep heart attacks away? Researchers are now investigating whether aspirin can be used by the general healthy population to reduce the risk of vascular diseases. A major study is expected to be released soon.

STEROID HORMONES: WIDE AVAILABILITY PROMOTES RESEARCH, TREATMENT OF MANY DISEASES

Imagine a scenario in which control of your reproductive functions was dependent upon tracking down and eating certain plants. The California quail faces just such a predicament: In years with little rain, its principal food source is desert plants containing steroid hormones. These inhibit quail reproduction, limiting the population to a size the desert can feed.

The idea of humans in a similar situation is not so farfetched. We use steroid hormones — in the form of birth control pills — to control reproduction. Today, these generally come not from plants or animals, but from microbes.

Conversely, some people don't produce enough of these hormones normally and are dependent on external sources. Steroid deficiency is linked to impotence in men, infertility and early menopause in women, as well as a host of serious medical conditions.

Steroid hormones — derived from cholesterol and produced by the adrenal glands — control a wide variety of biological processes in the body. It wasn't until the 1930s that humans discovered the potent hormonal and anti-inflammatory properties of steroids. This finding attracted widespread attention, and a team of researchers soon applied it to the treatment of rheumatoid arthritis. They won a Nobel Prize for that discovery.

In 1949, cortisone, an anti-inflammatory steroid hormone, was synthetically manufactured for the first time by chemists at The Upjohn Company, using a process that involved microbiological fermentation. Prior to this breakthrough, cortisone was produced by a very costly and tedious process requiring extraction of small amounts of the hormone from tons of cow adrenal glands or from exotic plants containing cortisone precursors.

The successful synthesis of cortisone by Upjohn made the hormone widely available and affordable for the first time to people who desperately needed it. Upjohn's technique ushered in the era of steroidal anti-inflammatory treatment.

Today a variety of synthetic steroidal drugs are available for the treatment of arthritis, as well as numerous other incapacitating illnesses.

Corticosteroid Sources in Your Body

The key to appreciation of steroid hormone's diversity lies in understanding their basic biology. There are two types of natural *corticosteroids* (so named because they come from the outer layers, the cortex, of the adrenal glands), both naturally produced from cholesterol. The *mineralocorticoids* help regulate sodium and potassium levels and other body minerals. They promote proper muscle and nerve functions as well as maintenance of adequate blood volume and pressure. The *glucocorticoids* regulate sugar and protein metabolism and possess potent anti-inflammatory and immunosuppressive properties.

Under ordinary conditions, the brain — specifically, the hypothalamus and the "master gland," the pituitary, (see figure #1) controls corticosteroid (cortisol) secretion. When blood levels of cortisol fall, the hypothalamus sends a chemical messenger (called a releasing factor) to the pituitary gland, signaling it to release another chemical messenger, adrenocorticotropic hormone (ACTH) into the bloodstream. ACTH stimulates the adrenal gland to secrete cortisol. The hypothalamus monitors the blood levels of cortisol and turns off the signal to the pituitary gland once cortisol levels return to normal.

However, in adrenal insufficiency this regulatory system fails, and specific diseases develop. *Addison's disease,* characterized by weakness, weight loss, irritability, lethargy and low blood pressure, is associated with a deficiency of adrenal hormones. *Cushing's syndrome,* marked by hypertension, thin skin, accumulation of abdominal fat, "moon face," osteoporosis (loss of bone substance) and red cheeks, is linked to an *excess* in the production of adrenal hormones.

Steroid Hormone Mechanism of Action

"At the molecular level, corticosteroids bind to specific steroid receptor molecules found within most cells," says Susan Katz, M.D., assistant professor of medicine at Albert Einstein College of Medicine in New York City. Once bound, they alter the cell's production of proteins.

Another group of potent, hormone-like substances, the *prostaglandis,* appear to be involved in inflammatory and allergic reactions

Continued on page 12

as well. Steroids inhibit the formation of certain prostaglandins by preventing the release of prostaglandin precursors.

"It's not clear, however, how cellular changes produced by steroids are related to their therapeutic effects," adds Dr. Katz. "Steroids stabilize the cell membrane and cause blood vessels to constrict. These effects probably underlie their most important clinical properties."

Many Applications for Steroid Therapy

The most widely exploited property of corticosteroids is their ability to reduce localized swelling, redness and tenderness — aspects of inflammation. However, it is important to realize that while corticosteroid therapy reduces inflammation, it may mask the underlying disease. So the underlying disease itself must be aggressively treated at the same time that steroids are administered.

Corticosteroids are also used therapeutically for their immunosuppressive properties. They reduce the individual's defense against infection. Taking advantage of this, physicians use steroids to suppress immunity in *organ transplant* patients to prevent rejection of transplanted organs.

Another use for steroids is in the treatment of *autoimmune disorders,* such as rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis and myasthenia gravis. In these diseases, the body's immune system fails to distinguish infecting foreign invaders from its own components. And the body mistakenly produces antibodies against itself. Steroids effectively suppress this destructive cycle.

Steroids are also used to treat inflammation of the eye and skin, hormone-dependent tumors of the breast, leukemia, lymphoma and respiratory disorders.

A Word About Steroid Toxicity

There is good reason to use steroids, reserving them only for conditions that do not respond to more moderate treatment. The prolonged use of oral or injected steroids can result in suppression of adrenal function, along with increased susceptibility of infection, weakness, osteoporosis and behavioral changes.

Abrupt withdrawal of long-term steroid therapy may activate the condition for which steroids were initiated. Antibiotic therapy is often necessary to combat bacterial or fungal infection

in patients treated with immunosuppressive steroids.

In general, steroids should be administered in what is determined to be the smallest effective dose in an attempt to avoid these complications. Treatment is usually tapered off gradually as the crisis abates.

Pulse-dosing — intermittent high doses of steroids over short periods of time — may be more effective in treating certain diseases than long-term treatment with low doses. In the future, novel drug delivery systems that target drugs directly to the problem area will help to reduce toxicity and improve effectiveness.

Sex Hormones Are Also Steroids

The female ovaries and the male testes are responsible for the production of another group of steroids, the sex hormones — estrogen, progesterone and testosterone. These hormones are responsible for sexual development at puberty and plan an important role through our lives in shaping body and behavior.

The normal menstrual cycle in women is governed by the cyclical production of estrogen and progesterone. These hormones are some of the most frequently prescribed drugs in the world today. As many as 50 million women worldwide are taking some form of oral contraception to inhibit ovulation. Combined preparations of estrogen and a progesterone-type agent (progestin) are nearly 100 percent effective in preventing pregnancy. The side "mini pill," containing only the latter, is about 98 percent effective but avoids many of the side effects related to estrogen.

In menopause, the ovaries gradually stop producing hormones and menstruation ceases. Replacement therapy with a combination of estrogen and a progestin often provides relief from hot flashes, vaginal thinning and osteoporosis.

Replacement therapy with androgen (testosterone; Depo-Testadiol, Upjohn) is used primarily to promote genital development and normal growth in the deficient male. Testosterone is an effective treatment for some types of impotence as well.

Anabolic Steroids: How Dangerous Is Their Use?

Androgens are also used by athletes who exploit these drugs for their anabolic (body-building) properties. The androgens can cause dramatic weight gain in short periods by reducing the body's ability to utilize protein.

It is believed that some athletes self-administer high doses of a mixture of oral and injectable steroids during training and taper them off prior to competition to avoid detection.

In the few controlled studies addressing this issue, anabolic steroids increased body weight (apparently through water retention), but no clear effect on muscle mass could be documented.

Prolonged anabolic steroid use may result in acquired masculinization in females, feminization in males, insomnia, irritability and a variety of serious blood disorders.

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The survey was developed by Sandoz Consumer Health Care Group in association with The National Association of Retail Druggists and a distinguished consultant panel.

The Pharmacy Patron Survey will be announced in major national and state pharmacy journals. Pharmacists wishing further information about this program should contact Lon D. Lowrey, 1-800-228-4575.

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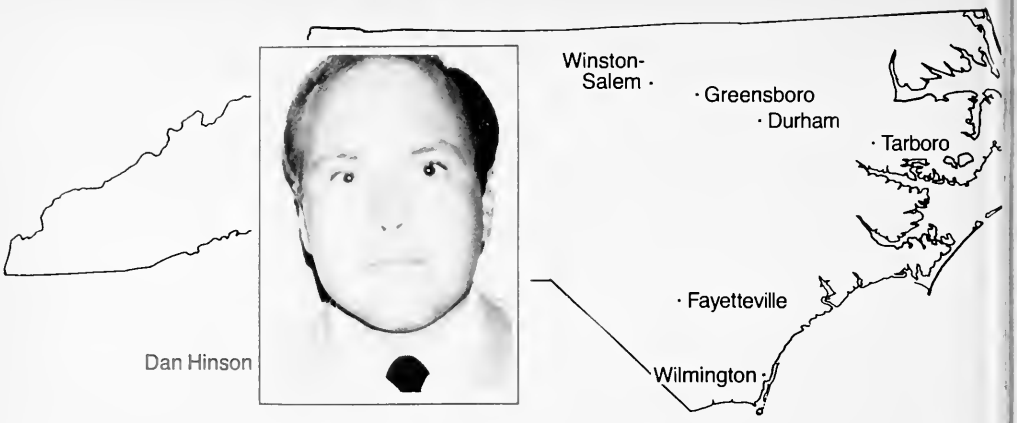

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DO MAIL ORDER PLANS REALLY SAVE MONEY?

This question has been on the cutting edge of our controversy over mail order, from the beginning. Now there is a definite study carried out by a reputable organization which establishes that *mail order Rx costs are 5% higher than conventional drug plans!*

The study titled "Actuarial Study of Mail Order Drug Option Experience" was conducted by Sieben and Associates on behalf of McKesson's P.C.S. subsidiary. It did show that while unit cost savings in mail order fills are significant, they are more than eliminated by the increased volume dispensed. In discrete numbers, the 4% mail order savings in unit costs were wiped out by the 9% higher utilization, resulting in a mail order increased cost of 5% over non-mail order group plans.

What was the cause or the problem? Well, we're sure that in your mind you already knew the answer before they conducted the experiment. Wastage occurs. It occurs because part, sometimes much, of many prescriptions goes unused or medications are changed before being finished and the leftovers are discarded (or used by others who shouldn't consume them). Also, prescriptions are lost and not renewed, or individuals simply stop taking their medication while many doses remain in the container.

The elderly represented the age group for which mail order was least cost effective. This was because the group did take a higher percent of maintenance medications and there was a greater increase in utilization than for other groups. Subsequent study also showed this age group also experienced a great deal of prescription switching due to the large amount of side effects encountered by the large number of elderly people taking multiple prescriptions.

Some additional conclusions you can pass on to your legislators are:

1. The more mail order was used, the higher was additional cost of the plan due to increased volumes of prescriptions dispensed.
2. The mail order plans studied included both 90 and 180 day dispensing limitations. The 180 day maximums cost more than the 90 day plans, while the latter cost more than non-mail order plans.
3. Drastic reductions in mail order ingredient costs would not compensate for the increased volumes dispensed.

Drugs Are Pittance of U.S. Health Bill

Pharmaceuticals and related items accounted for only 6.7 percent of the nation's health-care bill in 1985, according to figures compiled by the Health Care Financing Administration.

HCFA statistics show that $28.5 billion of the nation's $425 billion medical bill went for prescription drugs, over-the-counter drugs and other medical sundries purchased by consumers, insurance plans and government programs.

In recent years, drugs and sundries have accounted for less and less of the health-care dollar. In 1960, they represented 13.7 percent of total costs, while by 1980, they had dropped to just 7.5 percent.

In 1985, consumers spent $21.7 billion on drugs and related items, 77 percent of the total. Insurance companies spent $4 billion, or 14 percent, while the government paid for the remainder, $2.7 billion, or around 10 percent.

While about one-third of the nation's total medical bill was channeled through private insurance plans last year, consumers paid 28 percent of the total health-care bill, down from 29 percent in 1984.

The HCFA figures also indicate — to no one's surprise — that federal spending for health care is growing. Washington used 12.6 percent of its entire budget for medical care last year. HCFA, which administers the Medicare and Medicaid programs, accounted for 22 percent of all spending for health care in the United States.

NARD LAUNCHES RX EXPO '87

— Expanding on four consecutive years of successful NARD Home Health Care Conferences, the National Association of Retail Druggists has announced that an exciting new mid-year meeting — RxExpo — will be held April 29–May 2, 1987 in New Orleans.

In addition to the in-depth programming on home health care that has made NARD's Home Health Care Conferences such huge successes in years past, Rx Expo will offer attendees seminars and workshops on a wide variety of disciplines covering both the business and professional practice of pharmacy.

Participants will be able to register for educational tracks covering home health care and long-term care, financial management, clinical pharmacy, multiple locations pharmacy ownership, and professional pharmacy management. NARD's Geriatric Certificate Program, unveiled at NARD's 1986 annual meeting in Louisville, will be offered again during Rx Expo. In addition, NARD has selected Rx Expo to introduce an all-new program that offers pharmacists a certificate in counseling ostomy and incontinence patients. Rx Expo will also serve as the site of NARD's 1987 PSAO Conference, following up on the association's much talked about First Annual PSAO Conference held last May.

NARD's home health care trade exposition will also be a part of Rx Expo '87, but this year the exposition will be greatly expanded to also include nonprescription drugs, health and beauty aids, and general merchandise. NARD expects a strong turnout of independent retail pharmacists for Rx Expo's expanded program offerings — all held in beautiful New Orleans — which means this will be an important marketing opportunity for exhibitors of home health care products, OTC drugs, sundries, and the wide variety of other products sold in independent pharmacies.

Promotion to exhibitors has already begun, and registration information will be distributed to the nation's independent retail pharmacists during December as part of an aggressive promotional campaign for Rx Expo '87.

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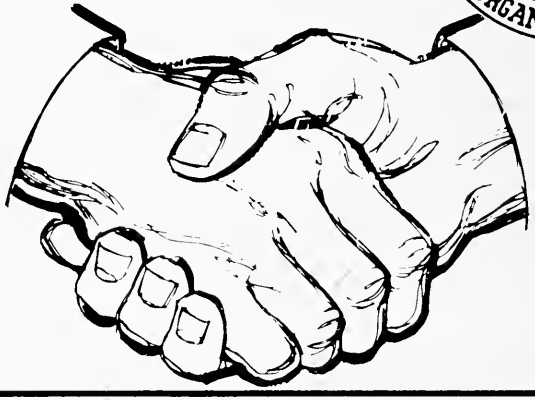

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CORRESPONDENCE COURSE

ADVISING CONSUMERS ON OTC EYE PREPARATIONS PART III: CONTACT LENSES

by J. Richard Wuest, R.Ph., Pharm.D.
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University of Cincinnati, Cincinnati, OH
and
Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University, Ada, OH

Goals

The goals of this lesson are to:

1. discuss ocular problems that can be corrected by wearing contact lenses;
2. compare contacts and spectacles, and hard and soft contact lenses.

Objectives

At the completion of this lesson, the successful participant will be able to:

1. list the advantages and disadvantages of hard and soft contact lenses;
2. counsel the consumer on proper contact lens wear and care.

This is the third lesson in a series of articles on OTC eye care products. In the first two articles, the function of the eye and the proper use of OTC eye preparations were reviewed. In this lesson, we will discuss the background of contact lens solutions beginning with contact lenses themselves. Contact lens solutions and care products will be described in the following lesson.

The marketplace for contact lenses and solutions has become quite extensive. It is estimated that Americans currently spend in excess of $300,000,000 yearly on contact lenses and their care, half of which is spent on contact lens solutions. This figure is up over 50 percent from 1979. However, it is also reported that less than 60 percent of the total contact lens solution market is based on pharmacy sales. Since more than half of the approximately 15,000,000 contact lens wearers have soft lenses, and they spend $75.00 a year on the average for their solutions, the implications of providing a full line of products and counseling becomes quite evident.

Historical Background

Because there are major differences between the types of materials used in the manufacture of contact lenses and the types of solutions needed to care for each, we will first review the lenses themselves.

Even though the increased use of contact lenses is a recent phenomenon (approximately one-half of Americans need some type of eye correction and an increasing percentage of them now wear contacts), the concept is not new. Contact lens technology goes back to Leonardo da Vinci in the early 1500's. He theorized that emerging one's head in a large glass bowl of water could correct impaired vision. It is interesting to note that hundreds of years before the retina and its function were discovered, Leonardo drew pictures of errors in accommodation. It was his theory that people could not see clearly because

Continued on page 25

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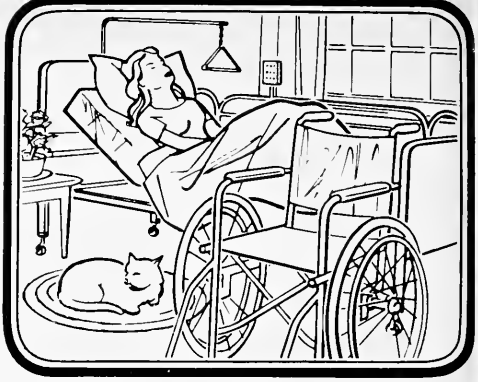

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CORRESPONDENCE COURSE

Continued from page 24

the image of the objects they were looking at fell somewhere in front of or behind the eye. His idea never caught on possibly because while one can see better with one's head in a bowl of water, it makes for difficult breathing.

In the mid-1600's, a German physician reportedly used a lens to correct a refractory error by having his patients hold a tube full of water in front of their eyes. Glass spectacles followed soon after, but it wasn't until 1823 that someone suggested taking a mold of the cornea and placing a glass lens over it to correct vision.

In the late 1800's, an artificial eye maker manufactured the first glass scleral contact lens. From then until the 1930's, the few contact lenses made were produced by this long and tedious method of fitting lens after lens until the correct one was found. They were so heavy that very few people could tolerate them, especially since the tear fluids could erode them in about six months.

When plastics became available in the 1930's, the door for contact lens technology opened. It was an important breakthrough since a chemically stable, unbreakable, transparent and easy to work with lens was possible.

During World War II, an RAF surgeon noticed that pilots with pieces of shot-out plastic aircraft windows embedded in their eyes did not exhibit a foreign particle rejection antibody/antigen reaction. He and his associates were the first to develop the external hard contact lens as well as the artificial lens implant made of plastic.

More recently, soft plastic lenses, gas-permeable hard lenses, and extended-wear soft lenses have been developed. Each will be discussed in turn.

Sales of soft lenses now dominate the marketplace. It is reported that in 1982, soft lenses represented 71% of new fittings for contact lenses, and the percentage is still increasing.

Contact Lenses vs. Spectacles

The answer to the question of which is better is largely a matter of personal opinion.

Most people who wear contact lenses agree that they have better and more natural vision than they do with spectacles. One distinct advantage of contacts is that however you move your eyes, you are still looking through the center of the lens. This does not occur with spectacles because light is coming through the cornea and the lens from all the different angles covered by the spectacle. Therefore, there is less image distortion with contacts.

Some prefer contact lenses because there are no frames to block peripheral vision, pinch the nose, head or ears, slide down a sweaty nose in warm weather, and fog up when there are changes in relative humidity. A major reason people prefer contacts over spectacles is that contacts are not visible to others.

However, not everyone can wear contacts. It is reported that there is a 15% rejection rate with hard lenses, but a much lower rate for the soft lenses.

Some individuals experience burning and redness due to the normal response of the eye to a foreign object. Others experience problems with excessive blinking which is a normal function of the eye trying to take care of itself by removing a foreign object. Others have problems with excessive tearing which washes the lenses out. Still others experience problems with the lenses falling out although this is more common with hard lenses than with the soft variety.

Some people are bothered by the glare of fluorescent lights and others develop photophobia. This is reported mainly with hard lenses. It may be corrected with the use of tinted lenses.

Two other potential problems with contacts are forgetting to take them out (one rarely does this more than once because it is quite painful to leave hard lenses in overnight) and lacking confidence in inserting and removing them. Another problem with the hard lenses is spectacle blur. Some individuals have trouble seeing after they take their hard contacts out, and the difficulty is not corrected by the use of their spectacles. This will be explained more fully later.

Contacts are difficult to wear for persons who have hay fever, rose fever or other allergies. Hormonal changes during pregnancy and the use of oral contraceptives alter the fluid balance of the cornea and interfere with the wearing. In some individuals, anticholinergics, antihistamines, tricyclic antidepressants, decongestants, and diuretics decrease tear secretion and interfere with lens wear. This will be discussed later.

One authority claims that brown eyed brunettes with dark complexion are the easiest to fit with contacts, and the best wearers. Green-eyed, fair-skinned redheads are reported to be the hardest to fit and are most likely to discontinue using contacts. There are certainly numerous exceptions to this rule and the majority of people fall between these two groups.

Continued on page 26

CORRESPONDENCE COURSE

Continued from page 25

The overwhelming majority of individuals who wear contacts prefer them over spectacles and would not go back to wearing glasses.

What Ocular Problems Do Contacts Correct?

The four major types of eye refractory errors were discussed in the first lesson of this series. To quickly review, **hyperopia** (farsightedness) is a refractive problem with the crystalline lens resulting from images being focused behind the retina. **Myopia** (nearsightedness) is the direct opposite in that the focal point of vision is in front of the retina. Either of these conditions may be corrected by hard or soft contact lenses.

Astigmatism is a condition in which the cornea does not have a perfectly spherical shape. Therefore, light rays entering through it are distorted. The less spherical the cornea is, the more blurred the vision. Since hard lenses are rigid, they will serve as a new sphere. Hard lenses can be used to correct nearly all degrees of astigmatism.

Soft lenses are flexible and cannot correct all astigmatisms. Until recently, they were rarely effective in correcting this condition. However, newer "toric" lenses are now available. There are two types of corrective curves, one for correcting nearsightedness or farsightedness, and another called a cylinder correction that takes care of the astigmatism. This form must be custom-made and is quite expensive.

Presbyopia (literally, "old vision") is a condition that requires bifocals. As we age, our lenses become stiffer and it becomes more difficult to focus on close-up objects. Presbyopia invariably results in the need for reading glasses. If the person is already nearsighted, bifocals are necessary with the upper portion used to correct distant vision and the lower for close-up vision.

Bifocal hard lenses have been available for some time. They have two major drawbacks. First, their fitting must be customized, a procedure which is long, arduous, and expensive.

The second problem is that the up and down movement of the lens can be troublesome. When the person readjusts to the image, the distance changes and the object goes in and out of focus. However, some individuals wearing bifocal spectacles have the same problem.

The authors have a friends who wears trifocals. One day we asked, "How in the world can you see through those?" He said that he just moves his head up and down and whatever looks best, that's what he pays attention to.

There are two other solutions for correcting presbyopia without others knowing that you need bifocals. One is to wear contacts for far vision and half-glasses for reading.

Another concept that requires a great deal of motivation is based on the fact that bilateral organs have a dominant side. For example, some people are right-handed while others are left-handed. The same is true for vision. With **monovision,** the individual wears a lens on the dominant eye for far vision, and a different lens with a refractory power on the other eye for near vision. In a few weeks, the person learns to look at far away objects with one eye and to read close up with the other lens.

One major problem with monovision is that depth perception is difficult. Those who use this system (including a recent ex-president and renown network news anchorman) have two lenses available for the non-dominant eye. When good depth perception is needed, they remove the near vision lens and replace it with the one for distance.

Soft lenses are also used for correcting several other disorders. These include corneal dystrophy, keratitis (inflammation of the cornea), corneal ulcers, severely dry eyes and post-surgical healing.

Hard Contact Lenses

Hard contact lenses are manufactured from a plastic called polymethylmethacrylate (PMMA). It is a material quite similar to Plexiglas® and Lucite®. Hard lenses retain their shape in or out of the eye, and they take on very little water.

The term "contact" lens is really a misnomer for hard lenses because they do not actually make contact with the eye. Hard lenses and the cornea are hydrophobic so the lens floats on a layer of lacrimal and ocular secretions over the top of the cornea without touching it. A major difference between hard and soft lenses is that the former can be no larger than the cornea. If they were larger, there would be inadequate transfer of fluids between the cornea and the lens, and inadequate oxygen to the cornea.

The cornea is unique in that it is not directly supplied with blood vessels. Therefore, the cornea does not receive oxygen directly from the blood; instead it is nourished by the aqueous humor, various other tear secretions, and to a small extent, from the atmosphere.

Hard lenses block out oxygen that normally enters the cornea osmotically from the air. Therefore, when they are worn, the cornea must rely on tear flow. The eyelid accomplishes this in two ways. First, each time the eyelids close, they press down slightly on the contact and force out the "old tears" that were underneath. When the eyelids open, the contact rises slightly and pumps in "newer" tears.

Second, the lids cause the contact to rotate, reportedly one full rotation every six to ten blinks. This "whirlpool" action brings in more tears. Individuals who wear contacts must blink at least five times a minute to provide adequate oxygen and to lubricate the eye.

In summary, the hard lens is a tough, acrylic disc, smaller than the cornea, that is hydrophobic (water-repellant). Soft lenses are flexible discs that are larger than the cornea and are hydrophilic (water-seeking).

Soft Contact Lenses

There are several kinds of soft contact lenses made from a variety of chemicals. One of the more commonly used plastics is hydroxyethyl-methacrylate (HEMA).

Soft lenses are flexible, absorb water, and conform to the shape of the eye. Many of them have a water content exceeding 50 percent. Earlier, we related the hard lenses to Plexiglas™ and Lucite™. Soft lenses are more like Saran Wrap™ or Handiwrap™.

Soft lenses adhere directly to the cornea through hydrophilic capillary attraction. They must be larger than the cornea and fit slightly underneath each eyelid. If they were smaller than the cornea, the lenses could fall out with one blink.

Soft lenses are manufactured in a manner similar to hard lenses. They are lathe cut from polymer buttons, molded into a spherical shape, and hydrated in hot saline solution for several days. In this procedure, they swell to the proper size and impurities are extracted. To maintain

Continued on page 28

CORRESPONDENCE COURSE

Continued from page 27

their shape, soft lenses must always be kept in an isotonic solution, both before and after fitting.

Another major difference between hard lenses and soft lenses is that the former must be form-fitted to each individual's corneal shape. This may require several days. Although soft lenses differ in their refractory power, "a few sizes fit all." Once the refractory power is determined, soft lenses can be selected off the shelf and fitted into the eye immediately.

As stated earlier, soft lenses must be hydrated at all times and stored in an isotonic solution. If the solution is hypotonic, the lens will swell. If it is hypertonic, the lens will shrink. In either instance, they will be less comfortable on the eye. The pH is a factor for some lenses because certain plastic polymers will shrink if the pH is below 6 and swell if it is above 6.

Because they contain many hydroxyl, carboxyl and lactam groups, all of which are chemically reactive, soft lenses can be ruined by absorbing chemicals. Therefore, it is unwise to self-medicate with eye drops not specifically labeled for use with soft contact lenses. In many instances, both the preservatives and the active ingredients will bind with the soft plastic material. This is especially true of epinephrine and phenylephrine which can actually turn the lenses brown.

The irrigation and soaking solutions for soft lenses contain a low concentration of preservatives. If they are soaked in the more concentrated solutions used for hard lenses, soft lenses can take up the preservative and release it into the eye leading to irritation.

The water in soft lenses can evaporate if the lenses are left out of solution for any length of time. If they become dry, they can be ruined. Rehydrating a dry lens is difficult, and the individual must closely follow the manufacturer's instructions.

The water content in soft lenses can also evaporate in excessively low relative humidity, when there is inadequate tear production, under the hair dryer, in high winds, or in dry climates. When the lenses begin to dry, they shrink and tighten on the cornea, thereby irritating the eye and causing blurred vision.

Hard Lenses vs. Soft Lenses

There are pros and cons for both hard and soft lenses. They are compared in Table 1.

Those who prefer hard contact lenses claim that they are less expensive, more durable, easier to get in and out, and easier to take care of. In most instances, soft lenses are more expensive than the hard ones. The average life of a soft lens is one and one-half to two years (they tear easily), whereas hard lenses may last twenty to thirty years. The daily care of soft lenses is more time consuming, and the solutions more expensive than those for the hard variety.

Proponents for soft lenses counter these claims by stating that the softs are easier to fit, are more comfortable, and allow for better peripheral vision. They can also be worn "on and off" and do not cause spectacle blur.

TABLE 1
Differentiation of Hard and Soft Contact Lenses

Hard	Soft
Composition	
tough, acrylic disc	flexible disc
smaller than cornea	larger than cornea
hydrophobic	hydrophilic
Indications	
astigmatism	aphakia
color blindness	astigmatism
farsightedness	eye bandage
nearsightedness	farsightedness
	nearsightedness
Advantages	
easier to get in and out	easier to get used to
easier to take care of	more comfortable
more durable	can wear "off and on"
tintable	no spectacle blur
less expensive	better peripheral vision
	easier to fit
Disadvantages	
take longer to break in	takes longer to care for
pop out more easily	more expensive
don't always follow eye movement	cannot be marked right or left
become scratched and warped	absorb chemicals
Solutions	
wetting	cleaning
cleaning	disinfecting
soaking	chemical
lubricating	thermal
combinations	lubricant

Wearing soft lenses "on and off" means that the wearer does not have to readjust if they aren't

worn for awhile. This is not true for hard lenses. After being properly fitted, a hard contact lens wearer must gradually increase wearing time over a period of days until he can tolerate them for ten to twelve hours per day. Generally they can be worn four hours the first day, and wearing time can be increased an hour a day thereafter.

Hard lenses cannot be worn overnight as stated earlier. Even though well-fitted hard lenses serve as a pump for tears and each blink of the eyelid brings in new tear fluid that is rich in oxygen, they cannot accomplish this indefinitely. After several hours, the amount of available oxygen for the corneal cells is diminished somewhat and the cells begin to swell. This leads to corneal edema which makes the contact uncomfortable. Highly motivated individuals can manage this. Others cannot.

A bothersome effect for some hard lens wearers is **spectacle blur.** This is a blurred, hazy vision due to swollen cells in the cornea after a number of hours of lens wear. In some individuals, it takes awhile (sometimes overnight) for eyesight to return to normal. For these individuals, the wearing of regular spectacles does not correct the problem. If hard lenses are worn throughout the day, it is difficult to watch television with spectacles.

Even though hard lenses pop out more readily than soft lenses, they are easier to find, clean, and replace into the eye. Hard lenses can be marked "right" or "left," whereas soft lenses cannot be so designated. The hard lens for the right eye has a small black dot that does not interfere with vision. If soft lenses get mixed up, it is difficult to determine which is for the right eye and which is for the left.

Gas-permeable and Extended-wear Lenses

An indepth discussion of these lenses is beyond the scope of this article. Basically they differ from hard and soft lenses in that they can be worn longer.

The **gas-permeable** lenses are similar to hard lenses since they are about the same size, but they are more flexible. Their major advantage is that they allow the transfer of oxygen freely from either side of the lens to the other. They are composed of a plastic called cellulose acetate butyrate (CAB), or a combination of PMMA and silicone.

Gas-permeable lenses are just as durable as hard lenses, but more wetable. They are especially suited for those who cannot tolerate the standard hard lenses but have a vision problem that is not corrected by soft lenses.

The **extended-wear** lenses represent a more recent development. They are made of varying copolymers of HEMA and other hydrophilic plastics. Most of them consist of a three-dimensional network of copolymer chains joined together by cross-links of chemical bonds. They find extensive use in persons who have had cataracts removed.

Cataracts are more than simply a film that forms over the eye. The crystalline lens is normally transparent. But with age, illness or injury, the lens develops areas of opacity due to precipitation of foreign materials within the lens. This leads to a cloudiness in vision because it blocks light from reaching the retina.

Cataracts can be removed surgically to restore eyesight. The term aphakia refers to the absence of the lens of the eye. If enough is removed, however, it becomes extremely difficult to see close-up. There are three procedures to correct vision after cataract removal: wearing thick, heavy, uncomfortable glasses, having an artificial lens implanted, and wearing contact lenses.

While there is some controversy on the subject, the artificial lens implant, barring complications, is often best because it allows full correction of vision when used with regular glasses. In this procedure, the natural lens is replaced with a plastic implant. It is much more convenient to care for than contacts. Critics say the procedure is too risky and if the lens is defective or becomes contaminated, the patient must return to surgery. However, the FDA Advisory Panel on Ophthalmologicals has stated that the benefits of the artificial lens implant exceed the risks.

The third method for restoring eyesight after lens removal is wearing extended-wear contacts. It is claimed that they provide vision equal to an artificial lens. If anything goes wrong, the contact lenses can be removed. The biggest disadvantage is that the patient's close-up vision may be so bad that he cannot see well enough to insert or remove the contact lenses.

Elderly people have even more problems with contact lenses due to loss of manual dexterity. Extended-wear soft lenses are beneficial because they only need to be removed and cleaned every two weeks or even less frequently. A list of "do's

Continued on page 30

CORRESPONDENCE COURSE

Continued from page 29

and don'ts" for the care and wear of various types of contact lenses is presented in Table 2.

TABLE 2
Do's and Don'ts for Contact Lens Care and Wear

I. Do's
- Wash and rinse hands thoroughly before handling lenses.
- Follow recommended procedures for lens hygiene daily.
- Adhere to your practitioner's instructions and wearing schedules.
- Avoid harmful and irritating vapors and fumes.
- Use extreme care when inserting or removing lenses to avoid scratching the eye with the lens or fingernail.
- Always work with one lens first to avoid mix-up.
- Keep lenses and storage case clean at all times.
- Wear quality nonprescription sunglasses outdoors.
- Contact your eye specialist immediately if you have difficulty.
- Tell your other doctors that you wear contact lenses.
- Have eyes and lenses checked periodically.
- Tell your doctor before using medications in the eye.

II. Don'ts
- Scrape lenses over any hard or rough surfaces.
- Allow soft lenses to dry out.
- Expose lenses to extreme heat.
- Swim with lenses in.
- Rub lenses with cloth, tissues, cotton, or paper lens cleaners.
- Try to pick up lenses with tweezers or any other utensil.
- Clean lenses with household detergents, chemicals or cleaning fluids.
- Use saliva to wet lenses.
- Lean over an open sink while inserting or removing lenses.
- Sleep with contact lenses on the eyes.
- Rub eyes or eyelids while wearing contact lenses.
- Use aerosol products such as hair sprays when wearing lenses.

III. If You Notice These:
- eyes sting, burn or itch (irritation)
- comfort is less than when lens was first placed on your eye
- feeling of something in the eye (foreign body, scratched area)
- excessive watering (tearing) of the eyes
- unusual eye secretions
- redness of the eyes
- reduced sharpness of vision (poor visual acuity)
- blurred vision, rainbows, or halos around objects
- sensitivity to light (photophobia)
- dry eyes

Do This:
- Remove your lenses.
- If the discomfort or problem stops, then look closely at the lens.
- If the lens is damaged, DO NOT put the lens back on your eye. Place the lens in the storage case and contact your eye care practitioner.
- If the lens has dirt, an eyelash, or other foreign body on it, or the problem stops and the lens appears undamaged, thoroughly clean, rinse, and disinfect the lens; then reinsert it.
- If the problem continues, DO NOT put the lens back on your eye but IMMEDIATELY consult your eye care practitioner.

DICKINSON'S PHARMACY

by Jim Dickinson

Winning against mail-order. It can be done. In Alabama, pharmacists have wrested a B.F. Goodrich employee benefits prescription contract away from a mail-order operation.

To do it, they used a small, wholesaler-operated local pharmacy service administrative organization (PSAO) that includes chain drug stores — Walker Drug's United Pharmacy Services, Inc.

It was a winning tactic, because something else was going for them as well: beneficiary dissatisfaction.

Benefits managers and third-party programs are slowly confronting this powerful new ingredient all across the country. Sometimes labeled "quality of care," it's being recognized as the ultimate cost-containment device, and handled correctly by pharmacy, it could be the retail profession's biggest healer.

By combining beneficiary dissatisfaction with a positive, patient-oriented determination, and focusing on programs that have adopted the mail-order option, the Alabama experience shows that retail pharmacies can win that lost business back when the contract comes up for renewal.

Indeed, in a perverse kind of way, if we can all hang in there long enough, mail-order options may be doing retail pharmacy a big favor — they're providing the long-suffering public with an uncomfortable "bench mark" against which regular pharmacy service and convenience can be measured with a sigh of relief!

It's a human frailty that we don't appreciate what we've got until it's gone.

At the same time, that frailty is providing lessons for the health bureaucracy, both private and public.

This past December, federal Health Care Financing (Medicare/Medicaid) Administrator William L. Roper, M.D., informed the annual Food & Drug Law Institute education conference of a radical new strategy he's adopted for Medicare: Quality of care!

As noted in this column previously, private-sector studies have been predicting that health managers would come to realize that quality of care is the optimum form of cost-containment.

Now Dr. Roper tells Washington health-drug lawyers at their annual meeting that he wants "to further improve the quality of care under the Medicare and Medicaid programs" by developing a better measure of quality, a measurable outcome. HCFA, he said, now wants to know: Does the patient get better over time?

What stronger indicator could you want that the cost-containment juggernaut is evolving to a new, intelligent level of sophistication — a level that cannot be attained by mail-order prescriptions?

Being careful not to alarm and alienate the old folk who feel they get good service from AARP pharmacies, the time is now ripe for pharmacy to pound away with its favorite message in the employee benefit arena, cautioning against out-of-state, anti-quality, bargain-basement prescriptions for employees.

The distinction is tactically valid if you're prepared to separate chronic maintenance therapy for house-bound old people from all other pharmaceutical care.

Ask your local employers if they really want their employee benefits package to take money and jobs out of your community and state.

Ask them what happens if their employee forgets to get the prescription refilled just before a holiday or weekend, or when they're going out of town on business?

Ask what happens if the mail-order pharmacy makes a mistake, and accidentally sends the wrong prescription, or if the postal service delays or loses the package?

Ask what happens if the employee develops an unexpected sensitivity to the drug, and has to be quickly switched to something else?

Ask how much absenteeism they can afford when illnesses result from erroneous treatments that local pharmacists can't help prevent or correct.

The time has never been better to ask such questions — and to keep on asking them.

This feature is presented on a grant from G.D. Searle & Co. in the interests of promoting the open discussion of professional issues in pharmacy. G.D. Searle & Co., accepts no responsibility for the views expressed herein as they are those of the author and not necessarily those of G.D. Searle & Co.

Jim Dickinson is President of ***Ferdic, Inc.*** *a West Virginia service corporation he owns with his wife. Formerly associated with* ***Drug Topics*** *magazine, he is widely read worldwide in health related publications. Dickinson worked as special consultant to NARD, was managing editor of the weekly* ***Green Sheet*** *and senior editor of the weekly* ***Pink Sheet,*** *and has been associated with the American Pharmaceutical Association.*

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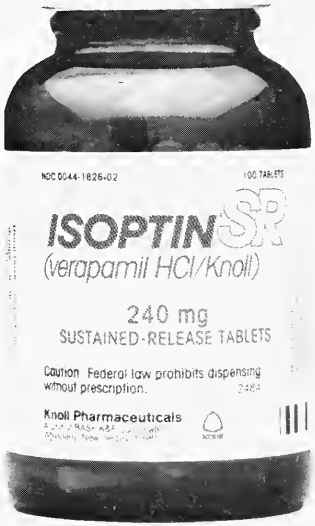

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WARNINGS: Heart Failure: ISOPTIN should be avoided in patients with severe left ventricular dysfunction (see DRUG INTERACTIONS). Patients with milder ventricular dysfunction should, if possible, be controlled before verapamil treatment. Hypotension: ISOPTIN (verapamil HCl) may produce occasional symptomatic hypotension. Elevated Liver Enzymes: Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Periodic monitoring of liver function in patients receiving verapamil is therefore prudent. Accessory Bypass Tract (Wolff-Parkinson-White): Patients with paroxysmal and/or chronic atrial flutter or atrial fibrillation and a coexisting accessory AV pathway have developed increased antegrade conduction across the accessory pathway producing a very rapid ventricular response or ventricular fibrillation after receiving intravenous verapamil. While this has not been reported with oral verapamil, it should be considered a potential risk. Treatment is usually D.C.-cardioversion. Atrioventricular Block: The effect of verapamil on AV conduction and the SA node may cause asymptomatic 1st degree AV block and transient bradycardia. Higher degrees of AV block, while infrequent (0.8%), may require a reduction in dosage or, in rare instances, discontinuation of verapamil HCl. Patients with Hypertrophic Cardiomyopathy (IHSS): Although verapamil has been used in the therapy of patients with IHSS, severe cardiovascular decompensation and death have been noted in this patient population.

PRECAUTIONS: Impaired Hepatic or Renal Function: Verapamil is highly metabolized by the liver with about 70% of an administered dose excreted in the urine. In patients with impaired hepatic or renal function verapamil should be administered cautiously and the patients monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacological effects (see OVERDOSAGE).

Drug Interactions: Beta Blockers: Concomitant use of ISOPTIN and oral beta-adrenergic blocking agents may be beneficial in certain patients with chronic stable angina or hypertension, but available information is not sufficient to predict with confidence the effects of concurrent treatment in patients with left ventricular dysfunction or cardiac conduction abnormalities. Digitalis: Clinical use of verapamil in digitalized patients has shown the combination to be well tolerated if digoxin doses are properly adjusted. However, chronic verapamil treatment increases serum digoxin levels by 50 to 75% during the first week of therapy and this can result in digitalis toxicity. Upon discontinuation of ISOPTIN (verapamil HCl), the patient should be reassessed to avoid underdigitalization. Antihypertensive Agents: Verapamil administered concomitantly with oral antihypertensive agents (e.g., vasodilators, angiotensin-converting enzyme inhibitors, diuretics, beta blockers, prazosin) will usually have an additive effect on lowering blood pressure. Patients receiving these combinations should be appropriately monitored. Disopyramide: Disopyramide should not be administered within 48 hours before or 24 hours after verapamil administration. Quinidine: In patients with hypertrophic cardiomyopathy (IHSS), concomitant use of verapamil and quinidine resulted in significant hypotension. There has been a report of increased quinidine levels during verapamil therapy. Nitrates: The pharmacologic profile of verapamil and nitrates as well as clinical experience suggest beneficial interactions. Cimetidine: Two clinical trials have shown a lack of significant verapamil interaction with cimetidine. A third study showed cimetidine reduced verapamil clearance and increased elimination to 1/2. Anesthetic Agents: Verapamil may potentiate the activity of neuromuscular blocking agents and inhalation anesthetics. Carbamazepine: Verapamil may increase carbamazepine concentrations during combined therapy. Rifampin: Therapy with rifampin may markedly reduce oral verapamil bioavailability. Lithium: Verapamil may lower lithium levels in patient on chronic oral lithium therapy. Carcinogenesis, Mutagenesis, Impairment of Fertility: There was no evidence of a carcinogenic potential of verapamil administered to rats for two years. Verapamil was not mutagenic in the Ames test. Studies in female rats did not show impaired fertility. Effects on male fertility have not been determined. Pregnancy (Category C): There are no adequate and well-controlled studies in pregnant women. ISOPTIN crosses the placental barrier and can be detected in umbilical vein blood at delivery. This drug should be used during pregnancy, labor, and delivery, only if clearly needed. Nursing Mothers: ISOPTIN is excreted in human milk, therefore, nursing should be discontinued while verapamil is administered. Pediatric Use: Safety and efficacy of ISOPTIN in children below the age of 18 years have not been established.

ADVERSE REACTIONS: Constipation 8.4%, dizziness 3.5%, nausea 2.7%, hypotension 2.5%, edema 2.1%, headache 1.9%, CHF/pulmonary edema 1.8%, fatigue 1.7%, bradycardia 1.4%, 3° AV block 0.8%, flushing 0.1%, elevated liver enzymes (see WARNINGS). The following reactions, reported in less than 1.0% of patients, occurred under conditions (open trials, marketing experience) where a causal relationship is uncertain; they are mentioned to alert the physician to a possible relationship: angina pectoris, arthralgia and rash, AV block, blurred vision, cerebrovascular accident, chest pain, claudication, confusion, diarrhea, dry mouth, dyspnea, ecchymosis or bruising, equilibrium disorders, exanthema, gastrointestinal distress, gingival hyperplasia, gynecomastia, hair loss, hyperkeratosis, impotence, increased urination, insomnia, macules, muscle cramps, myocardial infarction, palpitations, paresthesia, psychotic symptoms, purpura (vasculitis), shakiness, somnolence, spotty menstruation, sweating, syncope, urticaria. Treatment of Acute Cardiovascular Adverse Reactions: Whenever severe hypotension or complete AV block occur following oral administration of verapamil, the appropriate emergency measures should be applied immediately, e.g., intravenously administered isoproterenol HCl, levarterenol bitartrate, atropine (all in the usual doses), or calcium gluconate (10% solution). If further support is necessary, inotropic agents (dopamine or dobutamine) may be administered. Actual treatment and dosage should depend on the severity and the clinical situation and the judgment and experience of the treating physician.

OVERDOSAGE: Treatment of overdosage should be supportive. Beta-adrenergic stimulation or parenteral administration of calcium solutions may increase calcium ion flux across the slow channel, and have been used effectively in treatment of deliberate overdosage with verapamil. Clinically significant hypotensive reactions or fixed high degree AV block should be treated with vasopressor agents or cardiac pacing, respectively. Asystole should be handled by the usual measures including cardiopulmonary resuscitation.

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Continued from page 21

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ECKEL ELECTED TO BOARD OF CHRISTIAN PHARMACISTS FELLOWSHIP INTERNATIONAL

Frederick M. Eckel, Associate Director of Pharmacy Services at North Carolina Memorial Hospital and Professor of Hospital Pharmacy at the University of North Carolina at Chapel Hill, N.C. has been elected to a three-year term on the Board of Directors of the Christian Pharmacists Fellowship International. Mr. Eckel's term began January 1, 1987. The Board of Directors of the Fellowship is made up of ten pharmacists from various practice and academic settings throughout the United States.

Mr. Eckel is a native of Philadelphia, Pa. and a 1961 B.S. graduate from the Philadelphia College of Pharmacy and Science. He received his M.S. in Hospital Pharmacy at Ohio State University in 1963. After serving as Assistant Director of Hospital Pharmacy at the Ohio State University Hospitals and as Instructor in the College of Pharmacy, in 1966 he became Assistant Director of Pharmacy services at North Carolina Memorial Hospital in Chapel Hill and Instructor in Hospital Pharmacy. From 1968 to 1975, he was Director of Pharmacy Services and Director of Clinical Pharmacy Services from 1975 to 1978.

He has been recipient of many awards and honors including the Harvey A.K. Whitney Award in 1985. He has served as President of numerous organizations, including the Central Ohio Society of Hospital Pharmacists, the Southeastern Society of Hospital Pharmacist, the North Carolina Society of Hospital Pharmacists and the American Society of Hospital Pharmacists.

Continued on next page

CORRESPONDENCE COURSE QUIZ

Contact Lenses

1. The condition that is caused by the lenses of the eye becoming stiffer and less able to focus on close-up objects is called:
   a. astigmatism.
   b. hyperopia.
   c. myopia.
   d. presbyopia.
2. Which type of contact lens has the highest reported rejection rate (i.e., inability of an individual to wear them)?
   a. Hard Lens.
   b. Soft Lens.
3. Which of the following is a true statement about hard contact lenses?
   a. They are hydrophillic and adhere to the cornea by capillary attraction.
   b. They must be larger than the cornea to prevent falling out when the eyelids blink.
   c. They retain their shape in or out of the eye.
   d. They allow the transport of oxygen from the atmosphere to the cornea.
4. Which type of lens has the greater number of chemical reactive components and, therefore, is more likely to absorb the ingredients of eye medications?
   a. Hard lens
   b. Soft lens
5. As compared to spectacles, contact lenses reportedly:
   a. can prevent refractory problems from getting worse.
   b. correct a greater spectrum of vision disorders.
   c. have less tendency to cause "tired eyes."
   d. cause less image distortion.
6. Which type of contact lens must be fitted to each individual's corneal shape?
   a. Hard lens
   b. Soft lens
7. Cataracts are caused by:
   a. an opaque film that forms over the cornea.
   b. an opaque film that forms over the crystalline lens.
   c. precipitation of foreign materials inside the cornea.
   d. precipitation of foreign materials inside the crystalline lens.
8. Persons with monovision wear contact lenses with two different refractory powers to correct:
   a. astigmatism.
   b. hyperopia.
   c. myopia.
   d. presbyopia.
9. Which type of contact lens causes the greatest degree of spectacle blur?
   a. Hard lens
   b. Soft lens
10. When comparing hard and soft contact lenses, which of the following is a true statement?
    a. Hard lenses require more care than soft lenses.
    b. Soft lenses correct more types of astigmatism than hard lenses.
    c. Hard lenses are larger in diameter than soft lenses.
    d. Soft lenses are more hydrophilic than hard lenses.

ECKEL

Continued from page 34

His memberships include the American Association for the Advancement of Science, American Association of Colleges of Pharmacy, the American College of Apothecaries, the American Institute of the History of Pharmacy, the American Management Association, the American Society of Consultant Pharmacists, the American Society of Hospital Pharmacists, the Canadian Society of Hospital Pharmacists, Rho Chi Society, Sigma Xi and the North Carolina Pharmaceutical Association.

The Christian Pharmacists Fellowship International is a non profit trans denominational Christian organization made up of pharmacists with members in ten nations throughout the world. Incorporated in 1984, it seeks to promote, further and maintain fellowship among pharmacists who believe the gospel of the Grace of God, as taught by the Lord Jesus Christ and recorded in the Bible. It is the only interdenominational organization of its kind in operation in pharmacy at this time. A Newsletter is published quarterly. Mr. Robert J. Recobs of Plainfield, N.J. and Dr. Warren E. Weaver of Richmond, Va. is Executive Director. For more information write CPFI at letterhead address or call 804-285-0544.

PHARMACY POLICY RESEARCH LABORATORY ESTABLISHED

A Pharmacy Policy Research Laboratory has been established at the School of Pharmacy, University of North Carolina, Chapel Hill. The lab, created jointly by the Pharmacy Foundation of North Carolina, Inc. and the School, began operation in December, 1986 with Jane Osterhaus as director.

The overall focus is to generate an awareness of the available information and demonstrate its usefulness in assessing the impact of economic, social and demographic factors on drug distribution within the health care environment.

Some of the functions of the laboratory include organizing data bases of specific interest for those involved with the production and distribution of pharmaceuticals and pharmacy services; collecting, maintaining and evaluating secondary data bases; and providing critical information needed for effective, efficient, short and long range planning and forecasting.

Economic, social and administrative research addressing drug distribution policy issues will also be conducted by the Laboratory.

Individuals and organizations may contract with the Laboratory to conduct unique studies.

The Laboratory is expected to provide a useful service for planners and decision makers of pharmacy associations, colleges and pharmaceutical manufacturers, said Osterhaus.

Under the guidance of a Board of Directors and Users Advisory Board, the Laboratory will publish an annual report, summarizing and interpreting the statistics presented in the Laboratory's multiple data bases. Symposia or seminars will be produced at regular intervals. The projects undertaken by the Laboratory will combine scholarly research techniques with clear analyses to address the practical needs of business and professional organizations.

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BIRTHS

CHARLES R. FENSKE and NANCY COLTRAIN FENSKE of Louisburg, NC, both 1976 graduates of the UNC School of Pharmacy at Chapel Hill, announce the birth of their daughter, Sarah Melissa, on December 1, 1986. Sarah weighed 9 lbs. 9 oz. and has an older brother, Lucas, who is 5.

Charles is pharmacist-manager of Revco Drugs in Louisburg.

SUZANNE and ROBERT BIZZELL, Kinston are happy to announce the birth of their daughter Margaret Reams on December 29, 1986. Margaret weighed 7 pounds 15 ounces. She has an older sister Beth.

MARRIAGES

DANA JOETTE LANGDON and Daniel Lee McClure were married January 31, 1987 at the bride's parent's home in Angier. The bride, a 1985 graduate of the UNC School of Pharmacy, is employed by Revco Drug Stores. The couple will live in Surf City.

DANA JOETTE LANGDON of Jacksonville and Daniel Lee McClure of Surf City were married January 31 at the bride's parents' home in Angier.

The bride, a graduate of the University of North Carolina at Chapel Hill School of Pharmacy, is a pharmacist at Revco.

The bridegroom, who attended Western State College in Gunnison, Colorado, is a construction supervisor with Venture Construction Co. The couple live in Surf City.

DEATHS

William Allen Parks

Mr. William A. Parks, Davidson, died December 1, 1986 at Mercy Hospital, Charlotte. He was 84 years old. He attended Wofford College and was a graduate of the UNC School of Pharmacy and was licensed in 1938. Parks was retired and former owner and pharmacist of Parks Rexall Drugs in Davidson.

Robert Jackman Darden

Robert J. "Jack" Darden, Clinton, died Friday March 7, 1986 at a nursing home in Goldsboro at the age of 74. Darden was a native of Sampson County and operated Darden's Pharmacy in Clinton until he retired. He was registered in 1938 and was a partner in Butler's Pharmacy in Clinton prior to opening Darden's Pharmacy.

Richard Furman Ponder

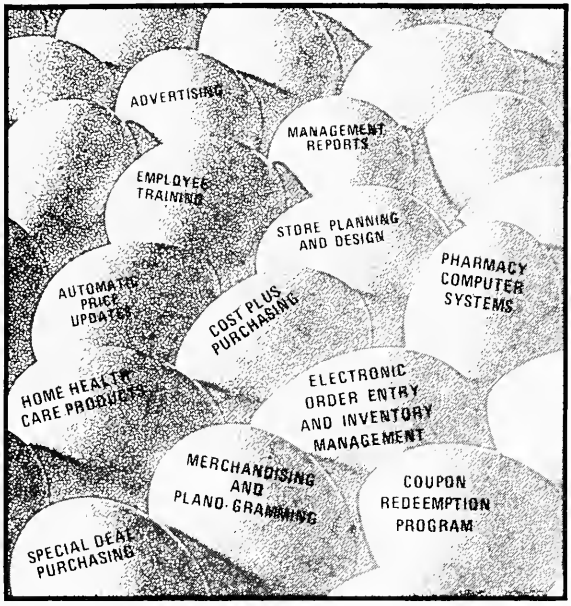
Richard F. Ponder, Mount Holly, died Tuesday, January 13, 1987 at Gaston Memorial Hospital at the age of 64. A native of Greenville, SC, Ponder was a 1955 graduate of the University of South Carolina School of Pharmacy. He was a veteran of World War II and co-owner of Charlie's Drugs and Sundries of Mount Holly.

Wilbur Leon Hickmon

Wilbur L. Hickmon, Wilmington, died Wednesday, February 25, 1987, in New Hanover Hospital. He was 84 years old. He was a 1933 graduate of the UNC School of Pharmacy and retired from Eli Lilly and Company in 1975. Both sons, James R. Hickmon and E. Edward Hickmon are graduates of the UNC School of Pharmacy.

David Foy McGowan, Sr.

David F. McGowan, Chapel Hill, died Saturday, March 7, 1987, after an extended illness, at Hillhaven Convalescent Center. He had retired from Eli Lilly Company in 1979 after 33 years as a manufacturer's representative. A native of Swan Quarter, McGowan attended Weaver College and graduated in 1942 from the UNC School of Pharmacy. He served in World War II as a captain in the Marine Corps.



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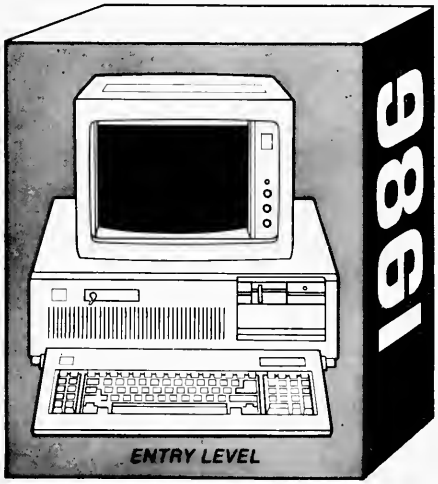

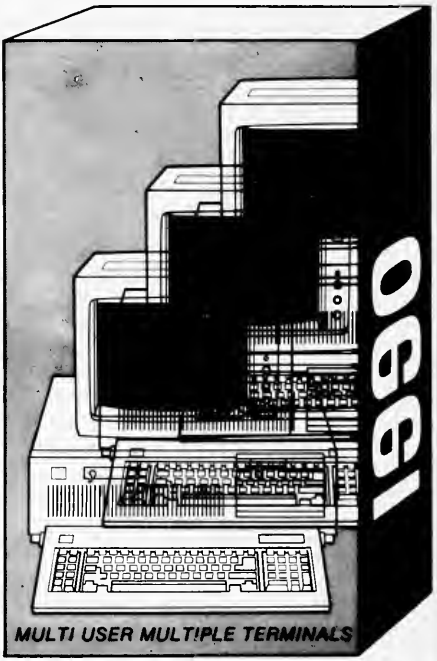

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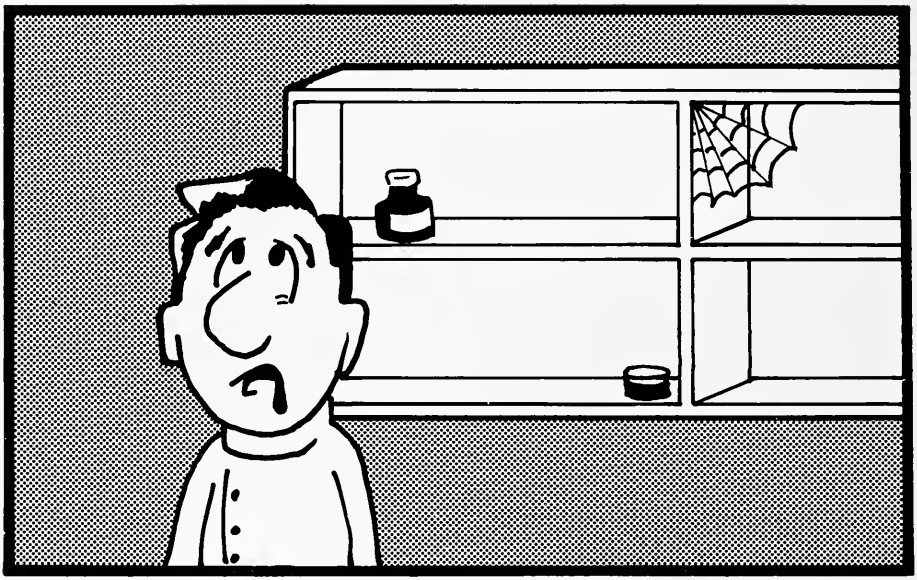
Socio-Economic Seminar Participants: left to right; NCPhA First Vice President Julian Upchurch, Under Secretary of HHS Donald M. Newman and John Mackowiak, UNC School of Pharmacy

MARCH 1987 VOLUME 67 NUMBER 3



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MARCH 1987 VOLUME 67 NUMBER 3
ISSN 0528-1725

CONTENTS

Schering Report VII 5
Significant Patent Expirations 9
NC General Assembly Roster 12
Tom Holland-Mount Holly 27
Local News 31
Scenes from the Socio-Economic Seminar 32
Dickinson's Pharmacy 34
Classified Advertising 35
Personal Notes 36

ADVERTISERS

Carolina Surgical Supply 10
Colorcraft 27
Justice Drug Company 1
Kendall Drug Company ..... 2nd Cover
Knoll Pharmaceuticals ..... 28 & 29
Lilly 24
Marion Laboratories 14
Owens & Minor, Inc. ..... 3rd Cover
Pilot Life 2
Dr. T.C. Smith Co./W.H. King Drug ..... 4th Cover
Spear Associates ..... 6 & 20
Store Fixtures & Planning, Inc. 4
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SCHERING REPORT VIII UNDERSCORES PHARMACISTS' SATISFACTION WITH PROFESSION AND PERSONAL LIFE

A major finding of an independent nationwide survey commissioned by Schering Laboratories reveals that pharmacists are generally well satisfied with their professional and personal lives, although there are different perceptions by age, sex and work setting, with "burnout" emerging as a significant problem.

"Pharmacy is a dynamic and increasingly important health care profession, so it's not surprising that pharmacists — whether they practice in independent, chain or hospital pharmacies — are highly introspective and increasingly concerned about their relationships with customers, physicians, their families and fellow practitioners," said Dr. Jack Robbins, director — pharmacy affairs, Schering Laboratories.

"What emerges from the survey is a clear picture of pharmacists as caring health professionals," he added. "They prefer using their professional expertise where it's needed most and where they get the greatest personal satisfaction — meeting the needs and demands of patients for advice and counsel on health matters."

Schering Report VIII — "Inside Pharmacy: The Anatomy of a Profession" — also explored the growing impact of women in the profession, the pharmacist's evolving self-esteem as a health care provider, and the relationship between prestige and work satisfaction as revealed through membership in national, state and local pharmacy associations.

The 1986 survey was based on over 300 in-depth interviews with male and female pharmacists across the country in large and small cities, towns and rural communities. "To get a good look at the profession from the inside out, researchers interviewed pharmacists practicing in independent, chain and hospital pharmacies," Robbins said.

Highlighting the survey, he reported that pharmacists, when asked to rank their five "most preferred" professional activities, named counseling patients about prescriptions as number one, followed by filling prescriptions, advising patients about over-the-counter medications, consulting with physicians, and advising patients about non-drug related matters.

"It seems evident," he observed, "that activities related to the patient's welfare rank high with pharmacists. The only significant difference arose with hospital pharmacists, who as you might expect, listed conferring with physicians as the activity they preferred most."

"The pharmacist's age and sex also showed up in the results. "Women pharmacists felt even stronger than men did about counseling patients as their first choice (74 percent versus 68 percent)," Robbins pointed out. "By age, 65 percent of pharmacists over 40 listed filling prescriptions as their number-one preference against 45 percent for the under-40 group."

Pharmacists seemed equally clear about what they consider routine or mostly business matters. "They don't like clerical activities or keeping prescription records, stocking shelves, handling cash and credit card transactions, speaking with sales representatives or addressing non-medical groups, such as PTAs," he added.

"On the other hand," Robbins pointed out, "pharmacists would like more personal interaction, not only with patients, but with doctors, nurses and other medical personnel. They also want to be more active professionally, maintaining patient profiles and serving on professional committees.

"Education, their own and that of others, was also a forefront issue," he observed. "They want to continue their education through lectures and seminars, as well as teach, give lectures and participate in public education — in particular, helping teenagers learn about proper use of pharmaceuticals and the dangers of drug abuse."

What work experiences do pharmacists find very satisfying in a personal or professional way?

They reported being very satisfied with relationships involving fellow workers (63 percent) and happy with work in general (44 percent). Pharmacists also enjoyed contacts with other pharmacists outside their immediate work environment (42 percent), got great satisfaction from delivering patient care (34 percent), and were very satisfied with the prestige of their profession (34 percent). Finally, 32 percent said they were very satisfied with their ability to meet their patients' needs.

However, some sharp differences in degree of satisfaction emerged in analyzing the responses by where the pharmacist practices, and whether the pharmacist was a man or woman:

- Respondents in independent drug stores were much more satisfied with their work

Continued on page 6

SCHERING REPORT

Continued from page 5

experiences than those in chains or hospital pharmacies. Why? Robbins speculated that "pharmacists in independent practice have closer personal contacts with patients, thereby reintorcing their self-image as nurturing health care professionals."

- More men than women (37 percent versus 26 percent) derive great satisfaction in the status and prestige associated with pharmacy. Also, men get greater satisfaction in meeting patients' needs and demands (35 percent against 26 percent).
- However, more women pharmacists reported being satisfied with their current salaries (24 percent versus 18 percent).

Factoring in the respondents' age and membership in a national pharmacy association also revealed some striking differences. Overall, older pharmacists are considerably more satisfied than their younger counterparts with work experiences, relationships with fellow employees, and the intangible rewards from patient care and professional prestige.

"On the question of satisfaction with work experiences, pharmacists who belonged to a national pharmacy group indicated that they were very satisfied with work in general (52 percent), compared with non-joiners (31 percent)," Robbins observed. "And that response pattern also emerged in questions involving satisfaction in dealing with patients, and status and pride as pharmacists."

When asked if they were "very dissatisfied with anything," very few respondents — less than 10 percent — cited as reasons for their dissatisfaction lack of opportunities for promotion; current salary and periodic increases; or unhappiness over management policy decisions.

"From these findings," he said, "pharmacists seem fairly satisfied with their work."

The survey also focused on the pharmacist-physician relationship, with some notable

differences arising. Two-fifths of the respondents (41 percent) said that doctors treat them as equals, but a larger proportion (57 percent) felt they did not.

How is that sense of "equality" perceived? More than half of the respondents (53 percent) recall friendly relations with doctors; 31 percent cited instances where doctors sought their advice on drugs, dosages and side effects; and 20 percent said that doctors "respect my opinion and knowledge, and accept my recommendations."

The survey also probed the impact on pharmacy of the trend toward shifting many prescription drugs to over-the-counter status.

Some 57 percent of the respondents believe that the OTC switch is having a "decided" impact, while 43 percent said that the switch has left the profession unchanged. Of pharmacists who felt that the switch is affecting the profession, 29 percent said that the pharmacist himself had been impacted for the better, citing "greater freedom to counsel patients more frequently on OTC medications and to use their professional knowledge in making recommendations."

Some respondents (23 percent) noted that the shift also is impacting patients, freeing them to choose among several OTC drugs. They reported that "patients need new knowledge and more counseling by pharmacists to help them select an OTC medication." Only three percent felt that the shift would mean fewer prescriptions for pharmacists.

Interviewed about their personal lives, pharmacists seem to be happy with most aspects of their lifestyles. Robbins reported that "they were very satisfied with immediate family relationships, their mental and physical health, their friendships and life in general."

On the less positive side, less than half (41 percent) were very satisfied with their leisure activities, and only 26 percent reported being very satisfied with their financial status.

In exploring any friction between work and social and family obligations, the Schering Report uncovered only a small degree of conflict. Relatively few respondents (17 percent) identified working on weekends as presenting problems with family life, and fewer still torn between the demands of work and personal life.

Some pharmacists (25 percent) noted that work-home conflicts came with the job, and they accept them as part of practicing pharmacy.

Pharmacists also were questioned about the increasing number of women in the profession. More than half (56 percent) believed that the entry of women would make no difference — "a pharmacist is a pharmacist regardless of gender." More than a third (35 percent) said that more women will have a positive impact, citing qualifications and education comparable to those of men, and greater compassion and understanding.

"Asking pharmacists why they belonged to professional associations, and what benefits they expected to derive from them, turned up a wide range of responses," Robbins reported.

"Almost half of the respondents (48 percent) were members of national professional associations," he added. "Hospital pharmacists dominated among the three groups (67 percent), compared with 50 percent for pharmacists in independent practice, and 28 percent for pharmacists in chain drug stores."

In addition, among the members, there were more women than men (58 percent versus 45 percent), more pharmacists with advanced degrees than with B.S. degrees (65 percent versus 40 percent), and more city than suburban pharmacists (55 percent to 40 percent).

"Touching on the sensitive issue of pharmacist-physician relationships, pharmacists who reported that they were treated as equals by doctors are more apt to belong to professional associations (55 percent versus 42 percent) than those who felt they were not treated as equals," Robbins pointed out.

As for the benefits of belonging, pharmacists mentioned — in order of importance — educational advantages (70 percent); financial benefits, such as insurance plans (19 percent); social benefits (12 percent); and influence upon legislation (six percent).

"Pharmacists had similar responses when asked about membership in state or local pharmacy groups, and there were more women than men, and more urban than suburban pharmacists."

One of the most profound findings in the Schering study came to light on the topic of "burnout." "This appears to be a significant problem," Robbins noted, "with more than three-quarters of the respondents (78 percent) saying 'yes', burnout is a problem.

"Again, differences in perception appear to be related to the different work settings. Chain and hospital pharmacists (81 and 79 percent, respectively) were emphatic about burnout as a major concern, while only 73 percent of

Continued on page 8

SCHERING REPORT

Continued from page 7

independent pharmacists saw it as a problem," he added.

Further, women pharmacists reported more burnout than men (83 percent to 76 percent). "This may indicate that women, in some pharmacies, may feel they are under extra pressures to prove their competence," Robbins observed. "Also, younger pharmacists, those under 40, reported an 84-percent incidence of burnout compared with 68 percent for those over 40 years of age."

How to avoid burnout? "Make life behind the counter less boring and more creative," the respondents said. Suggestions included more flexible work hours, hiring more technicians to reduce pharmacists' workload, varying duties, and greater opportunities to use their professional training in direct contact with physicians and patients.

Summarizing the 1986 Schering Report, Robbins underscored the dynamic nature of the pharmacy profession today, citing its problems and emphasizing its expanding opportunities in serving the health care needs of Americans.

CALL FOR PAPERS

The NCSHP Program Committee is calling for papers to be presented in poster format at the NCSHP Winter Meeting in February 1988. Summaries of papers should be prepared according to the guidelines outlined in the January 1987 issue of *American Journal of Hospital Pharmacy* and submitted to Dennis Williams, Pharm.D., Program Committee Chairman, Beard Hall 200H, UNC, Chapel Hill, NC 27514.

The deadline for receipt of papers is August 3, 1987. Notification of acceptance will be sent by September 14, 1987.

Papers submitted for presentation at national meetings are welcome. Please participate and share your work with your North Carolina colleagues.

The Upjohn Research award will also be selected from papers submitted. The award consists of a plaque and a cash award from the Upjohn Company. Each paper will be evaluated by at least two NCSHP members. Papers submitted for consideration of this award do not necessarily have to be presented at the poster session, but the author should clearly state his(her) intent upon submission.

N.C. Pharmacists at the NARD's 19th Annual Conference on National Legislation and Public Affairs, Washington, March 24. Left to right: Jesse Pike, NARD Past President; W.W. Moose, NARD 5th Vice President; Congressman H. Martin Lancaster, D-3rd District; Al Mebane, NCPhA Executive Director; Betsy Mebane; Lib Fearing and NCPhA President M. Keith Fearing, Jr.

BRANDED DRUGS WHOSE PATENTS WILL EXPIRE BY 1994

Brand Name	Generic Name	Branded Manufacturer	Sales (000)*
Patent expired in 1986			
Advil	Ibuprofen	Amer. Home Prods.	$200,000
Haldol	Haloperidol	McNeil	87,814
Catapres	Clonidine HCl	Boehringer Ingelheim	86,395
Alupent	Metaproterenol sulfate	Boehringer Ingelheim	51,651
Sinequan	Doxepin HCl	Roerig	39,381
Carafate	Sucralfate	Marion	38,628
Zyloprim	Allopurinol	Burroughs Wellcome	34,070
Centrax	Prazepam	Parke-Davis	33,600
Velosef	Cephradine	Squibb	32,368
Visken	Pindolol	Sandoz	16,800
Cephulac	Lactulose	Merrell Dow	N/A
Patent expires in 1987			
Ancef	Cefazolin sodium	Smith, Kline & French	97,303
Tranxene	Clorazepate dipotassium	Abbott	88,674
Cleocin	Clindamycin HCl	Upjohn	83,488
Duricef	Cefadroxil	Mead Johnson	47,956
Bactrim DS	Trimethoprim w/sulfamethoxazole	Roche	34,000
Septra	Trimethoprim w/sulfamethoxazole	Burroughs Wellcome	17,000
Unipen	Nafcillin sodium	Wyeth	N/A
Patent expires in 1988			
Feldene	Piroxicam	Pfizer	240,234
Timoptic	Timolol maleate	Pfizer	119,710
Adriamycin	Doxorubicin HCl	Adria	66,445
Nalfon	Fenoprofen calcium	Lilly	46,545
Pavulon	Pancuronium bromide	Organon	16,000
Patent expires in 1989			
Keflex	Cephalexin	Lilly	237,585
Clinoril	Sulindac	Merck	134,861
Nebcin	Tobramycin sulfate	Dista	74,942
Platinol	Cisplatin	Bristol-Myers	63,115
Proventil	Albuterol sulfate	Schering	54,675
Ventolin	Albuterol	Glaxo	47,206
Lotrimin	Clotrimazole	Schering	22,400
Mutamycin	Mitomycin	Bristol-Myers	20,720
Blenoxane	Bleomycin sulfate	Bristol-Myers	19,824
Asendin	Amoxapine	Lederle	17,000
Blocadren	Timolol Maleate	Merck	16,800
Patent expires in 1990			
Dolobid	Diflunisal	Merck	48,346
Tolectin	Tolmetin sodium	McNeil	46,818
Parlodel	Bromocriptine mesylate	Sandoz	34,450
Imodium	Loperamide HCl	Janssen	17,920
Retin-A	Tretinoin	Ortho	12,910
Amikin	Amikacin sulfate	Bristol	N/A

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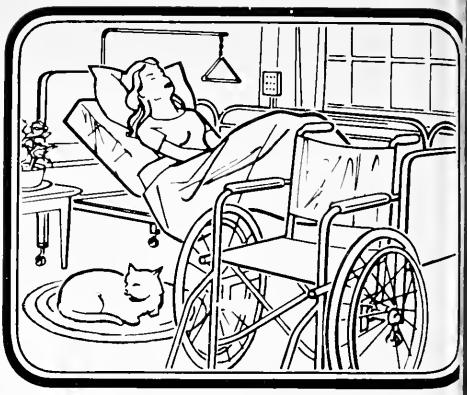

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Continued from page 9

Brand Name	Generic Name	Branded Manufacturer	Sales (000)*
Patent expires in 1991			
Procardia	Nifedipine	Pfizer	180,302
Sinemet	Carbidopa-levodopa	Merck	72,708
Ovral	Norgestrel w/ethinyl estradiol	Wyeth	55,650
Stadol	Butorphanol tartrate	Bristol	13,000
Monistat	Miconazole	Ortho	N/A
Patent expires in 1992			
Naprosyn	Naproxen	Syntex	249,061
Ceclor	Cefaclor	Lilly	132,148
Flexeril	Cyclobenzaprine HCl	Merck	51,139
Lorelco	Probucol	Merrell Dow	N/A
Spectrobid	Bacampicillin HCl	Roerig	N/A
Patent expires in 1993			
Tenormin	Atenolol	Stuart	210,807
Lopressor	Metoprolol tartrate	Ciba-Geigy	160,072
Xanax	Alprazolam	Upjohn	147,476
Corgard	Nadolol	Squibb	103,320
Dobutrex	Dobutamine HCl	Lilly	N/A
Patent expires in 1994			
Tagamet	Cimetidine HCl	Smith, Kline & French	481,967
Mezlin	Mezlocillin sodium	Miles	N/A
Bricanyl	Terbutaline sulfate	Lakeside	N/A

*1985 sales, some estimated.
N/A = not available.

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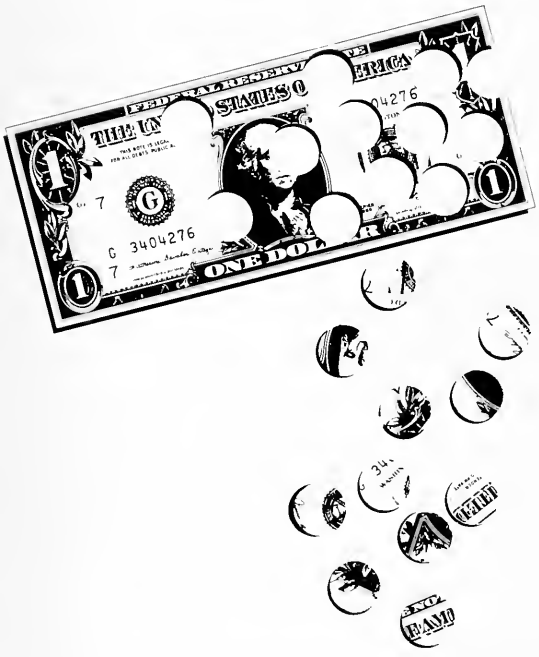

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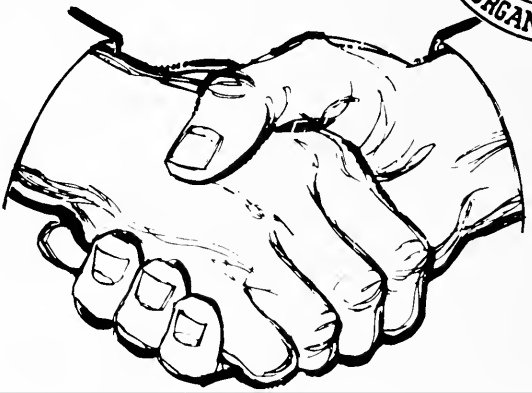

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Continued on page 22

N.C. GENERAL ASSEMBLY

Continued from page 21

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World class advice for your every day problems.

More than 50,000 pharmacists know these men and use their wisdom to solve everyday problems. Dave Schmidt and Harles Cone, Ph.D., gave them a better understanding of human nature and improved their ability to communicate. And many have profited from the good dollar sense of Allan Hurst and his lectures on financial planning, cash flow and store management. We're proud to have brought their Professional Development programs to your association meetings and conventions during the past 12 years. We hope they made your world better.

Upjohn

STILL GOING STRONG AFTER 1 MILLION PRESCRIPTIONS

MOUNT HOLLY — Thomas Holland became a pharmacist simply because it seemed the natural thing to do. After all, his family had been in the business since 1893.

"I just kind of fell into it," says Holland, 66, who owns the Holland Drug Co. at the corner of Main Street and Central Avenue. "I didn't feel a deep calling for it, like a minister or a schoolteacher would. I worked at the soda fountain as a teenager and went from there to pharmacy school."

With the growth of chain drugstores, there aren't as many customers getting prescriptions at Holland's corner drugstore as before. Still, he reached a milestone by filling the store's one millionth prescription on Oct. 28.

Holland's was started by Washington Holland, Thomas's grandfather, in 1893 across the street from its present location at 100 N. Main St. Washington Holland's son, Willis, joined the store in 1910 and Thomas followed in 1945, three years after graduating from the UNC School of Pharmacy and passing his state boards.

He would have come to work sooner, but World War II got in the way. "The draft board was breathing down my neck, so I enlisted in the Navy," he says.

The Navy put his pharmacy skills to work right away, assigning him first to a hospital in Newport, R.I., then to another in England and eventually to a destroyer.

When Holland returned from military service, he immediately started working with his father. "We worked together until he died in 1971," he says.

Holland now runs the pharmacy alone except for Wednesdays, when he gets help from Charlie Yandell, a retired drug salesman and licensed pharmacist who also works for Caldwell Drug Co. in Gastonia. Yandell also fills in when Holland takes a vacation, usually for about two weeks a year.

Holland hasn't had competition from any of the big chain drugstores around Mount Holly, but a Revco will open in a new shopping center off N.C. 27 in April. He acknowledges that Eckerds and a new Rite-Aid store down N.C. 273 in Belmont have cut into his market share over the years.

"We don't fill as many prescriptions, but they are more expensive," he said. "That's not good for the customers, but we can't help it. It's one of the facts of life."

Still, Holland has survived because his store has kept the old-fashioned, small-town way of doing business intact, he says. It still has a soda fountain where townspeople gather to trade the latest news, and the service from the pharmacy has a personal touch.

"We have old family ties," he says. "We are smaller than the other stores, and we know a lot of our customers by name."

Holland's legacy will end whenever he decides to retire. His son opted for a career in banking rather than continuing with the family business.

"He's got his degree in accounting and works for the S.C. National Bank in Columbia," he said. "When he went to Chapel Hill, he declared his major in pharmacy, but switched to accounting."

That means Holland probably would have to sell his store to another pharmacist looking to enter business for himself. But he hasn't really set a date for doing that.

"I've thought about it," he says. "But I'm not a golfer or fisherman, so I'm not in a hurry."

The Drug Enforcement Administration (DEA) is intensifying its drug diversion surveillance by expanding its diversion staff from 190 to nearly 400 investigators. One thrust of this activity will be to ensure that manufacturers are actively monitoring for excessive orders.

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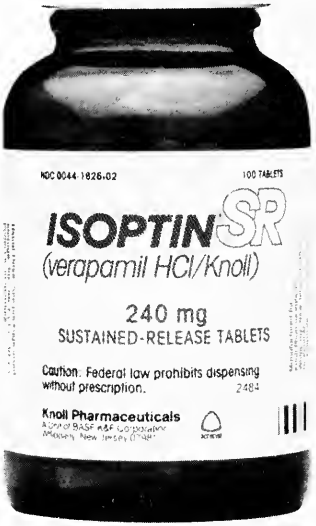

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Please see next page for brief summary.

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WARNINGS: Heart Failure: ISOPTIN should be avoided in patients with severe left ventricular dysfunction (see DRUG INTERACTIONS). Patients with milder ventricular dysfunction should, if possible, be controlled before verapamil treatment. Hypotension: ISOPTIN (verapamil HCl) may produce occasional symptomatic hypotension. Elevated Liver Enzymes: Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Periodic monitoring of liver function in patients receiving verapamil is therefore prudent. Accessory Bypass Tract (Wolff-Parkinson-White): Patients with paroxysmal and/or chronic atrial flutter or atrial fibrillation and a coexisting accessory AV pathway have developed increased antegrade conduction across the accessory pathway producing a very rapid ventricular response or ventricular fibrillation after receiving intravenous verapamil. While this has not been reported with oral verapamil, it should be considered a potential risk. Treatment is usually D.C.-cardioversion. Atrioventricular Block: The effect of verapamil on AV conduction and the SA node may cause asymptomatic 1st degree AV block and transient bradycardia. Higher degrees of AV block, while infrequent (0.8%), may require a reduction in dosage or, in rare instances, discontinuation of verapamil HCl. Patients with Hypertrophic Cardiomyopathy (IHSS): Although verapamil has been used in the therapy of patients with IHSS, severe cardiovascular decompensation and death have been noted in this patient population.

PRECAUTIONS: Impaired Hepatic or Renal Function: Verapamil is highly metabolized by the liver with about 70% of an administered dose excreted in the urine. In patients with impaired hepatic or renal function verapamil should be administered cautiously and the patients monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacological effects (see OVERDOSAGE).

Drug Interactions: Beta Blockers: Concomitant use of ISOPTIN and oral beta-adrenergic blocking agents may be beneficial in certain patients with chronic stable angina or hypertension, but available information is not sufficient to predict with confidence the effects of concurrent treatment in patients with left ventricular dysfunction or cardiac conduction abnormalities. Digitalis: Clinical use of verapamil in digitalized patients has shown the combination to be well tolerated if digoxin doses are properly adjusted. However, chronic verapamil treatment increases serum digoxin levels by 50 to 75% during the first week of therapy and this can result in digitalis toxicity. Upon discontinuation of ISOPTIN (verapamil HCl), the patient should be reassessed to avoid underdigitalization. Antihypertensive Agents: Verapamil administered concomitantly with oral antihypertensive agents (e.g., vasodilators, angiotensin-converting enzyme inhibitors, diuretics, beta blockers, prazosin) will usually have an additive effect on lowering blood pressure. Patients receiving these combinations should be appropriately monitored. Disopyramide: Disopyramide should not be administered within 48 hours before or 24 hours after verapamil administration. Quinidine: In patients with hypertrophic cardiomyopathy (IHSS), concomitant use of verapamil and quinidine resulted in significant hypotension. There has been a report of increased quinidine levels during verapamil therapy. Nitrates: The pharmacologic profile of verapamil and nitrates as well as clinical experience suggest beneficial interactions. Cimetidine: Two clinical trials have shown a lack of significant verapamil interaction with cimetidine. A third study showed cimetidine reduced verapamil clearance and increased elimination to 1/2. Anesthetic Agents: Verapamil may potentiate the activity of neuromuscular blocking agents and inhalation anesthetics. Carbamazepine: Verapamil may increase carbamazepine concentrations during combined therapy. Rifampin: Therapy with rifampin may markedly reduce oral verapamil bioavailability. Lithium: Verapamil may lower lithium levels in patient on chronic oral lithium therapy. Carcinogenesis, Mutagenesis, Impairment of Fertility: There was no evidence of a carcinogenic potential of verapamil administered to rats for two years. Verapamil was not mutagenic in the Ames test. Studies in female rats did not show impaired fertility. Effects on male fertility have not been determined. Pregnancy (Category C): There are no adequate and well-controlled studies in pregnant women. ISOPTIN crosses the placental barrier and can be detected in umbilical vein blood at delivery. This drug should be used during pregnancy, labor, and delivery, only if clearly needed. Nursing Mothers: ISOPTIN is excreted in human milk, therefore, nursing should be discontinued while verapamil is administered. Pediatric Use: Safety and efficacy of ISOPTIN in children below the age of 18 years have not been established.

ADVERSE REACTIONS: Constipation 8.4%, dizziness 3.5%, nausea 2.7%, hypotension 2.5%, edema 2.1%, headache 1.9%, CHF/pulmonary edema 1.8%, fatigue 1.7%, bradycardia 1.4%, 3° AV block 0.8%, flushing 0.1%, elevated liver enzymes (see WARNINGS). The following reactions, reported in less than 1.0% of patients, occurred under conditions (open trials, marketing experience) where a causal relationship is uncertain; they are mentioned to alert the physician to a possible relationship: angina pectoris, arthralgia and rash, AV block, blurred vision, cerebrovascular accident, chest pain, claudication, confusion, diarrhea, dry mouth, dyspnea, ecchymosis or bruising, equilibrium disorders, exanthema, gastrointestinal distress, gingival hyperplasia, gynecomastia, hair loss, hyperkeratosis, impotence, increased urination, insomnia, macules, muscle cramps, myocardial infarction, palpitations, paresthesia, psychotic symptoms, purpura (vasculitis), shakiness, somnolence, spotty menstruation, sweating, syncope, urticaria. Treatment of Acute Cardiovascular Adverse Reactions: Whenever severe hypotension or complete AV block occur following oral administration of verapamil, the appropriate emergency measures should be applied immediately, e.g., intravenously administered isoproterenol HCl, levarterenol bitartrate, atropine (all in the usual doses), or calcium gluconate (10% solution). If further support is necessary, inotropic agents (dopamine or dobutamine) may be administered. Actual treatment and dosage should depend on the severity and the clinical situation and the judgment and experience of the treating physician.

OVERDOSAGE: Treatment of overdosage should be supportive. Beta-adrenergic stimulation or parenteral administration of calcium solutions may increase calcium ion flux across the slow channel, and have been used effectively in treatment of deliberate overdosage with verapamil. Clinically significant hypotensive reactions or fixed high degree AV block should be treated with vasopressor agents or cardiac pacing, respectively. Asystole should be handled by the usual measures including cardiopulmonary resuscitation.

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Triazolobenzodiazepines: New and Improved Antidepressants?

"A relatively new class of drugs — triazolobenzodiazepines — may represent a major breakthrough in safety and efficacy for the treatment of depression," says Jay B. Cohn, M.D., Ph.D., clinical professor of psychiatry, department of psychology and biobehavioral sciences, University of California College of Medicine in Los Angeles.

Unlike earlier benzodiazepines, triazolobenzodiazepines show considerable promise for treating depression, according to Karl Rickels, MD., professor of psychiatry at the University of Pennsylvania School of Medicine in Philadelphia. Although benzodiazepines relieve anxiety, they can worsen depression. Unfortunately, the two conditions often coexist.

Now, a preliminary report by Rickels has developed new and encouraging evidence that triazolobenzodiazepines such Xanax, unlike earlier benzodiazepines, are effective in relieving both depression and anxiety. The study involving 504 outpatients with a variety of depressive symptoms compared the effectiveness of Xanax with two TCA antidepressants, amitriptyline and doxepin.

Xanax was equal to the TCAs in producing clinical improvement of patients, but superior when 12 adverse side effects were compared: drowsiness, dry mouth, tachycardia (accelerated heartbeat), constipation, blurred vision, hypotension, nervousness, headache, faintness, nausea or vomiting, light-headedness, and diarrhea. Drowsiness was produced equally by the three medications, but Xanax showed fewer cardiovascular effects.

"At Upjohn," says Robert P. Purpura, M.D., medical manager, psychopharmacology medical research, "we are presently evaluating a new drug, Deracyn (adinazolam), another triazolobenzodiazepine, in patients suffering from neurotic depressive disorders. We hope this drug will prove safer than presently available antidepressants, with fewer cardiotoxic effects."

Anxiety and depression together afflice many millions of Americans. For them, the successful outcome of the search for safer medications without adverse effects on the heart will be an important and significant event.

Additional Readings

1. Alexander B., "A Review of Psychotropic Drugs, Part 2: Antidepressants," *Journal of Pharmacy Technology,* 1:3, May/June 1985, pp. 104–107.
2. Brody, J. *The New York Times Guide to Personal Health,* Times Books, New York, 1982, pp. 146–151, 678–680.
3. Rickels, K., et al., "Alprazolam, Amitriptyline, Doxepin, and Placebo in the Treatment of Depression," *Archives of General Psychiatry,* 42, February 1985, pp. 134–141.

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Keep this for your records

CHARLOTTE WOMAN'S PHARMACEUTICAL AUXILIARY

The Members of the Charlotte Woman's Pharmaceutical Auxiliary have been experiencing some different types of meetings than we have previously attended. These have been planned by Mrs. Johnie Bennick (Marguerite), First Vice President and Program Chairperson.

In January we changed the day and time of the regular meeting in order to secure the Two Decker Fun Bus that WBT schedules, free of charge, to community and religious groups. (Of course, the Organization may tip the driver!)

A tour of the N.C. University at Charlotte was our destination for the day. By pre-arrangement the Director of Development joined the group on board the bus to first tour the Campus and the surrounding grounds and various important buildings, such as: the Memorial Hospital, University Research Park and University Place, a "newtown" center adjacent to the Campus. After the Bus tour we walked through some of the Buildings. We enjoyed a delicious Lunch in the Cafeteria, visited the Library, the Special Collection of Books and Art, the Mary and Harry L. Dalton Rare Book Room.

We were pleased at the growth of the University and quite proud that it is such an important part of Charlotte.

In February the Charlotte Woman's Pharmaceutical Auxiliary had a learning session on an important subject — "Personal Legal Plans — Wills and Estates." This Company was created to act as Consultants between Client and Lawyer.

This is a service that through talks to groups, through Seminars, visits to one's home — if needed — gives information on many legal questions, helps one formulate questions one may need to ask the Attorney. It could be questions about Wills, Children or Spousal Trusts, Power of Attorney, Living Wills, Tax Advice, Personal Income Tax Preparation. Information on these subjects is to help one formulate the questions one may need to ask an Attorney.

This Group will send a person to one's home, will answer your questions by phone. This is a service that saves time and expense making one's visit to the Attorney's Office more fruitful in less time. Also can cut down on number of calls one may have to make to an Office. With such preparation on questions one needs to know one will not so often leave the Attorney's Office with some important question thought about much later necessitating another visit to the Attorney's Office.

In March the Charlotte Woman's Pharmaceutical Auxiliary celebrated the Annual Fun Day and visit of the State President in a different way. As a group we visited the WBTV Station at One Julian Price Place.

We were met by the Station Hostess who gave us a guided tour of the Station. Since "Top of the Day" Program was out on location, the Auxiliary Members were allowed a brief visit in the Control Room. This was exciting! We found the tour of the various sets and activities fascinating.

We had Lunch in the Station Cafeteria. Each one enjoyed their special selection of food . . . and recognizing some of the T.V. personalities. Also it was fun to see how many of the pictures, lining the walls, of Radio and T.V. personalities we could recognize. We were quite excited when we recognized Johnie and Marguerite Bennick's picture taken in New York, several years ago, when they were contestants on a T.V. Show . . . They had won Funds for a Special Charity.

After lunch we had a brief business session. A gift was presented the State President, Jewel Oxendine, one of our own members!

A Special Meeting was set for later in March in order to correlate and complete the plans of the Auxiliary for the Annual Convention of the N.C. Pharmaceutical Association and the Auxiliaries Meeting in Charlotte in April 22, 23, 24 and 25.

LOCAL NEWS

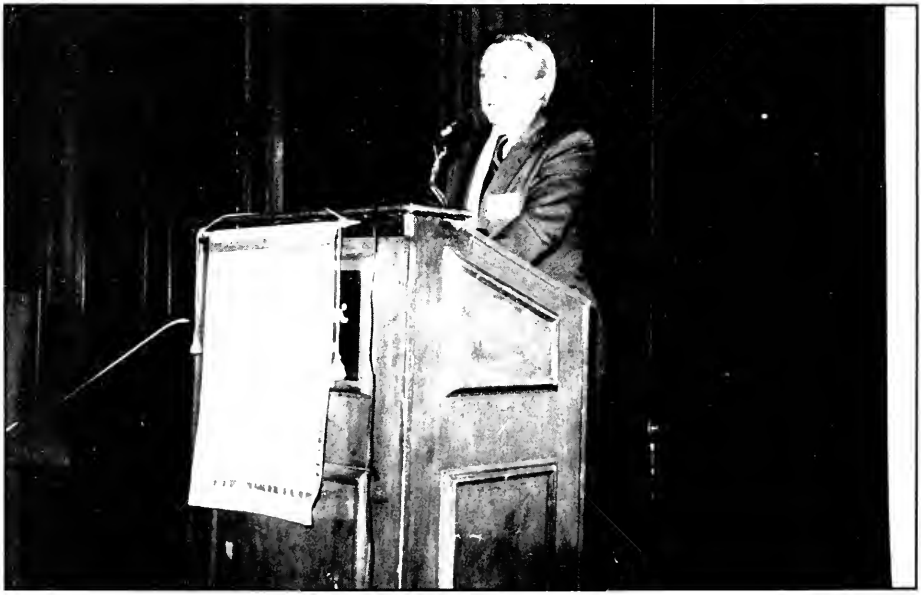
THE GUILFORD COUNTY SOCIETY OF PHARMACISTS GREENSBORO, NC

The regular monthly meeting of the Guilford County Society of Pharmacists was held on Sunday evening, February 15, 1987, at Moses H. Cone Memorial Hospital in Greensboro. Our speaker was David R. Work, J.D., R.Ph., Executive Director of the North Carolina Board of Pharmacy. The program consisted of a review of current Board of Pharmacy activities, and a slide presentation on the licensure examination. Those in attendance were certainly enlightened as to some of the "interesting" results obtained by candidates for licensure on the practical portion of the examination. Following the program, there was a short business, then the meeting was adjourned.

J. Frank Burton
Sec.-Tres.

SOCIO ECONOMIC SEMINAR
Holiday Inn Four Seasons
Greensboro, February 25, 1987

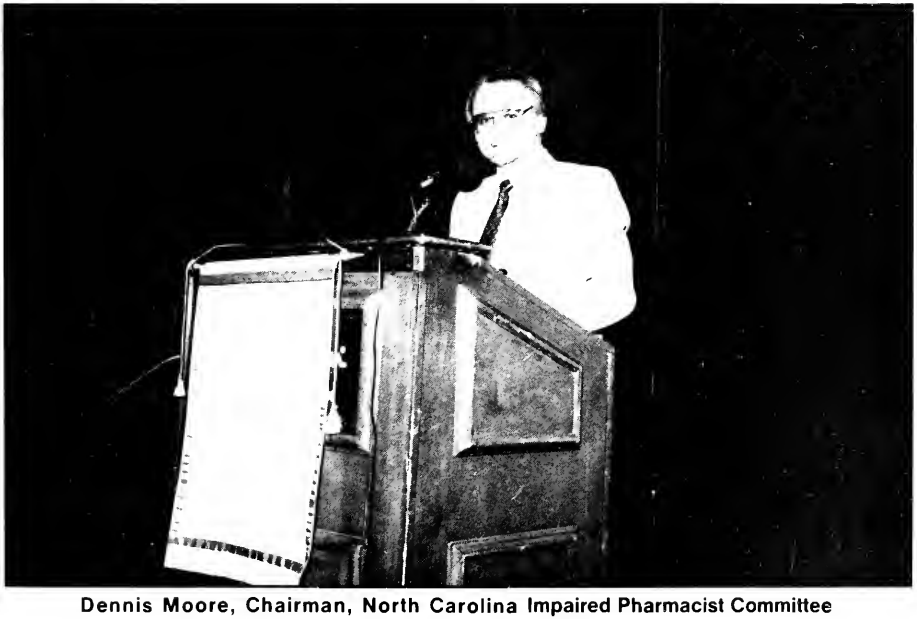
John W. Hasty, coordinator of the Virginia Impaired Pharmacists program and President of the Virginia Pharmaceutical Association.



Virgil McBride, NCPhA Legislative Agent

SOCIO ECONOMIC SEMINAR

Recie Bomar, Professional Operations Representative, Revco Drug Stores.



Dennis Moore, Chairman, North Carolina Impaired Pharmacist Committee

DICKINSON'S PHARMACY

by Jim Dickinson

"The Doctor's Pharmacy." Dear Pharmacy School: I have a new health care facility in Connellsville, Pa. and plan to open a new pharmacy called the DRx's Pharmacy. I believe under the new state laws I as a physician may own such a facility. But if that might not appear ethical in any manner, I would be happy to help get a new pharmacist established in this facility.

So wrote Dr. Mark S. Fremd, 32, recently. His response was bleak — and it should not have been. Pharmacy schools are overflowing with bright, eager, soon-to-graduate pharmacists whose shoulders are stooped under the burden of student loan payback obligations, and whose eyes are filled with dollar signs put there by chain drugstore recruiters.

The Dr. Fremds of this world — and surely there are many, as the medical profession tightens its belt in adverse economic circumstances — want young, energetic pharmacists to take a chance with them.

Dr. Fremd's situation is intriguing. He has a practice of nearly 2,000 "active" patients, many of whom are elderly, and two large apartment buildings nearby. Beyond Connellsville (48 miles southeast of Pittsburgh) is an immediate population catchment of some 12,000 people and 8–12 prescribing physicians.

In a two-mile radius of his Family Health Care Center, Dr. Fremd has three chain drugstores and one Medicine Shoppe — and he says his patients are always badgering him about when is he going to get a pharmacy for them? Many of them are old, and they don't want to walk 8–10 blocks to the nearest pharmacy.

He is a bright, volatile entrepreneur and he wants to help them as he helps himself. But where are the bright, entrepreneurial pharmacists?

Sadly, he's frustrated. The chains are taking them all, at starting salaries around $30,000-plus, and they don't see his neighborhood as easy pickings (that's all that inefficiently big corporations seem to want these days: easy pickings. Possibly it has something to do with excessive price-cannibalism in the mass-merchandise market and a consequent reluctance to risk threadbare profit margins on ventures that constitute less than a sure thing).

Anyway, Dr. Fremd could not have the interactive kind of health care relationship with a chain and his patients that he could with a pharmaceutical entrepreneur. And he isn't sure he wants to get into bed with a chain, anyway; he says one tough, street-wise chain operator he approached gave him some friendly advice — "Hey, doc, you don't want to get into this. It's a dirty business."

So, what does he do? He frankly admits that he's explored the dispensing-physician option. It would solve his patients' problem, but he doesn't like the ethical aspects, and the suspicions he fears that the dual role could arouse in his patients.

But Dr. Fremd has other ideas. He wants his pharmacist partner (if he ever finds one) to help him launch a DRx's Pharmacy *chain* that would promote patient-interactive good health, home health care, home oxygen service, and all the spin-off goods and services that could follow.

But he's only 32. He hasn't amassed the fortune and the savvy that all this could take to start. He needs the help of an enterprising pharmacist.

And the best thing of all about this is that there has to be thousands of Dr. Fremds out there.

The truly sad thing is: Where are the young, risk-taking, energetic pharmacists? They're "out there," too, but their debt burdens seem to be too big to allow them to answer the call of this unmet market.

This feature is presented on a grant from G.D. Searle & Co. in the interests of promoting the open discussion of professional issues in pharmacy. G.D. Searle & Co., accepts no responsibility for the views expressed herein as they are those of the author and not necessarily those of G.D. Searle & Co.

NC BOARD OF PHARMACY APRIL MEETING

This Memo shall serve as notice to all interested parties that the North Carolina Board of Pharmacy will hold its regular monthly meeting on Tuesday and Wednesday, April 21st and 22nd in Charlotte, North Carolina. The meeting on Tuesday, April 21st will consist of a hearing which is scheduled in the County Commissioners Hearing Room, Room 400, County Office Building, Charlotte, North Carolina. The Board will continue its meeting to consider other business on Wednesday, April 22nd in the Adams Mark Hotel, 555 South McDowell Street in Charlotte.

The North Carolina Pharmaceutical Association is meeting in Charlotte at that time.

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PHARMACISTS WANTED: Kerr Drug Stores has pharmacist positions available in North Carolina. For more information send resume to PO Box 61000, Raleigh NC 27661 or call Jackie Gupton at (919) 872-5710.

WEEKEND PHARMACY COVERAGE NEEDED: Granville Hospital, a 66 bed community hospital, requires Pharmacist coverage on Saturdays and Sundays. Maintain unit dose system and patient profiles. Contact Joe Earnhardt, Director of Pharmacy, Granville Hospital, College St. Extension, Oxford NC 27565. (919) 693-5115.

PHARMACIST PROFESSIONAL SERVICES/CONSULTATION: Temporary and or Continual. Contact: L. W. Matthews, III, (919) 967-0333 or 929-1783. 1608 Smith Level Rd., Chapel Hill NC 27514.

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Continued on page 36

PERSONAL NOTES

HARGETT JOINS NC DIVISION OF FACILITY SERVICES

On March 2, 1987, Mr. Ernest Hargett began employment as a pharmacist consultant to the Licensure Section of the North Carolina Division of Facility Services. His duties will focus primarily on pharmaceutical services in the long term care environment by offering consultation to facilities, as well as performing compliance surveys.

One of Hargett's goals is to support the North Carolina Pharmaceutical Association in expanding the services provided by the Academy of Consulting Pharmacists. He was formerly associated with the Pharm Save store in Hookerton which provides both dispensing and consulting services to approximately 3500 long term beds. Hargett is a 1973 graduate of the UNC School of Pharmacy and makes his home in Raleigh.

DEATHS

DIANE HARRIS FINK

Diane Fink, Graham, a 1977 graduate of the UNC School of Pharmacy, died March 11, 1987. Mrs. Fink was born in Hickory and had worked with Revco Drug Store in Graham before entering UNC graduate school in Medicinal Chemistry.

LEONIDAS JACKSON

Leonidas Jackson, Erwin, died Thursday, April 2, 1987. He was 87 years old. He was the first mayor of Erwin after it was incorporated in 1967. Jackson was graduated from the UNC School of Pharmacy in 1925 with a Ph.G degree. He was associated with Thomas Drug Store in Erwin and lived in the town for more than 65 years.

WILLIAM LEWIS JOHNSON, JR.

William L. Johnson, Jr., Franklinton, died Thursday, March 5, 1987 at the age of 58. First licensed in 1961, he was associated with Corner Drug Store, Inc. in his home town for more than twenty years. Johnson ran unopposed for mayor of Franklinton in the November 1977 election.

BIRTH

Frances Rader Lena and Manuel Lena, Jr. announce the birth of their first child, Charles Manuel Lena, born March 23, 1987 in Dallas, Texas. Frances received her B.S. in Pharmacy in 1979 and her M.S. in Pharmacy Practice in 1982, both from the UNC School of Pharmacy. She worked as Director of Continuing Education for the Texas Pharmaceutical Association in Austin before moving to Dallas where Manuel, also a pharmacist, is attending law school.

CLASSIFIED ADVERTISING

Continued from page 35

CLINICAL-STAFF PHARMACIST POSITION: Will be working every 3rd weekend and will have responsibilities in unit dose, IV admixtures, cancer chemotherapy, patient education, nursing inservice, pharmacy newsletter, pharmakinetic dosing, drug use evaluation and other evolving clinical applications. Some advanced training and experience in clinical pharmacy preferred. If interested and qualified please send resume to: Director of Personnel, Community General Hospital, PO Box 789, Thomasville NC 27360. EOE.

PROFESSIONAL PHARMACIES: Several small prescription-oriented pharmacies are currently available for individual ownership in North Carolina. These opportunities provide the vehicle to practice pharmacy the way you were taught, while offering an attractive income and more time to be with your family. In some of these cases, financing is also available to qualified candidates. For more information write: Jan Patrick, 10121 Paget Dr., St. Louis MO 63132.

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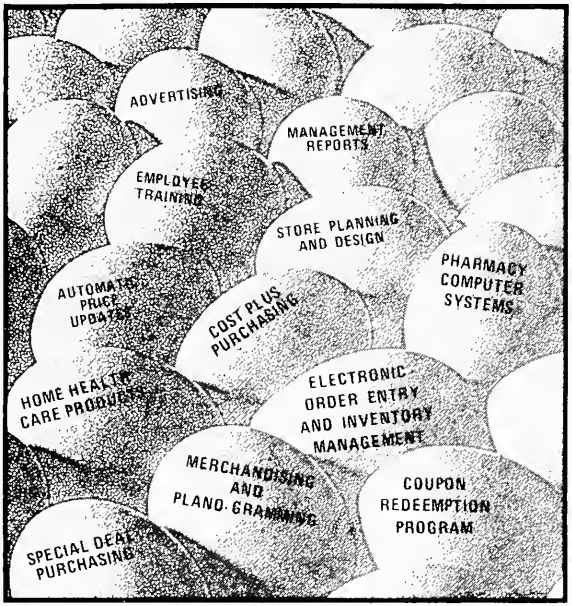

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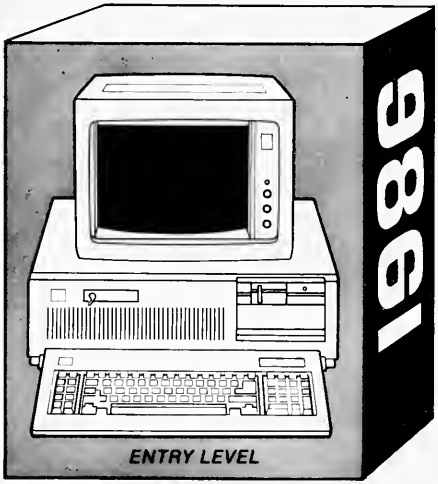

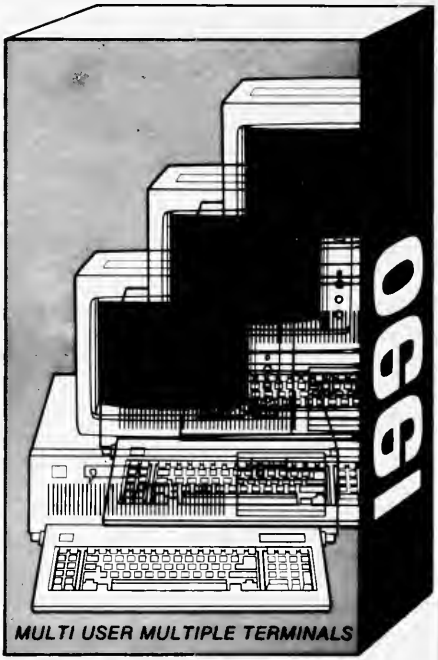

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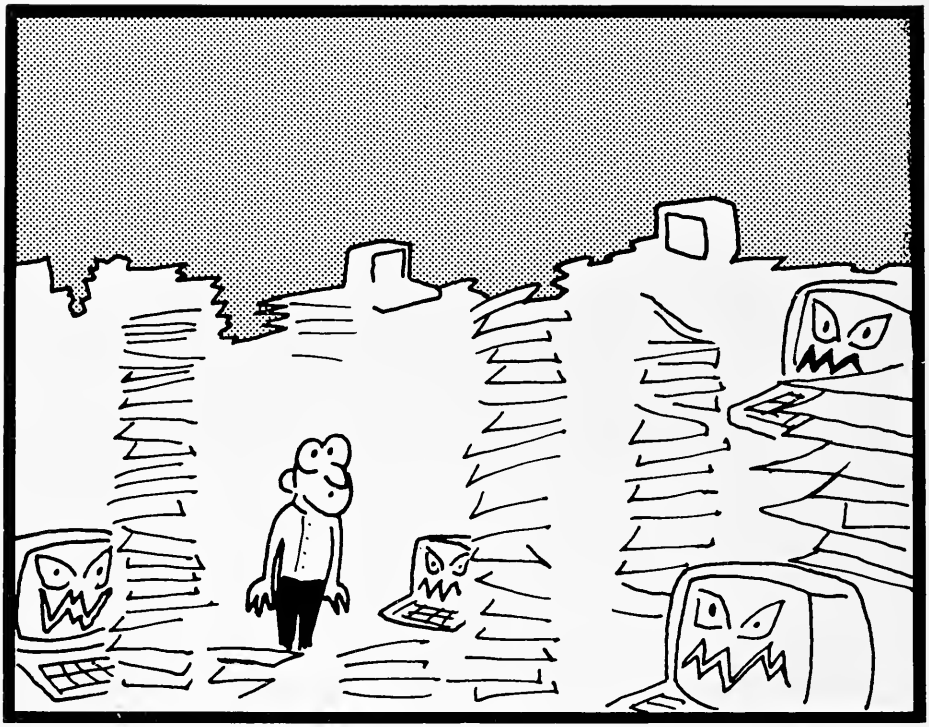

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APRIL 1987 VOLUME 67 NUMBER 4
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CONTENTS

Keith Fearing-Manteo Pharmacist 5
Report of the Third Annual Pharmacy Leaders Forum 9
Undercover Pharmacist Receives Award 19
CE Course — OTC Vaginal Douche Products 20
Dickinson's Pharmacy 31
CE Test 38
Births and Deaths 39
Classified Advertising 40

ADVERTISERS

Carolina Surgical Supply 4
Colorcraft 29
Dr. T. C. Smith Co./W.H. King Drug ..... Back Cover
Eli Lilly and Company 16
Geer Drug Company 32
Justice Drug Company 1
Kendall Drug Company ..... Inside Front Cover
Knoll Pharmaceuticals ..... 36 & 37
Lawrence Pharmaceuticals 22
Marion Laboratories 12
Owens & Minor ..... Inside Back Cover
Pilot Life 2
Renlar Systems 30
Savage Laboratories 6
Spear Associates ..... 8 & 26
Store Fixtures & Planning, Inc. 10
Upjohn 24
USPDI 34
Washington National Insurance Co. 18

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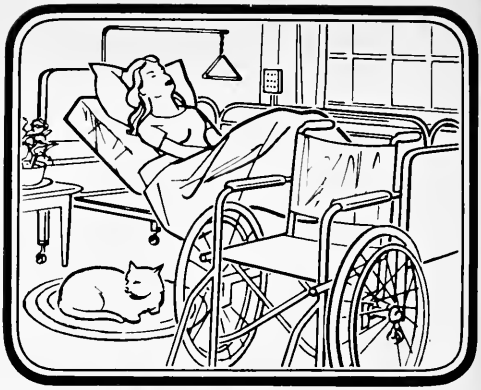

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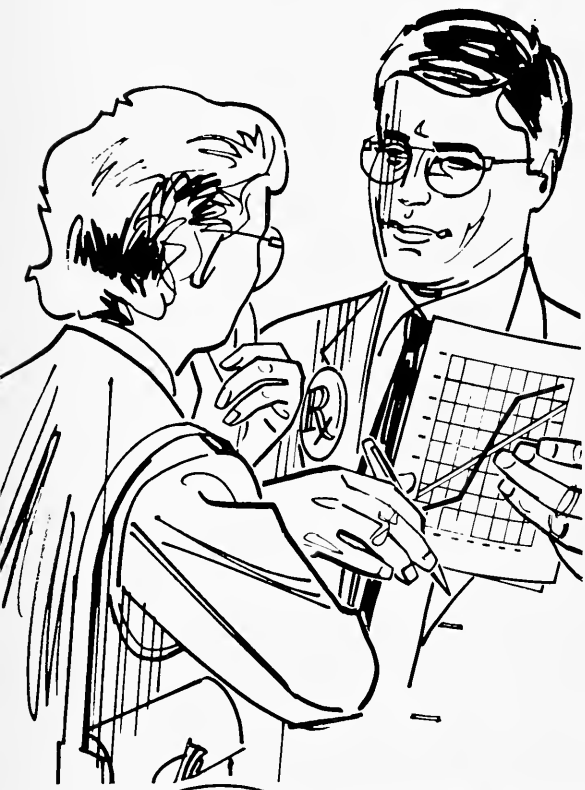

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KEITH FEARING: MANTEO'S MANY-SIDED PHARMACIST

Back in 1947, when Keith Fearing opened Dare County's first permanent pharmacy in Manteo, things were quite a bit different from the way they are today.

For example, there were only two doctors in Dare County, and as Fearing admits, "there weren't a lot of prescriptions to write."

You could get an ocean-front lot for $1,000 and a good hot meal for a quarter.

But despite the simpler times, Dare County's first pharmacy was a place where things invariably happened.

If the doctor couldn't be found, sick or injured folks were usually brought into the pharmacy for medical attention. Fearing can remember doctoring victims of heart attacks, knife and gunshot wounds, and accidents, to name only a few.

But Fearing's pharmacy was not just a place of medicines and healing, the pharmacy also occupied a special place in the life of the community. Here, people gathered to swap tall tales, gossip, dream, or just pass the time talking about the weather.

Fearing's 38 years experience in pharmacy certainly qualifies him as an expert on the role the pharmacy plays in the life of a community.

And despite the recent trend toward market domination by drug store chains, it's refreshing to hear him say that small-town, individually owned pharmacies are still as valuable today as they were back in 1947.

Through his family-owned corporation, Fearings Inc., Fearing managed his Manteo pharmacy until 1980. By then he had branched out into other business enterprises, including insurance and real estate.

From 1981 until 1985 he was co-owner of The Island Pharmacy. And although he sold out his share of the business, he has remained actively involved in pharmacy.

As president of the N.C. Pharmaceutical association, Fearing has worked tirelessly to improve the laws governing pharmacy, with an aim toward making the laws safer for both pharmacists and patients.

Fearing attended Campbell College and graduated from the University of North Carolina at Chapel Hill in 1944. He then served as a medical corpsman in the U.S. Navy.

Fearing and his wife, Mary Elizabeth, have two children. Their daughter, Dean, lives in Roanoke, Va. And their son, Malcolm, lives in Manteo.

M. Keith Fearing, Jr.

Campbell University recently named Fearing "Distinguished Alumnus of the Year."

This interview was conducted by Current reporter Stephen March.

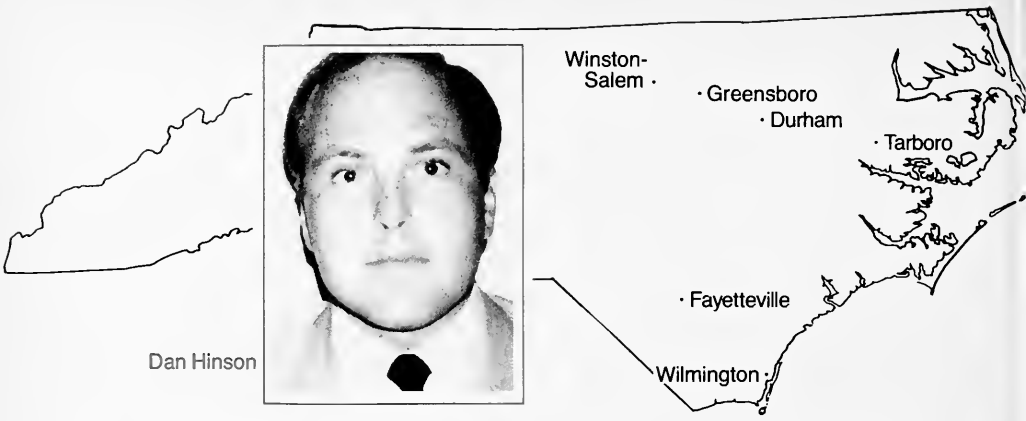
What was it like around here, when you first opened your pharmacy?

I was the only pharmacist in Dare County, and at that time there weren't many prescriptions. When I opened the store, Dr. Hoggard had moved here and opened an office, and he stayed here a year. Dr. Johnston was practicing here —he was the man who delivered me.

But we had periods of times when there wasn't a doctor. We had a Dr. Harris who moved here, on the retirement of Dr. Johnston, and he wrote good prescriptions. Great old fellow. He was a very good doctor, but he had one failing, and that was arm-bending too much. He'd go off on a toot now and then, and when he was gone, a lot of the medical information came from the pharmacy here. And a lot of the happenings were there. I had them brought in — people who had been shot and cut, people who had heart attacks.

Isn't there a trend away from the individually-owned drug store, toward domination of the market by big chains? If so, how do you feel about this trend?

Continued on page 7



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KEITH FEARING

Continued from page 5

There is that trend, but that does not prevent a community pharmacy from being a viable part of a community — if a pharmacist had the initiative and financial backing to open his or her store. The big chains cannot give the kind of service that a pharmacist in an independently owned pharmacy can give.

Medications today are so much more complicated, and patients need advice on how to take it. Some medicines can kill, for example, if taken with cheese.

There's a lot of technical information that pharmacists need to pass on to the patient. You know there are many people in North Carolina who are functionally illiterate. Someone had to take the time to make sure patients understand how to take their medication.

I imagine that you've seen some big changes on the Outer Banks since you were a boy. How has it changed since then?

I remember when we didn't have electricity. Around 1929 my dad and uncle bought the first power system that was here. The electricity was on from 6 in the morning until 11 at night. Later on they turned it on all the time. We generated the power right here. The first current ever generated on the island came from a generating plant on a ship that had come ashore. I believe it was "The Leviathan."

Most of us had spotlights on our vehicles. If the power went off, restoring it became the number one priority. If the lights went out, during the middle of a meal, we'd get up and go to the power plant.

When I was a small child I remember when everyone came and left here by boats. The mail came in from Elizabeth City on the "Trenton." Smaller boats would take it over to Hatteras Island. Back then, if you wanted to get land on the beach, you could often get if it you'd pay taxes on it.

I remember when they built the beach road in the 1930s, and when the bridge to Nags Head was built. It was a single-lane toll bridge, with a draw span.

The Outer Banks really started changing in 1937, with "The Lost Colony," it began attracting more people. Then, after World War II, Wayland Sermons, Guy Lennon and some others built the Carolinian Hotel, and promoted that. The Carolinian became a popular place, and from then on the beach started developing.

You could get an ocean front lot then from $750 to $1,000. Of course the advent of the new bridges helped, too. People started finding the beauty and enjoyment in the area.

I think if an area is going to progress, you've got to have people moving in, buying property and building things. If you don't have that, you're going to regress. There's no standing still.

What are your duties and responsibilities as president of the N.C. Pharmaceutical Association?

To try and guide the fortunes of the association. I've been interested in several things. I've felt there's a great need to strengthen our lobbying efforts for pharmacy, so I appointed a strong legislative committee. I appointed people — friends of pharmacy — who know the leadership in the House and Senate. And we hired a former lobbyist who represented R.J. Reynolds, Virgil Mcbride. We feel we're making progress.

What are your specific objectives regarding these lobbying efforts?

We have several concerns. Physician dispensing is one concern. Doctors write their prescriptions and then they go to a pharmacy —this gives a check and a balance. As pharmacists, we feel that check and balance is very important. But when doctors dispense medicines, they don't always do it themselves, they turn it over to somebody in their office, to pass the medication out, and many times that person might not have the right technical knowledge about the medication.

So we think it would be well if doctors restricted their practice to medicine, and provided prescriptions to their patients. We would like to see this formalized. If doctors are going to dispense, they should meet the same requirements that pharmacists do in handling medications.

What other concerns to you have?

We also have a concern about the mail order prescriptions coming into the state. North Carolina has laws governing pharmacy, but we need to strengthen the rules that allow mail order prescriptions coming in. For instance, any medicine that you dispense in North Carolina has to have a logo on the pill so that it's easy to identify. Medicines coming in through the mail don't have that requirement.

So that's a concern, and we're working on that. Another thing, there's no registration of

Continued on page 8

KEITH FEARING

Continued from page 7

wholesalers or the repackers of drugs, who buy it in bulk and repack it. In North Carolina no one knows who's handling the drugs — and there's no official place for them to register. It's important to have that.

There's also no place in North Carolina — sanctioned by state government — that commemorates pharmacy. So I appointed a committee to see about getting space in the Museum of History building. We've had a couple of meetings with John Ellington, and we've had a promise of maybe as much as 1,500 feet of space — to establish a pharmacy in the Museum of History building in Raleigh, that will be built. It will be four years or so before it will be ready. But he has told us we will have space. We will establish all the artifacts of a 1925 era pharmacy. John Ellington said, "I'd like for the soda fountain to be in there, where you could get a brown cow."

NETWORK SIGNS FIRST CONTRACT

Mickey Watts, president of Pharmacy Network of North Carolina, has announced that a contract has been signed with Maxicare/ Health America for their 60,000 enrollees in North Carolina. Start up date is June 1.

This is a "capitated" contract which means that PN/NC will receive a set payment per enrollee each month. These monies will be distributed to pharmacies who fill scripts for Maxicare members utilizing an AWP plus fee formula. This dispensing fee will vary depending on utilization and percentage of generics used.

Plan specifics are being finalized. Information will be mailed to members hopefully by May 15. There will be a series of workshops across the state conducted by Executive Director, Andrew Barrett, to explain the plan operation and answer questions. Members will be notified of the dates and locations of these workshops.

REPORT OF THE THIRD PHARMACY LEADERS FORUM
February 7, 1987
Southern Pines, N.C.

The Third Annual Pharmacy Leaders Forum was held in Southern Pines at the Mid Pines Resort February 6, 7 and 8, 1987. The forum is a roundtable discussion of issues expected to affect pharmacy, with representatives of pharmacy organizations bringing their respective viewpoints and background information.

Agenda

I. Health Department Regulations
II. Status of Continuing Education
III. Specialization in Pharmacy
IV. Impaired Pharmacists
V. Recruiting Pharmacy Students in High School
VI. Manpower Report
VII. Legislation
VIII. Physician Dispensing
IX. Pharmacist Prescribing
X. Prescriptions by Mail
XI. Campbell University
XII. UNC
XIII. Home Health Care Regulations
XIV. Third Party Regulations
XV. Penalty for Steroid Possession

I. Health Department Regulations

Reference was made to NCAC .2202 and .2203 (attached) pertaining to the dispensing of certain drugs by health department nurses.

Hearings were held last August and September, and the bill was adopted in November. There has been some criticism of the bill, but the opportunity to challenge the bill has passed.

To date, no health department nurses have been trained. Charles Reed has informed all health department nurses and directors. The Division of Facility Services contracted with Kathy D'Achille to prepare training packets (by April, 1987). The packet is designed to train a nurse and pharmacist team to be trainors through a self-instructional module (for home use), to be followed by a half day workshop.

Dispensing in Health Departments has occurred (overlooked) for years in NC (and in many other states). Few (if any) other states have PAs and NPs prescribing and dispensing as in NC. There were few (if any) model pieces of legislation in other states.

The Board attempted to move expeditiously on this and did not want to be perceived as "foot draggers."

NO ACTIONS NEEDED.

II. Status of Continuing Education

There has been some difficulty (trouble) in approving some proposed CE programs. For example: "What are vitamins and how to sell them", "How to use an in-house computer system", and Inservice (in-house) programs. The committee has said no to journal clubs. Most such requests come from local groups. One requirement is to submit applications 30 days prior to the program.

Is the regulation accomplishing what it is supposed to? The question is very difficult to answer. The issue is not whether CE is good or bad, but how to improve it. One attendee admitted 180 degree turn from his original opposition to the requirement stating, "We need CE to survive, to provide services needed in the community. We have had some good programs . . . and some bad ones . . . but not 5 more hours!"

Practitioner input is important. The AHEC advisory group accomplishes this.

Glaxo is preparing to make a major new move in CE. There is a need to create or achieve a balance in the CE programs offered to recognize practitioner needs and wants. Rather than disjointed, independent offerings there should be continuity . . . real programs . . . with tracks and targeted end points and certificates. We should look at substance and purpose rather than just numbers. How can CE providers provide pharmacists with meaningful (certificate or degree) programs 3 to 5 years from now, 3 to 5 years out from pharmacy school?

Some pharmacists think programs intended for other professionals (e.g., cardiovascular program for nurses, by nurses) are legitimate. (There was some discussion about this.) The regulation says this is OK if "reasonably related." Several attendees felt that it may be time for the Board of Pharmacy to rethink the regulation and accept only ACPE approved.

Continued on page 10

LEADERS FORUM

Continued from page 9

Are all programs apropos for all people?

Some feel there is a need to pre and post test.

What factors move people to learn? Pressure, tests (assessment).

There is a seminar in May at the UNC School of Pharmacy on the future of CE (Jane Osterhaus and Betty Dennis). Refer also to agenda item XII.

If and when participants are ever surveyed, they should be asked to list one thing learned from CE that you have put into practice.

NO SPECIFIC ACTIONS REQUIRED SINCE A COMMITTEE ALREADY EXISTS. COMMITTEE AND BOARD APPRECIATE GUIDANCE AND DISCUSSION.

III. Specialization in Pharmacy

The group discussed the BPS petition on Clinical Pharmacy as a specialty. The BPS came into existence in the 1960s. They have developed 7 criteria for recognition of specialty practice in pharmacy. Nuclear pharmacy is the only recognized specialty.

The Florida Board of Pharmacy licenses pharmacists AND consultant pharmacists. Some states license hospital pharmacists separately. Certification is needed as a (surrogate) designation or recognition of specialization. Certification should be through examination and specialized continuing education. CE is needed to assist pharmacists in attaining "board certification". Boards of pharmacy should continue to grant licenses. Other groups (like BPS) should offer certification.

Several members of the group expressed concern over the continued use of the term "Clinical Pharmacist", stating that it turns people off, and it's time we found a new term.

NO SPECIFIC ACTIONS NEEDED.

IV. Impaired Pharmacists

Dennis Moore is chairman of the joint NCSHP/NCPhA program for impaired pharmacists. The committee should consider

changing the name of the program to something with a more positive connotation, e.g., Pharmacists Assisting Pharmacists, or PHARM-ASSIST.

KEY QUESTIONS INCLUDE; WHERE IS THE PROGRAM? WHERE IS THE PROGRAM GOING? It was noted that the program **is** active.

There remains some question of liability in cases (e.g.) when a member of the joint committee approaches a pharmacist who claims **not** to be impaired. Al Mebane has brought Virginia's liablity law to the attention of Joe Whitehead.

A member mentioned that the nursing profession tends to revoke a license rather than rehabilitate. Some feel that our joint program may serve as a prototype in NC for serving other impaired professionals.

In June (each year) there is a one week program offered by the University of Utah School of Alcoholism and Other Drug Dependencies. D. Teat has attended and rates it very high.

The Socioeconomic Seminar in April deals with this subject.

Kathy D'Achille has consulted with the UNC School of Pharmacy, and prepared a video tape and participant's work guide on the impairment problem.

Employee's AND employers need support systems in attempting to deal with the issue of impairment.

ACTION: BETTY DENNIS WILL WORK WITH DAN TEAT TO DEVELOP C.E.

V. Recruiting Pharmacy Students in High School

George Cocolas showed a video tape (film) to be used as a recruitment and teaching tool. It was well received. Prepared with SKF/GAPS grant. There is a possibility of doing something like this with the subject of "drug abuse."

VI. Manpower Report

Chris Rudd presented information from her survey, a report of which is to be published in the NCPhA journal.

Flexible scheduling is a problem. People do not want to work weekends and other "off" hours. There is increased pressure in some communities for pharmacists to work much longer hours. Outpatient clinics and "emergi-centers" are staying open longer.

There are about 1900 active pharmacy permits in NC today. There were several comments re the nature of pharmacy in 1997; more robotics, more clinical services, more informational and consultative roles. Pharmacy will be still more removed from a PRODUCT. One member noted that the proliferation of automatic teller machines does not seem to have decreased the number of tellers. Another member stated, "Pharmacy will exist as long as the public wants us to exist. One of our profession's biggest attractions to patients is our accessibility. We need to maintain close patient contact . . . COMMUNICATION."

We need to consider more ways to cut costs and provide more services.

There is much concern about the increased role and the number of technicians.

Pharmacy must convince (appeal to) several audiences: Patient, Payor, Legislator, Physician, Administrator, Pharmacist, and other health professionals.

Pharmacy must provide a product (service) that no one else provides.

Joe Whitehead suggested the need for a task force ("perhaps Pharmacy in NC in the year 2000") to deal with pertinent questions, perceptions, desired roles, etc. and report back to this forum in 1988. There is a need to recognize and assess patient needs **AND** to increase public awareness of pharmacy services. (See Action below). Bill Edmundson noted that the pharmacy industry/profession project in Florida was an outgrowth of the Pharmacy vs Industry battle over the issue of generic substitution. It might be useful to also cultivate awareness in NC on the role of pharmaceuticals in health care. Tapes, PSAs, books and brochures are available. Use resources of the National Council on Patient Information and Education (NCPIE).

Other members noted:

"There is a 25% illiteracy problem in NC. A fact that dictates more patient counselling."

"There is a need to focus on caring for geriatric patients."

"Pharmacists have a role (opportunity) to deal with the big problems for noncompliance and adverse reactions."

"Who is willing to pay the pharmacist for this intervention service? Pharmacists have always been looked on as providing free advice."

ACTION: THE GROUP (BOARD) IMPANELED A TASK FORCE ON PHARMACY TO COLLECT, FORMU-

Continued on page 13

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As a result, Marion is currently working with state and national pharmacy organizations to provide information about the success of our reimbursement program so that they may benefit from our experience when negotiating with third-party insurers.

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LEADERS FORUM

Continued from page 11

LATE AND DISSEMINATE MATERIAL RELATING TO PHARMACY WITH A GOAL OF EDUCATING THE PUBLIC, AND OTHER PROFESSIONS AND PAYORS ABOUT THE ROLE OF PHARMACISTS IN HEALTH CARE. (See attached memorandum from D. Work, February 9, 1987)

VII. Legislation

Keith Fearing reported that Mr. Virgil McBride was being considered as a possible NCPhA lobbyist. (Subsequent to the meeting he was appointed.) There is a potentially very strong lobbying effort in NC by Pharmacy. NCPhA is soliciting funds. PharmPAC CANNOT contribute to that fund, and cannot lobby. Members need to know the difference (re what PharmPAC can and cannot do).

NCSHP and NCPhA should invite local legislators to meetings. There is a need for a legislative or lobbying plan or program. Right now it appears to be undirected, disjointed. We need to know what kind of lobbying efforts we can be effective at. Our lobbyist needs to be in Raleigh to **scope** seemingly insignificant and unrelated bills. NCPhA issues include drug samples (more a national issue), physician dispensing (national) and patient freedom of choice, registration of suppliers and manufacturers, "pass throughs", and increase in examination expense.

NO SPECIFIC ACTIONS REQUIRED.

VIII. Physician Dispensing

This item was discussed within the content of several other agenda items.

Attempted "stumbling blocks" in other states have been torn down. Recent FTC rulings (advice) in Maryland and Georgia have been particularly disturbing. Pharmacy may not be able to prevent this from happening, but may find a way to control MD dispensing by requiring the same labeling and record keeping as of pharmacists. Such control could only occur by pharmacy working cooperatively with the medical societies.

Pharmacy should try to present arguments in a nonconfrontational way. If physicians are to dispense, they should do so in a way that is in the patient's best interest.

If the Board of Pharmacy granted permits to dispensing physicians, they could possibly regulate this activity. How to enforce? Would rules and regs have to come as part of the medical practice act? It seems that the Board of Pharmacy now has no power (authority) over physician dispensing.

Freedom of choice is an important issue if the physician does not give the patient a prescription.

NO SPECIFIC ACTION TAKEN.

IX. Pharmacist Prescribing

Essentially a dead issue.

Not considered to be an equal trade with "physician dispensing." The experiment in Florida has not been a huge success. The formulary is very limited.

NO ACTION TAKEN.

X. Prescriptions by Mail

2% of prescriptions filled in the US are now filled by mail. The AARP lobby is very strong. Arguments of cost-effectiveness are very strong. (One study showed pharmacist dispensing is 5% cheaper.)

This is a particular problem in light of the problem of functional illiteracy in the US (and esp in NC).

The public must be educated. Ads should show dangers and problems. Pharmacists should document the incidence of problems (damages). APhA apparently feels that legislation is more likely at the state level. Use NCPIE (Paul Rogers, Executive Director).

If it is a public health problem, it should be brought to the attention of the Attorney General. Is it possible to take legal action (legislation) to prevent employers from requiring employees to use mail order services? Some major employers require this.

The Board of Pharmacy has had a problem with jurisdiction.

NACDS and NARD issued a joint statement of major concern.

NO ACTION TAKEN.

XI. Campbell University

Ron Maddox presented a report form Campbell (attached).

Dan Teat mentioned that as a CE provider, CU is anxious to sponsor and cosponsor CE

Continued on page 14

LEADERS FORUM

Continued from page 13

programs with other groups. CU plans to work with other schools of pharmacy in neighboring states.

Keith Fearing stated that 100% of CU pharmacy students are members of NCPhA.

NO ACTION TAKEN.

XII. UNC

George Cocolas presented the UNC report.

There are 501 undergraduate students, 65% (326) of whom are female. The graduating class will be about 155. There are 24 PharmD students, 75 graduate students and 50 FTE faculty. The applicant pool is increasing.

The school is trying to stimulate minority student interest in pharmacy. About 50% of present students made their decision re pharmacy in high school.

The Pharmacy Policy Research Laboratory is attempting to assemble NC data for individuals and businesses.

The new computer lab is now open.

Betty Dennis thanked the Board for mailing the school's CE calendar. She reminded the group of the May conference on "Strategies for Continuing Professional Competence."

NO ACTION TAKEN.

XIII. Home Health Care Regulations

Some other states have laws and regulations pertaining to home care and home care pharmacy services. The issue is potentially similar to that of mail order prescriptions. The Board should develop regulations to protect the public.

Representatives of the home care industry have expressed the desire and willingness to work on this within the framework of laws and regs.

Concern was expressed about home care providers from out of state. The group was cautioned re potential antitrust issues.

The Department of Medical Assistance (Medicaid) is concerned about who is reimbursed and how the activity is regulated.

Texas developed an addendum to their Pharmacy Practice Act. The Board of Pharmacy has the statutory authority to do this.

NO SPECIFIC ACTIONS WERE TAKEN.

XIV. Third Party Regulations

B. Rideout led much of this discussion. CIP and PIP proposals will probably not work. The number of MAC drugs will probably increase. The federal government has been trying to do something about this for more than three years without much success. The issue involves more than Medicaid.

We will probably see an increase in the use of plastic cards for this and similar programs.

DMA will continue to investigate (step up?) pharmacies re the amount they bill Medicaid and the amount they accept as usual and customary from other third party payors. Pharmacy hurts pharmacy by accepting fees that are lower than what Medicaid allows.

The consensus amoung the group seemed to be that B. Rideout and DMA should be strict about this. DMA has provided the mechanism, but is surprised that pharmacists have taken the risky strategy of accepting lower fees from some third party programs, and higher fees from Medicaid.

NO SPECIFIC ACTIONS.

XV. Penalty for Steroid Possession

There is significant concern about the illegal use of steroids. Ads in weight lifting magazines, and the availability of some products in health food stores are a sign of the nature of the problem. The USFDA may work through the NCFDA (Bob Gordon) in such matters.

Some members felt human growth hormone could be classified as a controlled substance during the next year.

NO SPECIFIC ACTIONS.

Campbell University School of Pharmacy February 1987

Students:
Charter Class — 53 students
54% females
3.2 GPA
90% N.C. Residents
55 Prepharmacy students at Campbell

Faculty:
Currently 9 — projected 26
Ronald W. Maddox, Pharm.D.
Area of Interest: Cardiology
Harry Rosenberg, Pharm.D., Ph.D.
Area of Interest: Biochemistry
Thomas Wiser, Pharm.D.
Area of Interest: Ambulatory Medicine
Daniel W. Teat, Pharm.D.

Area of Interest: Emergency Medicine
Paula Thompson, M.S.
Area of Interest: Physiology
Steve Weaver, M.L.S.
Area of Interest: Library Science
Edward E. Soltis, Ph.D.
Area of Interest: Pathophysiology
Alan Richards, Ph.D.
Area of Interest: Immunology
Robert Greenwood, Ph.D.
Area of Interest: Pharmaceutics

Advancement:
We have had over $250,000 in equipment and funds donated to the School of Pharmacy. The following companies have made major contributions: Rite Aid Corporation, Dupont, Hoechst-Roussel, Glaxo, Burroughs Wellcome

C. E. Provider:
We were approved as a provider of continuing education by ACPE at their January meeting. Dr. Teat will discuss.

MEMORANDUM

To: Leaders Forum Attendees
FROM: D.R. Work
DATE: February 9, 1987
SUBJECT: Task Force on Pharmacy

One of the main products of our meeting this past weekend was the formation of a Task Force on Pharmacy which consists of representatives from the various groups which attended the Forum. President Moose issued a charge to the Task Force to collect, formulate and disseminate material relating to Pharmacy with a goal of educating the public, other professions and payors about the role of pharmacists in health care.

Members of this Task Force are: Ronald W. Maddox, Chairman, Dean, School of Pharmacy, Campbell University; Joe Whitehead, Director of Government Affairs, Burroughs Wellcome; Frances Gualtieri, NCMH; Keith Elmore, Bellamy Drug; Betty Dennis, Director of Continuing Education, UNC School of Pharmacy; Chris Rudd, Assistant Director, Poison Control Center, Duke University Medical Center; Bill Randall, Lafayette Drug, Lillington & Member, Board of Pharmacy; Al Lockamy, NCPhA Officer and Revco Pharmacist; William Whitaker Moose, Moose Drug, Mt. Pleasant & Board of Pharmacy Member

This Task Force is to pursue its charge and report back to the Leaders Forum at the next meeting. Members of the Forum expect that this effort will produce a better understanding of the merits of pharmacy services by everyone involved with health care.

LIST OF ATTENDEES

Representing North Carolina Board of Pharmacy

William R. Adams, Jr.
PO Box 3161
Wilson, NC 27895
Member

Harold V. Day
Day's Drug
309 Oak Avenue
Spruce Pine, NC 28777
Member

Wm. Whitaker Moose
Moose Drugs
PO Box 67
Mt. Pleasant, NC 28124
President

William H. Randall, Jr.
Lafayette Drugs
PO Box 999
Lillington, NC 27546
Member

Joseph B. Roberts, III
PO Box 2335
Gastonia, NC 28053
Public Member, Attorney
Vice President

David R. Work
PO Box H
Carrboro, NC 27510
Executive Director

Representing the UNC School of Pharmacy

Steve Caiola, Pharmacy AHEC Director
George Cocolas, Associate Dean
Betty Dennis, Director of Continuing Education
Wayne Pittman, Associate Professor

Beard Hall 200H
Chapel Hill, NC 27514; 919/966-1121

Representing the North Carolina Pharmaceutical Association (1-800-852-7343)

Keith Fearing, President
Al Lockamy, NCPhA Officer & Revco Pharmacist

Continued on page 17

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LEADERS FORUM

Continued from page 15

Al Mebane, Executive Director, PO Box 151, Chapel Hill, NC 27514; 919-967-2237
Julian Upchurch, NCPhA Officer & Upchurch Drugs

Representing Chains

Ron Fulmer, Eckerd Drugs; Pharmacy Professional Services & Operations Manager; 704-371-8243
Jimmy Jackson, Kerr Drugs, Raleigh; 919/872-5710

Representing Hospitals

Steve Dedrick, Duke University Medical Center; 919-681-2414
Fred Eckel, Head-Division of Pharmacy Practice, UNC School of Pharmacy 919/966-1121
Tom Hughes, Director of Pharmacy, North Carolina Memorial Hospital, Chapel Hill; 919/966-2374
Pam Joyner, NCSHP Officer & Wake AHEC
Chris Rudd, Assistant Director, Poison Control Center, Duke University Medical Center

Representing Campbell University School of Pharmacy

Ronald W. Maddox, Dean
Daniel Teat, Director of Admissions & Continuing Education
Tom Wiser, Chairman-Department of Pharmacy Practice

Buies Creek, NC 27506; 919-893-4111

Representing Wholesalers

Keith Elmore, Bellamy Drug, Wilmington; 799-3320
Rusty Hamrick, Kendall Drugs, Shelby; 704/482-2841

Representing Manufacturers

Bill Edmondson, Vice President-Government Affairs, Glaxo, Inc, RTP; 919-248-2295
Joe Whitehead, Director of Government Affairs, Burroughs Wellcome Company, RTP; 919-248-4459

Other

Benny Rideout, Medicaid Drug Program, Dept. of Human Resources, Raleigh; 919-733-2833
Ginger Lockamy, Pharmacist

Report submitted by Tom Hughes, President, NCSHP, February 27, 1987

UPJOHN EXECUTIVES PRESENT CHECK TO CAMPBELL — Officials of the Upjohn Company recently made a check presentation to the Campbell University School of Pharmacy. Pictured at the presentation are (l. to r.) J. T. Mathis, pharmacy sciences liaison; Jimmy Jordan, director, Pharmaceutical Sales; DeLacy Luke, district manager; Dr. Norman A. Wiggins, president of Campbell University; Dr. Ron Maddox, dean of the School of Pharmacy at Campbell; and Vincent Candela, pharmacy relations manager.

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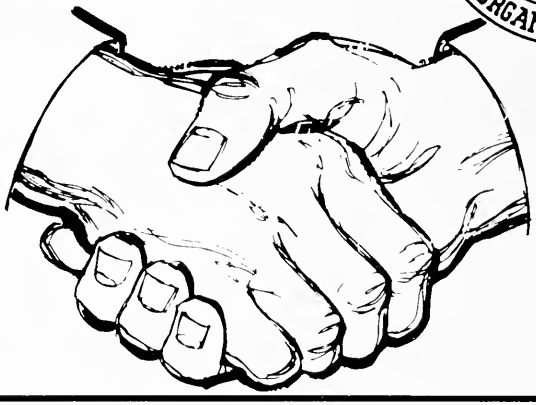

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FORMER "UNDERCOVER" PHARMACIST RECEIVES NATIONAL AWARD

David Wheaton Hall — a pharmacist whose undercover activities for drug enforcement authorities led to the 1985 convictions of seven medical doctors, five medical clinic owners, three independent drug dealers and a pharmacy owner — was presented with the 1987 American Society for Pharmacy Law President's Award. The award, sponsored by Merrell Dow Pharmaceuticals Inc., recognizes an individual who has made a significant contribution to the legal system in relation to the practice of pharmacy.

Hall spent approximately one year as a civilian turned undercover operative in a two-year state and federal investigation of prescription drug trafficking in the Los Angeles area, where he worked as a pharmacist during 1983. Government agents involved in the investigation credit Hall for the "sting" operation that resulted in the filing of criminal and civil charges against 34 people.

The investigation involved officials from the U.S. Drug Enforcement Administration, the Bureau of Narcotic Enforcement in the California Attorney General's office, and the California Board of Pharmacy.

The investigation has resulted in the largest number of doctors and pharmacists simultaneously indicted for illegal diversion of drugs in the history of drug enforcement.

"Hall came forward and literally put himself out there working on our behalf," California Attorney General John K. Van de Kamp said at the time of the arrests. "It was a tremendous sacrifice in regard to his time and a tremendous public service."

A native of Seattle, Washington, Hall earned a bachelor's degree in Pharmacy from Idaho State College. Throughout various periods, he owned and operated two pharmacies in small California towns, in one of which he served terms as president and member of the local school board. Hall also served as board member and president of the Fresno-Madera Regional Occupational Program, and received two community service awards.

Presenting the award are Jack R. Statler (left), Manager of Professional Relations for Merrell Dow Pharmaceuticals Inc., and David B. Brushwood (right), ASPL President.

CORRESPONDENCE COURSE

ADVISING CONSUMERS ON OTC VAGINAL DOUCHE PRODUCTS

by Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University, Ada, OH
and
J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati, Cincinnati, OH

Goals

The goals of this lesson are to:

1. outline the FDA/OTC advisory panel's recommendations on douching solution ingredients and douching equipment;
2. explain the factors involved in maintaining a healthy vaginal tract;
3. outline the proper method for douching.

Objectives

At the completion of this lesson, the successful participant will be able to:

1. explain the relationship of various factors important for maintaining a healthy vaginal environment;
2. cite specific recommendations of the FDA/OTC advisory panel that reviewed data on the safety and effectiveness of OTC douching ingredients;
3. exhibit an understanding of the various methods for using a douche solution;
4. differentiate between drug and cosmetic claims for OTC douche ingredients;
5. specify potential dangers involved with douching during pregnancy.

Over-the-counter douche products are big business in the U.S. Sales of solutions and powders for making solutions to rinse the vaginal tract were reported to be nearly $20,600,000 during 1983. Various surveys state that over one-half of all American women douche regularly. While some douche products are intended to be used solely for cosmetic purposes, others are indicated for therapeutic purposes.

Although many women douche regularly, factual information on the correct procedure is difficult to find. Few articles have appeared in the medical/pharmaceutical literature or consumer magazines that illustrate the proper method for douching.

Whether or not a woman should douche in the first place, and the correct procedure to follow when it is indicated are the topics of this month's lesson. Additionally, the recommendations of an FDA advisory panel that reviewed OTC vaginal drug products are presented.

Vaginal Physiology

The normal pH range of vaginal fluids is 3.0 to 5.5 during the reproductive years. Fluctuations are normal and coincide with various phases of the menstrual cycle. For example, the pH is less acidic around ovulation and during menstruation than at other times.

The pH of the vaginal tract is controlled, in part, by the indigenous microflora which consist of numerous microorganisms including cocci, coliform, diphtheroids, anaerobes, fungi, lactobacilli, and trichomonads. Acidity is maintained by bacteria, notably the lactobacilli which

This continuing education for Pharmacy article is provided through a grant from MERRELL DOW PHARMACEUTICALS INC.

produce lactic acid. They do this by converting glycogen contained in vaginal epithelial cells to lactic acid. An acidic media is necessary for the preservation of normal growth of the vaginal flora and to confer some protection against overgrowth and invasion by pathogenic microorganisms.

At times, certain microorganisms may overgrow and cause infections resulting in vaginal odor, discharge, and irritation. Since so many different microorganisms normally inhabit the vagina, it is difficult to casually determine which one is responsible when these symptoms are present. Thus, it is also difficult to assess which therapy, if any, is best.

Another important point about the vaginal lining is that many drugs can be absorbed through it into the general circulation. The amount absorbed may be sufficient to cause toxicity to the woman, or to her fetus if she is pregnant.

Vaginal Douches

The term "douche" means to cleanse. Therefore, a **vaginal douche** is a liquid preparation used to irrigate the vaginal tract. It is intended for one or more of the following purposes: 1. cleansing, 2. producing a soothing or "refreshing" sensation, 3. deodorizing, 4. relieving minor irritations, 5. reducing the number of pathogenic microorganisms, 6. altering the pH to encourage growth of normal bacterial flora, 7. causing an astringent effect, 8. lowering the surface tension, 9. inducing a mucolytic effect, and 10. producing a proteolytic effect. **Vaginal suppositories** are used for the same purposes.

Certain applications of vaginal douches and suppositories may be more cosmetic than medicinal. Since the Food, Drug and Cosmetic Act specifically defines drugs as ". . . articles intended for the use in the diagnosis, cure, mitigation, treatment, or prevention of disease," most of the uses for vaginal products are intended for drug use, rather than cosmetic application.

The classification of whether a product is a drug or cosmetic is dependent to a great extent on the nature and concentration of its ingredients. If an ingredient is present in a therapeutic concentration, even though no therapeutic claims are made, the product is classed as a drug. The FDA advisory panel that reviewed vaginal products concluded that uses 1–3 listed above are cosmetic rather than therapeutic claims. Therefore, vaginal products making only these claims are not required to undergo rigid scientific testing to prove their effectiveness.

When the term "deodorant" is used in conjunction with a douche product, the panel advised that it should be labeled to state the mode of action of the deodorant. A deodorant may be effective in reducing offensive odors because it: 1. removes vaginal secretions, seminal fluid, and contraceptive products from the vagina, 2. decreases the number of microorganisms that cause odors, or 3. masks offensive odors. The panel stated that OTC douche products do not actually destroy odors, but diminish a person's perception to them. So the designation "destroys odor" cannot be used on the labeling of these products.

Douching Techniques

Douching must be properly performed to maximize benefits and minimize risks of damage to the vaginal tissue. The vagina is lined with a mucous membrane that is highly susceptible to irritation. This membrane is actually an extension of the internal reproductive organs (i.e., uterus and fallopian tubes) and the abdominal cavity. The blood supply and lymphatic drainage system are shared by all these sites. Improper douching techniques and equipment may directly injure the vagina and introduce pathogenic microorganisms which can cause upper reproductive tract or abdominal infection. Some reproductive tract infections can result in sterility.

Currently there are no data to prove that routine douching is necessary for a normal, healthy woman. At the same time, there is no contraindication for the procedure in these women as long as they are pregnant.

Some manufacturers advise against douching more frequently than twice a week. However, there are no definitive toxicity data that support this restriction. The frequency of douching does not appear to exert an adverse effect on the vaginal flora, cause vaginitis, or produce injury resulting from excessive dryness of the vaginal mucosa. The FDA advisory panel recommended against any restriction on the frequency of douching with OTC products.

Douching may cause pain, redness, swelling or itching within the vagina due to sensitivity to one or more of the product's ingredients. Vaginal or abdominal pain may also be indicative of improper use of douches, excessively hot solutions, or presence of a serious pathologic disorder in the pelvic region.

Continued on page 23

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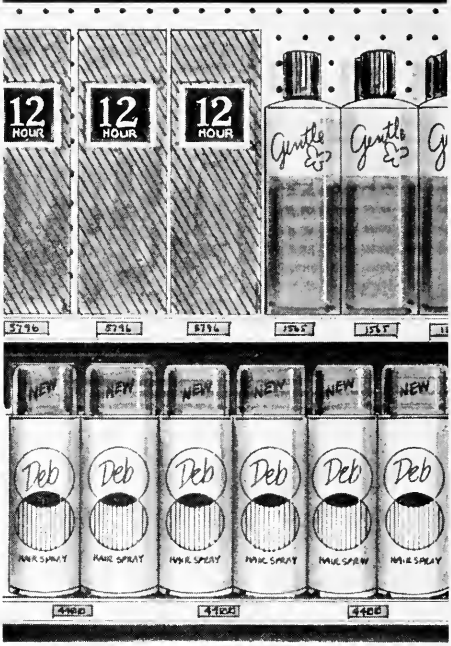

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CORRESPONDENCE COURSE

Continued from page 21

Some product labeling directs that the douche solution be instilled into the vagina with the vaginal opening occluded around the douche tip until a sensation of fullness is felt. There are numerous reports in the literature that warn against any procedure which occludes fluid outflow because the fluid may enter the uterus and fallopian tubes. Therefore, vaginal occlusion, or using a high intravaginal hydrostatic douching pressure (explained later) is potentially dangerous and should be discouraged. One report confirmed that 90% of women with salpingitis (inflammation of the fallopian tubes) or pelvic inflammatory disease douched frequently, whereas the condition appeared only half as often in women who did not douche.

Douching During Pregnancy. There are no data to substantiate the safety of douching during pregnancy. One survey of 510 pregnant women indicated that 12% of them continued to douche, with no harmful effects to mother or child.

However, the procedure is not without danger. During pregnancy, the uterine vasculature is increased. This large blood supply increases the woman's risk for vascular problems and systemic absorption of drugs. There are reports of fatal embolism following vaginal insufflation with powders and with air forcefully blown into the vagina. Soap and disinfectant solutions have also led to fatal intravascular hemolysis following attempts at self-induced abortion. Complications such as severe bleeding due to placental detachment, rupture of the chorionic membrane, or introduction of microorganisms have been recorded. As mentioned earlier, the fetus may also absorb chemicals which can produce deleterious effects.

The bottom line is that the risks of douching during pregnancy outweight any possible benefits. Unless a physician specifically directs it, douching during this period should be avoided.

Ingredients Of OTC Douching Solutions

The FDA Advisory Review Panel on OTC Contraceptives and Other Vaginal Drug Products reviewed the ingredients listed in Table 1 and assigned the classifications shown. A brief review of important findings follows.

Calcium and Sodium Propionate. The panel found these salts to be safe and effective in concentrations up to 20% for use in vaginal drug products claimed to relieve minor vaginal irritation. The panel also noted that propionates are safe and effective for physician-supervised treatment of infections caused by *Candida albicans.* But FDA responded that there was too much consumer uncertainty about the use of drug products to self-treat vaginal irritation that could be caused by this organism. Because calcium and sodium propionate salts have not previously been available except on prescription, they may not be marketed OTC until further studies are conducted to prove their safe use without direct physician supervision.

Potassium Sorbate. According to the advisory panel, potassium sorbate is safe and effective in concentrations of 1% to 3% for self-medication of minor vaginal irritation. It has demonstrated significant beneficial activity in treating various yeast infections. However, as with calcium and sodium propionates, FDA indicated that further studies on self-medication are needed.

Povidone-iodine. The panel concluded that povidone-iodine in a concentration of 0.15% to 0.3% is safe and effective to relieve minor vaginal irritation. Povidone-iodine has shown little local or systemic toxicity, and few sensitivity reactions. It can be absorbed and cause an increase in the serum protein-bound iodine level, but this has no significant effect on thyroid activity. However, several citations suggest possible mutagenic and carcinogenic actions. Povidone-iodine can modify the DNA structure of both bacterial and animal cells. But the few studies that report these actions are inconclusive. The panel, therefore, placed little significance on them. FDA agreed, but indicated it would continue to monitor safety reports on the drug for possible future action.

Anionic Surface Active Agents (docusate sodium, sodium lauryl sulfate). Used in concentrations of 0.002% and 0.02% respectively, docusate sodium and sodium lauryl sulfate are considered to be safe and effective for self use to produce a mucolytic action on vaginal fluids. These agents also lyse trichomonads and bacteria, and are used in prescription products for treating *Trichomonas vaginalis.* However, this claim cannot be made for OTC products since FDA believes that treatment of vaginal infections requires physician intervention.

Nonionic Surface Agents (nonoxynol 9 and octoxynol 9). These are safe and effective in concentrations of 0.0176% and 0.088%

Continued on page 25

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TABLE 1
FDA Classifications of Active Ingredients of Vaginal Products

ACTIVE INGREDIENT	RELIEF OF MINOR IRRITATION	ALTERS pH	ASTRINGENT	LOWER SURFACE TENSION AND MUCOLYTIC
Acetic acid		III(E)		III(E)
Alkyl aryl sulfonate				III(E)
Allantoin	III(E)			
Aloe Vera, stabilized	III(E)			
Alum			III(E)	
Benzalkonium chloride	III(S,E)			
Benzethonium chloride	III(S,E)			
Benzocaine	III(E)			
Boric acid	III(S,E)	III(S,E)	III(S,E)	III(S,E)
Boroglycerin	III(S,E)	III(S,E)	III(S,E)	III(S,E)
Calcium and sodium propionate*	I			
Citric acid		III(E)		
Docustate**				I
Edetate disodium	III(S,E)			
Edetate sodium	III(S,E)			
Hexachlorophene	II			
Lactic acid		III(E)		
Nonoxynol 9	III(E)			I
Octoxynol 9	III(E)			I
Papain				
Oxyquinoline citrate	III(S,E)			
Oxyquinoline sulfate	III(S,E)			
Phenol	II			III(E)
Phenolate	II			
Potassium sorbate*	I			
Povidone-iodine	I			
Sodium bicarbonate		III(E)		
Sodium borate	III(S,E)	III(S,E)	III(S,E)	III(S,E)
Sodium carbonate		III(S,E)		
Sodium lactate		III(E)		
Sodium lauryl sulfate				I
Sodium perborate	III(S,E)	III(S,E)	III(S,E)	III(S,E)
Sodium salicylate	II			
Sodium salicylic acid phenolate	II			
Tartaric acid		III(E)		
Zinc sulfate			III(E)	

*FDA will not allow marketing in OTC products at this time.
**Dioctyl sodium sulfosuccinate
Category I: safe and effective for OTC use; Category II: neither safe nor effective for OTC use; Category III: safe and or effectiveness for OTC use not yet established
(E) — safety established, effectiveness in question
(S,E) — both safety and effectiveness need to be established

CORRESPONDENCE COURSE

Continued from page 23

respectively for use in vaginal douches to produce a mucolytic action. In larger concentrations, nonoxynol 9 and octoxynol 9 are also safe and effective spermicides.

Unproven Ingredients And Claims

Treatment of Minor Irritations. The ingredients in Table 1 designated as "Category III" have been used in vaginal preparations for the specific actions shown. Some have been proven safe. Others have questionable safety. None has been proven effective for the specific indication(s) listed.

Manufacturers may conduct the clinical studies necessary to establish effectiveness of these ingredients until FDA promulgates its final "official" monograph on a particular drug group. If safety or effectiveness cannot be established by that time, these substances will not be permitted as active ingredients of OTC products, nor will their manufacturers be allowed to make the listed claims.

Allantoin has a long history of medical use. Its medicinal properties were discovered during World War I when it was noticed that maggot-infested wounds healed more quickly than noninfested wounds. Maggots produce a considerable amount of allantoin.

Allantoin has been used for years in many topical products and there are no specific toxicity problems documented. It has also been found by other FDA/OTC advisory panels to be safe for use on injured skin and on the oral mucosa.

Aloe is another interesting substance. Leaves of the aloe vera plant can be cut and squeezed to obtain an exudate. The exudate is not stable in air, and deteriorates within several hours. However, the commercially available forms are claimed by manufacturers to be stable.

The OTC panel reviewed more than 100 reports describing vaginal application of aloe vera. While no report cited specific toxicities,

none of them substantiated proof of effectiveness either.

Quaternary ammonium compounds (benzalkonium Cl and benzethonium Cl) have been employed for a number of uses over the years. However, a critical assessment of the literature casts doubt on their safety and effectiveness for use in vaginal douche products.

There are no clinical studies dealing specifically with safety of using **benzocaine** on the vaginal mucosa. However, this local anesthetic has a long history of safe use on other mucous membrances. The advisory panel thereby concluded that benzocaine was also safe for vaginal use. While its effectiveness for alleviating vaginal irritation can be inferred from its use on other mucous membranes, such action will nevertheless require substantiation by studies using it on vaginal tissue.

Boron compounds (boric acid, boroglycerine, sodium borate, sodium perborate) have been instilled into various body cavities and applied topically for antiseptic uses for over a century. Boric acid has mild astringent action so it has also been used for its anti-inflammatory and antipruritic actions. There is insufficient evidence to establish that boron compounds are actually effective for these uses.

The safety of these compounds is also questionable. Reports of poisonings from boric acid resulting from ingestion, application of ointments and powder, and irrigation of closed body surfaces confirm the potential for toxicity. The review panel looked specifically for toxicity related to use in the vagina. In one review, three cases of boric acid intoxication following application were cited. But the studies were poorly conducted, and their outcomes were considered unreliable.

Edetate salts (edetate disodium, edetate sodium - EDTA) are thought to act on vaginal microorganisms by binding with calcium on their surface, thus interfering with metabolism and leading to their death. However, edetate salts also chelate other essential metal ions such as zinc from vaginal tissues. As a result, the panel felt they might be injurious. The panel suggested that edetate salts be limited to 4.4% concentration, and that they continue to be tested both for safety and effectiveness before a final ruling is made.

Nonoxynol 9 and octoxynol 9 are safe and effective mucolytics and spermicides, but there are insufficient data to show they are effective in relieving minor vaginal irritation. The drugs have been noted to reduce the number of pathogenic vaginal microorganisms such as *Trichomonas vaginalis,* but the data are inadequate to substantiate use in OTC products.

Oxyquinoline compounds (oxyquinoline citrate and sulfate) have been used for over 50 years to treat gonorrhea and other vaginal infections. The compounds form complexes with essential metal ions of microbes such as zinc and copper, and this is presumed to be their mechanism of action.

There have been no specific notations of adverse effects. However, animal studies have suggested possible carcinogenic activity. Because of a lack of specific data to show both safety and effectiveness, the panel recommended that further studies on oxyquinoline be initiated.

Agents that alter vaginal pH. A douching solution can change and maintain the pH of the vaginal fluids only as long as the solution remains inside the vagina. Within thirty minutes of cessation of douching with an acidic solution, the vaginal pH will return to its pre-douche level. In fact, it may become even more alkaline than before. This occurs because douching can remove glycogen, lactic acid, and other acids that normally maintain an acid environment.

Acetic acid, in a concentration of 4% to 6% when properly diluted, is safe when used in the vagina. Vinegar is approximately 5% acetic acid, and is also safe for intravaginal use when properly diluted (1.5 teaspoonfuls per quart of water). However, the data fail to show that it is effective in lowering the pH long enough to encourage growth of normal vaginal flora. Its use as a cleansing, "refreshing" douche is a cosmetic application. Therefore, this claim was not evaluated by the panel, nor is it affected by these regulations.

Other acids that are safe include **citric acid** (0.1% to 0.5%), **lactic acid** (0.4% to 1.3%), and **tartaric acid** (0.047%). However, none of these have yet been proven to be effective.

The alkaline substance, **sodium bicarbonate,** is safe in concentrations used in most douching solutions. The rationale for using it as a douche is presumably in its action to neutralize vaginal secretions. Such action is only temporary. Dilute solutions of baking soda labeled to produce a cleansing, "refreshing," or soothing effect are cosmetics rather than drugs.

Astringent Effects. Astringents are locally acting drugs that precipitate protein on the surface of cells. They cause constriction of

Continued on page 28

CORRESPONDENCE COURSE

Continued from page 27

mucous membranes, resulting in reduced local edema, inflammation, and exudation. Cellular permeability is altered, but the cell remains viable. **Alum** compounds in a concentration range of 0.037% to 0.06% and **zinc sulfate** in a concentration of 0.02% are safe. Neither has been proven effective. On the other hand, zinc sulfate in a conentration of 0.2% to 1.0% is an effective astringent, but has unproven safety for use in the vagina.

Alkyl aryl sulfonate, lactic acid, and **papain** are all safe for human use. None has undergone the testing needed to prove effectiveness in vaginally applied drug products.

Douching Equipment

The advisory panel reviewed douching equipment as well as drug products. It specifically warned against using any douching device with a nozzle that had a single, unshielded opening. This apparatus could force drugs or air into the uterus and fallopian tubes, and the abdominal cavity. The panel recommended that only nozzles with multiple openings be used. If a nozzle with a single opening is employed, the opening should be shielded so that the douche solution does not emerge in a steady, forceful stream. The panel also recommended that nozzles have a blunt end to minimize injuring the vaginal wall.

Some bulb-type syringes contain a device that occludes the vagina after insertion of the douching solution to prevent its drainage. The panel recommended against their use for the reasons expressed earlier.

Types of Douching Equipment. Two basic forms of douching equipment are available. The **douche bag** (fountain syringe or combination water bottle-fountain syringe) holds one to two quarts of fluid. It is supplied with tubing and a shut-off valve. The bag is suspended approximately two feet above the vagina and the fluid flow pressure is regulated by gravity. Increasing the distance of the bag above the vagina results in a greater hydrostatic pressure. The greatest height recommended is three feet.

The bag can also be used with a rectal tip to administer enemas. A rectal tip is shorter than a vaginal tip. It should not be used to administer douches because it has only a single, unshielded opening. The panel recommended that these nozzles be labeled for their respective uses to prevent consumer confusion, and it asked the industry to follow-up on this recommendation.

Bulb douche syringes hold eight to sixteen ounces of fluid. The nozzle is attached directly to the bulb and the flow rate is regulated by the amount of pressure exerted when squeezing the bulb. The currently marketed prepackaged disposable douche units are of this design, but hold three to nine ounces of fluid.

The advisory panel raised a question concerning the volume of douche solution needed. Douche volume usually ranges from 250 to 2000 ml, with the average quantity approximately 1000 ml. The disposable units deliver much less, and this may not be a sufficient quantity of fluid to remove cellular material from the vagina. The panel believed that these smaller volumes were adequate for cosmetic purposes, but when a therapeutic claim is made, the manufacturer must prove that the volume is sufficient to achieve the desired effect.

Patient Advice

Whether or not routine douching is beneficial is controversial. Some gynecologists believe that a normal, healthy vagina cleanses itself. Others state that if douching is done properly, it will help promote healthy vaginal tissues. One important fact is that douching will not prevent pregnancy.

Another controversial topic concerns precoital douching to influence the sex of the offspring. Reports since the early 1970's have claimed the X-bearing sperm (female determinant) is more resistant to acid destruction than the smaller, Y-bearing (male determinant) sperm. Since the cervical mucous is most alkaline immediately prior to, or at the time of ovulation, the theory is that conception at this time is likely to result in a male. Shortly after ovulation when the pH is more acidic, fertilization is more likely to result in a female offspring. If coitus were timed to coincide with periods more favorable to development of either male or female, the fetal sex might be influenced.

This viewpoint has been extended to employ acidic or alkaline (e.g., vinegar or sodium bicarbonate) douches precoitally to alter the pH and, therefore, facilitate the desired results. While some investigators have confirmed that the sex of the offspring can be affected in this manner, others have denied it. However, douching precoitally does not appear to detrimentally affect the health of the mother or fetus should conception occur.

Women should be sure they understand the correct procedure of douching. Table 2 provides

specific points to aid in consumer counseling. Table 3 lists representative OTC douche products. One key point is that the proper method of douching is perhaps more important than the formula used. For example, physicians usually recommend douching in a reclined position, with the knees flexed and the hips slightly raised. It has been reported that only 30% of women follow this advice. When sitting or standing, only the outer one-third or one-fourth of the vagina will be reached by the douching fluid, even if the nozzle is fully inserted.

It should also be kept in mind that the symptoms caused by a wide variety of vaginal disorders are similar. While many conditions are mild and of no serious consequence, others can be severe. Whenever symptoms are severe or persistent, or worsen when a douche is being used, a physician should be consulted.

TABLE 2
Consumer Information on OTC Douche Products

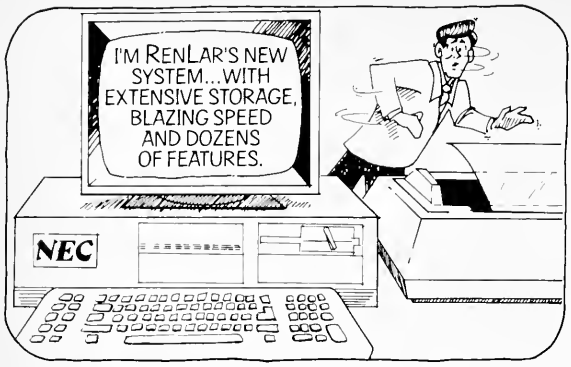
- Do not use this product if you are pregnant, except on the advice of and under the supervision of a physician.
- If minor irritation has not improved after one week of use, or if you notice development of redness, itching, swelling or pain in or around the vagina after douching, consult a physician.
- This product is not intended to be used for birth control. It does not prevent pregnancy.
- Mix solution thoroughly according to manufacturer's directions just before use.
- Rinse all equipment well after each use. Keep it clean and dry between uses.
- Keep this product out of the reach of children.

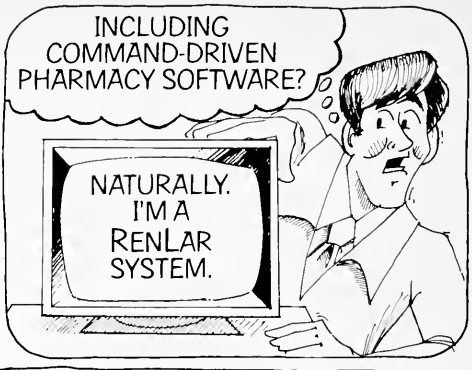
CE TEST ON P. 38

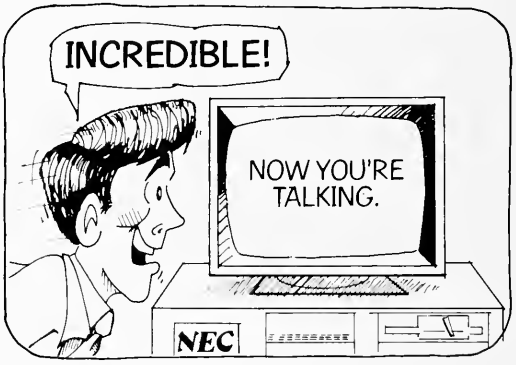
TABLE 3
Representative OTC Douch Products

Product	Form
Betadine	Solution
Betadine Medicated	Disposable solution
Dismiss	Disposable solution
Femidine	Solution
Feminique	Disposable solution*
Gentle Spray	Powder
Massengill	Powder
Massengill	Disposable solution*
Massengill Concentrate	Solution
Massengill Medicated	Disposable solution
New Freshness	Disposable solution
Nylmerate II Concentrate	Solution
Sorbex	Granules
Stomaseptine	Powder
Summer's Eve	Disposable solution*
Summer's Eve Medicated	Disposable solution
Trichotine	Powder
Trichotine	Solution
Trichotine-D	Powder
Triva	Powder
Vagisec	Solution
Vanite	Powder
Zonite Concentrate	Solution

*available with different ingredients







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DICKINSON'S PHARMACY

by Jim Dickinson

Pharmacy power. Sometimes, in the pharmacy you can be too close to the wood to see the trees.

Take dispensing physicians, for example. The pharmacy press will tell you it's the hottest issue around, with giant repackaging companies picking up physicians right, left and center.

That's true.

Then you'll read that the Federal Trade Commission is on *their* side, and pharmacy has its back to the wall — a matter of "grave concern," as the American Pharmaceutical Association puts it.

That's only a little bit true.

Dispensing physicians are so much of a menace — not just to pharmacy, but especially to the public as a whole — that this is a very winnable fight. And better yet, it will be an interesting fight, because of the weirdness of the forces that are lined up against pharmacy.

It's a fight that every pharmacist can pitch into, with relish.

The weirdest part of this is the FTC scenario. On two occasions, it has publicly spoken out against pharmacy efforts to make physician-dispensing illegal. In one, an FTC letter to the Maryland Board of Medical Examiners rendered an opinion that physician-dispensing is no more hazardous a practice than other medical practices, and that pharmacists often do not safety-check prescriptions. In another, the somewhat flaky, far-right Republican chairman of the FTC ("extremism in the pursuit of competition is no vice" [*apologies to Barry Goldwater, 1964*]) Daniel Oliver told the National Health Lawyers' Association in January that physician-dispensing is a "traditional aspect of medical practice" offering the consumer increased convenience and more-competitive prices.

These utterings have been widely misinterpreted in pharmacy as signaling: Throw-in-the-towel-unless-you-like-bleeding-to-death-in-battles-you-can't-win.

Nothing could be further from the truth!

As National Association of Retail Druggists executive vice president Charles M. West put it on February 9, the glint of fire in his usually quiet eyes: "We can turn FTC around on this, because it is right."

That same day, NARD and its arch-enemy, the National Association of Chain Drug Stores (!) joined forces in a vigorously worded news release saying they represented "virtually every retail pharmacy in the U.S.," they'd agreed on a single legislative strategy to protect the present system of medical checks and balances, and declaring that physician-dispensing "is not in the best interest of the public health, in part, because it denies the patient the advantage of a personal consulting relationship with a pharmacist."

This is where the ordinary, individual, most-respected-professional pharmacist comes in.

Hours before NARD and NACDS issued that joint statement, they had met with the FTC staff people responsible for fighting pharmacy moves to make physician-dispensing illegal or damn-near-impossible. Most significantly, they heard FTC Bureau of Competition acting assistant director Charles Corddry (write him at 6th and Pennsylvania Avenue N.W., Washington, D.C. 20580) claim, "we know pharmacists aren't consulting — we read their journals."

However, Corddry and other FTC staffers claim also their opinion to the Maryland Medical Examiners Board is being overplayed in pharmacy — the letter was not volunteered, but requested by the board; as such, it does not reflect deep FTC concern, or a commitment to campaign in favor of dispensing physicians.

FTC's real, internal, staff-level concern (as opposed to the high-flying rhetoric of its political game-players like Oliver) is whether state licensing boards of all kinds over-reach their real, legislated authorities. When a state board asks FTC for an opinion on something that might over-reach, FTC gives it. Period.

Deep down in their institutional memories, FTC, the U.S. Justice Department antitrust division, the American Medical Association, the pharmacy associations, and all the other organizations with a long-established stake in this issue, are pretty much agreed. Checks and balances in health care are like checks and balances in government — fundamental to the American way of life. Freedom of choice is preserved if patients aren't cut off by a prescriber's own conflict-of-interest.

Insurance companies increasingly require second opinions before elective medical expenses are undertaken. That's at least partly because the physician's judgment, alone, isn't sufficient.

Continued on page 33

DICKINSON'S PHARMACY

Continued from page 31

News item: "The state Attorney General's Office has charged five Michigan doctors with having their patients' tests done at a laboratory they partly owned. They are the first cases under a provision of the state Public Health Code that prohibits doctors, dentists and other health professionals from sending their patients to facilities in which the health professionals have a financial interest." (*Detroit Free Press*)

Then there is the decidedly seedy character of the people who are pressing physicians to get into this business. Many look like used-car salesmen types, glib of tongue and sleek of dress, who hire freshly minted pharmacists, out-of-work medicos and others at better-than-average salaries to exploit the financial worries of prescribers in an overcrowded, and worsening marketplace.

They know no more about health and checks and balances than they do about that little beauty that was only driven to church on Sunday mornings by a little old lady in Pasadena.

That's worrying the AMA, too. Their members are finding it harder to make a good living, and pharmaceuticals can offer them, according to the hucksters' brochures, $30,000 or more year income on the side. Not to be sneezed at!

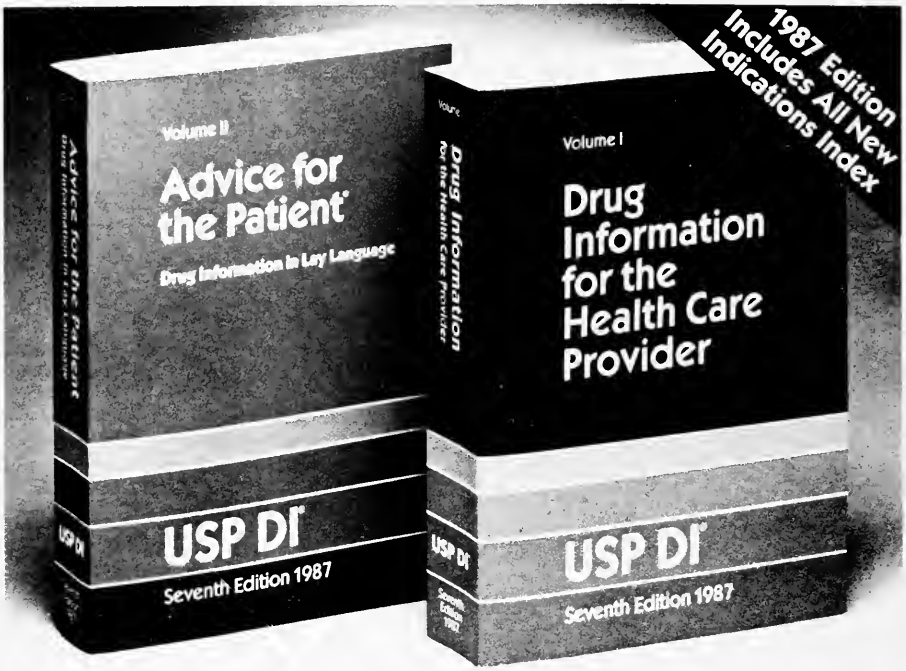
Nothing worth doing is easy. Pharmacists who try to regulate state bans on physician-dispensing will attract FTC and other scrutiny. But there's nothing wrong with trumpeting the checks-and-balances system (I have 50-sheet bagstuffer pads that do it, P.O. Box 848, Morgantown, WV 26507), and giving your patients the value-added medical care that comes from one-on-one consulting.

And lend your support to the pharmacy associations that are fighting this menace for you. We don't often get a "motherhood" issue like this one!

This feature is presented on a grant from G.D. Searle & Co. in the interests of promoting the open discussion of professional issues in pharmacy. G.D. Searle & Co., accepts no responsibility for the views expressed herein as they are those of the author and not necessarily those of G.D. Searle & Co.

(FOOTNOTE: You remember those letters we asked you to write to HHS Under Secretary Don Newman, R.Ph., about Medicaid discounts? It worked! Federal Medicaid has put discounts on the backburner.)

Pete T. Milliones, owner of Medical Center Pharmacy in Charlotte, is presented the Merck Sharp & Dohme Pharmacy Recognition Award by Keith Tinkham and Judoth Dellinger, Senior Professional Representatives of MSD, for continuous service to the community for 31 years. Milliones is a graduate of the University of South Carolina School of Pharmacy and was licensed in 1955.



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The Seventh Edition of *USP DI* is scheduled for publication in early March, 1987. Please allow 4–6 weeks for delivery from publication date.

Send Order to: **North Carolina Pharmaceutical Association**
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REVISED EDITION OF PATIENT GUIDE TO HIGH BLOOD PRESSURE MEDICINES PUBLISHED BY USP

About Your High Blood Pressures Medicines, a lay-language guide to medicines used to treat high blood pressure, has been published in a revised and updated edition.

The USP, a non-profit organization of health professionals working together in the public interest, publishes this consumer guide with the cooperation of the National High Blood Pressure Education Program of the National Institutes of Health in a move to encourage proper use of and compliance with the medicines used to treat hypertension. High blood pressure, or hypertension, afflicts more than 60 million Americans, yet only an estimated 5 million properly treat and control the condition.

About Your High Blood Pressure Medicines provides profiles of the medicines most frequently prescribed for hypertension, including thiazide diuretics, captopril, methyldopa and others. Each profile details the brand and generic names, the proper use of the medicine, precautions to consider, possible side effects, drug interactions, storage directions and notes information that should be considered before the drug is taken. The book is indexed by brand and generic names for easy reference.

Special chapters include a general introduction to the use of high blood pressure medicines and information on the importance of patient participation in treatment. It also discusses common misconceptions about high blood pressure. A "medication calendar" is included as an easy-to-use chart for recording daily medication doses. A wallet diary is provided for the patient to list his or her physician's name, appointment dates and prescribed medicines.

About Your Medicines is sold in an attractive display case to health care facilities, such as pharmacies for resale to consumers. Display cases of 12 copies may be purchased through the North Carolina Pharmaceutical Association.

HOSPITAL DISTRIBUTORS OF AMERICA ANNOUNCES NEW MEMBERS

The Board of Directors of Hospital Distributors of America (HDA), Meeting March 19, 1987, in New Orleans, announce the election of five additional wholesale drug ownerships to the hospital distribution network. The new members, operating eight divisions, are:

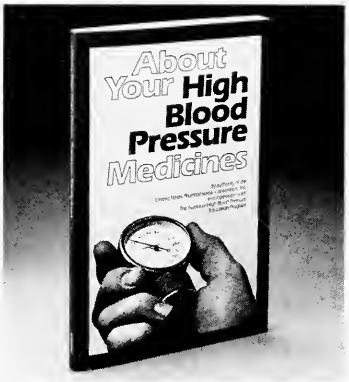
Gulf Distribution, Inc., Miami, FL

Humiston-Keeling Inc., Calumet City, IL; Grand Rapids, MI; Madison, WI

Dr. T.C. Smith Co., Inc., Asheville, NC; W.H. King Drug, Raleigh, NC

Ohio Valley/Clarksburg Drug Companies, Wheeling, WV

Smith Drug Company, Spartanburg, SC (Division of J M Smith Corporation)



According to Edward S. Albers, Jr., President, "The group was formed to provide hospital purchasing mega-groups with a unified distribution and data reporting system for their member hospitals who may be dispersed over a wider area than any one wholesaler prime vendor could serve. It is composed of respected, strong locally-owned regional wholesale drug distributors with substantial group hospital business and expertise. The new members enhance the network coverage with locations distributing to the majority of population served by the major hospital groups today."

James E. Kleinheinz, Vice President, added "HDA provides a network capability necessary for the independent wholesalers to compete with larger wholesalers with many divisions spread over wider regional or national areas. Also, the hospitals have the advantage of continuing to be served by their preferred local prime vendor who is linked with other HDA members supplying the rest of the mega-group. HDA then gives the hospitals, their groups, and the manufacturers an alternative to utilize local independent prime vendors who are linked together by the HDA

Continued on page 38

INTRODUCING NEW ONCE-DAILY

ISOPTIN® SR

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240 mg scored sustained-release tablets for hypertension

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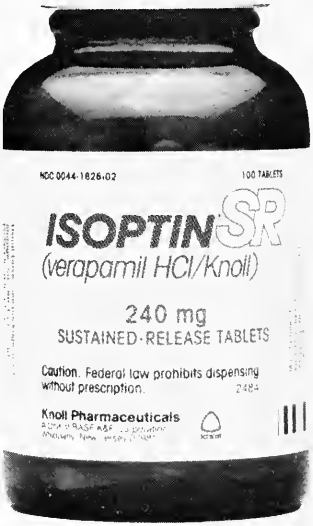

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Please see next page for brief summary.

NEW...ONCE DAILY IN MILD TO MODERATE HYPERTENSION

Brief Summary

ISOPTIN® SR (verapamil HCl/Knoll) 240 mg scored, sustained-release tablets

CONTRAINDICATIONS: 1) Severe left ventricular dysfunction (see WARNINGS), 2) Hypotension (less than 90 mmHg systolic pressure) or cardiogenic shock, 3) Sick sinus syndrome or 2nd or 3rd degree AV block (except in patients with a functioning artificial ventricular pacemaker).

WARNINGS: Heart Failure: ISOPTIN should be avoided in patients with severe left ventricular dysfunction (see DRUG INTERACTIONS). Patients with milder ventricular dysfunction should, if possible, be controlled before verapamil treatment. Hypotension: ISOPTIN (verapamil HCl) may produce occasional symptomatic hypotension. Elevated Liver Enzymes: Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Periodic monitoring of liver function in patients receiving verapamil is theretore prudent. Accessory Bypass Tract (Wolff-Parkinson-White): Patients with paroxysmal and/or chronic atrial flutter or atrial fibrillation and a coexisting accessory AV pathway have developed increased antegrade conduction across the accessory pathway producing a very rapid ventricular response or ventricular fibrillation after receiving intravenous verapamil. While this has not been reported with oral verapamil, it should be considered a potential risk. Treatment is usually D.C.-cardioversion. Atrioventricular Block: The effect of verapamil on AV conduction and the SA node may cause asymptomatic 1st degree AV block and transient bradycardia. Higher degrees of AV block, while infrequent (0.8%), may require a reduction in dosage or, in rare instances, discontinuation of verapamil HCl. Patients with Hypertrophic Cardiomyopathy (IHSS): Although verapamil has been used in the therapy of patients with IHSS, severe cardiovascular decompensation and death have been noted in this patient population.

PRECAUTIONS: Impaired Hepatic or Renal Function: Verapamil is highly metabolized by the liver with about 70% of an administered dose excreted in the urine. In patients with impaired hepatic or renal function verapamil should be administered cautiously and the patients monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacological effects (see OVERDOSAGE).

Drug Interactions: Beta Blockers: Concomitant use of ISOPTIN and oral beta-adrenergic blocking agents may be beneficial in certain patients with chronic stable angina or hypertension, but available information is not sufficient to predict with confidence the effects of concurrent treatment in patients with left ventricular dysfunction or cardiac conduction abnormalities. Digitalis: Clinical use of verapamil in digitalized patients has shown the combination to be well tolerated if digoxin doses are properly adjusted. However, chronic verapamil treatment increases serum digoxin levels by 50 to 75% during the first week of therapy and this can result in digitalis toxicity. Upon discontinuation of ISOPTIN (verapamil HCl), the patient should be reassessed to avoid underdigitalization. Antihypertensive Agents: Verapamil administered concomitantly with oral antihypertensive agents (e.g., vasodilators, angiotensin-converting enzyme inhibitors, diuretics, beta blockers, prazosin) will usually have an additive effect on lowering blood pressure. Patients receiving these combinations should be appropriately monitored. Disopyramide: Disopyramide should not be administered within 48 hours before or 24 hours after verapamil administration. Quinidine: In patients with hypertrophic cardiomyopathy (IHSS), concomitant use of verapamil and quinidine resulted in significant hypotension. There has been a report of increased quinidine levels during verapamil therapy. Nitrates: The pharmacologic profile of verapamil and nitrates as well as clinical experience suggest beneficial interactions. Cimetidine: Two clinical trials have shown a lack of significant verapamil interaction with cimetidine. A third study showed cimetidine reduced verapamil clearance and increased elimination to 1/2. Anesthetic Agents: Verapamil may potentiate the activity of neuromuscular blocking agents and inhalation anesthetics. Carbamazepine: Verapamil may increase carbamazepine concentrations during combined therapy. Rifampin: Therapy with rifampin may markedly reduce oral verapamil bioavailability. Lithium: Verapamil may lower lithium levels in patient on chronic oral lithium therapy. Carcinogenesis, Mutagenesis, Impairment of Fertility: There was no evidence of a carcinogenic potential of verapamil administered to rats for two years. Verapamil was not mutagenic in the Ames test. Studies in female rats did not show impaired fertility. Effects on male fertility have not been determined. Pregnancy (Category C): There are no adequate and well-controlled studies in pregnant women. ISOPTIN crosses the placental barrier and can be detected in umbilical vein blood at delivery. This drug should be used during pregnancy, labor, and delivery, only if clearly needed. Nursing Mothers: ISOPTIN is excreted in human milk, therefore, nursing should be discontinued while verapamil is administered. Pediatric Use: Safety and efficacy of ISOPTIN in children below the age of 18 years have not been established.

ADVERSE REACTIONS: Constipation 8.4%, dizziness 3.5%, nausea 2.7%, hypotension 2.5%, edema 2.1%, headache 1.9%, CHF/pulmonary edema 1.8%, fatigue 1.7%, bradycardia 1.4%, 3° AV block 0.8%, flushing 0.1%, elevated liver enzymes (see WARNINGS). The following reactions, reported in less than 1.0% of patients, occurred under conditions (open trials, marketing experience) where a causal relationship is uncertain; they are mentioned to alert the physician to a possible relationship: angina pectoris, arthralgia and rash, AV block, blurred vision, cerebrovascular accident, chest pain, claudication, confusion, diarrhea, dry mouth, dyspnea, ecchymosis or bruising, equilibrium disorders, exanthema, gastrointestinal distress, gingival hyperplasia, gynecomastia, hair loss, hyperkeratosis, impotence, increased urination, insomnia, macules, muscle cramps, myocardial infarction, palpitations, paresthesia, psychotic symptoms, purpura (vasculitis), shakiness, somnolence, spotty menstruation, sweating, syncope, urticaria. Treatment of Acute Cardiovascular Adverse Reactions: Whenever severe hypotension or complete AV block occur following oral administration of verapamil, the appropriate emergency measures should be applied immediately, e.g., intravenously administered isoproterenol HCl, levarterenol bitartrate, atropine (all in the usual doses), or calcium gluconate (10% solution). If further support is necessary, inotropic agents (dopamine or dobutamine) may be administered. Actual treatment and dosage should depend on the severity and the clinical situation and the judgment and experience of the treating physician.

OVERDOSAGE: Treatment of overdosage should be supportive. Beta-adrenergic stimulation or parenteral administration of calcium solutions may increase calcium ion flux across the slow channel, and have been used effectively in treatment of deliberate overdosage with verapamil. Clinically significant hypotensive reactions or fixed high degree AV block should be treated with vasopressor agents or cardiac pacing, respectively. Asystole should be handled by the usual measures including cardiopulmonary resuscitation.

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CORRESPONDENCE COURSE QUIZ

Vaginal Douche Products

1. The FDA advisory panel that reviewed OTC vaginal douche products reported that all of the following are legitimate claims to be permitted on the labeling of deodorant products with the EXCEPTION of:
   a. decreases the number of micro-organisms.
   b. destroys odors.
   c. masks offensive odors..
   d. removes vaginal secretions.
2. Which of the following has demonstrated effectiveness as an astringent in a 0.2 to 1.0% concentration, but has not been proven safe for use in OTC vaginal products?
   a. Edetate disodium
   b. Oxyquinoline citrate
   c. Sodium borate
   d. Zinc sulfate
3. During the reproductive years, the normal pH of vaginal fluid is:
   a. acidic.
   b. neutral.
   c. alkaline.
4. The FDA advisory panel that reviewed OTC vaginal douche products found that which of the following is safe and effective for self-treatment of minor vaginal irritation?
   a. Acetic acid
   b. Benzalkonium chloride
   c. Boric acid
   d. Povidone-iodine
5. All of the following are indigenous micro-flora for the vaginal tract EXCEPT:
   a. diphtheroids.
   b. lactobacilli.
   c. spirochetes.
   d. trichomonas.
6. Which of the following statements is true?
   a. Drugs introduced into the vaginal tract cannot be absorbed.
   b. It has been proven that routine douching is necessary for normal, healthy vaginal mucosa.
   c. When douching, the woman should occlude her vaginal opening so that the irrigation fluid remains within for at least five minutes.
   d. The mucous membrane of the vaginal tract is an extension of the uterus, fallopian tubes and abdominal cavity.
7. The FDA panel that reviewed OTC vaginal douches products found that all of the following are safe and effective for self medication as a mucolytic agent EXCEPT:
   a. docusate.
   b. nonoxynol 9.
   c. sodium borate.
   d. sodium lauryl sulfate.
8. The major question that the FDA panel that reviewed OTC vaginal douche products had concerning commercially available OTC disposable douches was whether they:
   a. contain a sufficient quantity of fluid to effectively achieve their therapeutic claims.
   b. are adequately labeled for cosmetic purposes.
   c. are supplied with the proper tubing and shut-off valve.
   d. are safe for OTC sale.
9. When contained in OTC vaginal douche products, potassium sorbate is classified by the FDA advisory panel as being safe, effective, and useful for:
   a. altering vaginal pH.
   b. astringent activity.
   c. mucolytic action.
   d. relief of minor irritation.
10. As far as the FDA is concerned, which of the following uses for OTC vaginal douche products is a therapeutic claim rather than a cosmetic application?
    a. Cleansing action
    b. Deodorization
    c. Mucolytic effect
    d. Soothing effect

NEW MEMBERS

Continued from page 35

data collection and distribution services network."

The new members join the charter founding wholesalers who are:

Albers Inc., Knoxville, TN; Bristol, VA
Behrens, Inc., Waco, TX; Lubbock, TX
Commons Bros., Inc., Elmsford, NY
J. E. Goold & Company, Portland, ME
Northwestern Drug Co., Auburn, WA
Solomons Company, Savannah, GA
Twin City Wholesale Drug Company, Minneapolis, MN
Walker Drug Company, Birmingham, AL
Louis Zahn Drug Company, Melrose Park, IL

Total membership consists of 14 ownerships with 19 distribution centers.

BIRTHS

Born to Mr. & Mrs. Bruce MacLeod, Raleigh on March 26 at Wake Memorial Hospital, a son named Robert Paul. Mrs. MacLeod is the former Joy Woodard, class of 1977 School of Pharmacy. Barney Paul and Anne Woodard of Princeton are the proud grandparents.

Timothy and Mary Fuller Morgan of Buxton, announce the birth of their daughter, Mary Shanley Morgan on April 6 at 8 lbs. 2 oz.

DEATH

John D. Mitchell

John D. Mitchell, Kannapolis, died December 15, 1986 at the age of 73. Born in Concord, Mitchell was a 1935 graduate of the UNC School of Pharmacy, and in 1986 was inducted into the NCPhA Fifty Plus Club, symbolizing fifty years as a pharmacist. Mitchell was associated with pharmacies in the Charlotte, Concord, Kannapolis area before purchasing Martin's Drug in Kannapolis in 1948.

MARRIAGE

SHERRY GAIL CREECH, Selma and Dennis Harold Holloman, Princeton were married on Saturday, March 21, at Fairview Presbyterian Church, Selma. Elder D.B. Stokes officiated at the 3:00 pm ceremony.

The bride is a 1986 graduate of the University of North Carolina at Chapel Hill School of Pharmacy, and is employed as a pharmacist at Johnston Memorial Hospital in Smithfield. The bridegroom is a 1977 graduate of North Johnston High School and is employed with Harris Teeter, Inc. of Raleigh. The couple live in Selma.

1987 B.W. CO® PHARMACY EDUCATION PROGRAM

Burroughs Wellcome Co. is pleased to announce the continuation of the Burroughs Wellcome Co. *Pharmacy Education Program* through 1987. This year, we will distribute $156,000 toward the program, bringing the total amount of awards over the past fourteen years to more than $1,600,000.

The objective of the Burroughs Wellcome Co. *Pharmacy Education Program* is to bring all segments of pharmacy (retail — chain and independent, hospital, academic, and industry) together for the basic support of the future of pharmacy; i.e., to aid deserving students in completing their education.

Each year, pharmacists from every state, plus the District of Columbia and Puerto Rico, are invited to participate in the Burroughs Wellcome Co. *Pharmacy Education Program.* Pharmacists who participate have the opportunity to compete for educational grants which are presented to pharmacy schools and the educational foundations of six national pharmacy associations of their choice. Upon receipt, the pharmacy school involved establishes a *Burroughs Wellcome Co. Scholarship* which will be awarded to an outstanding student to aid in the completion of his/her education.

When the program started in 1974, 52 students received grants of $250. In subsequent years, the program has gradually expanded to its present format of 156 winning pharmacists given the opportunity to donate: (1) $500 to the pharmacy school of his/her choice for the establishment of a *Burroughs Wellcome Co. Scholarship;* and (2) an *additional* $500 grant, issued in his/her name, and presented to the educational foundation of one of the following national pharmacy associations; American College of Apothecaries (ACA), American Pharmaceutical Association (APhA), American Society of Hospital Pharmacists (ASHP), National Association of Chain Drug Stores (NACDS), National Association of Retail Druggists (NARD), or the American Society of Consultant Pharmacists (ASCP). Again, the choice of national pharmacy association is up to the winners.

Pharmacists become eligible for the drawing (scheduled for July 17, 1987) by filling out and mailing an entry form to B.W. Co.® by the June 15 deadline. To be valid, the entry form must include both the pharmacy school and the national pharmacy association of their choice. Each of the 156 pharmacists will receive a suitably inscribed plaque in recognition of their being a winner. And *everyone who enters will receive a free gift — a replica of a 17th century pill tile.*

In 1986, over 48,600 entries were received, truly a testimonial to the interest within the pharmacy profession for the Burroughs Wellcome Co. Pharmacy Education Program.

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CLINICAL-STAFF PHARMACIST POSITION: Will be working every 3rd weekend and will have responsibilities in unit dose, IV admixtures, cancer chemotherapy, patient education, nursing inservice, pharmacy newsletter, pharmokinetic dosing, drug use evaluation and other evolving clinical applications. Some advanced training and experience in clinical pharmacy preferred. If interested and qualified please send resume to: Director of Personnel, Community General Hospital, PO Box 789, Thomasville NC 27360. EOE.

PHARMACIST PROFESSIONAL SERVICES/CONSULTATION: Temporary and or Continual. Contact: L. W. Matthews, III, (919) 967-0333 or 929-1783. 1608 Smith Level Rd., Chapel Hill NC 27514.

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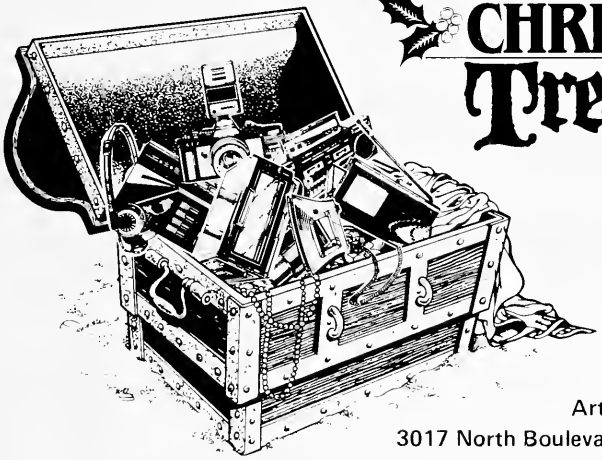

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VOLUME 67 NUMBER 5
MAY 1987

Photo by Colorcraft

Presented their 50+ Certificates and pins and inducted into the NCPhA Fifty Plus Club at the Annual Convention, having been licensed for fifty years were: left to right Rupert E. Bullard, Fayetteville; Loy M. McCombs, Creedmoor; John A. Mitchener, Jr., Edenton; Herbert T. Taylor, Goldsboro; Charles M. Crowell, Jr., Mooresville; W.J. Smith, Chapel Hill.

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CONTENTS

Report of the Resolution Committee 4
Report of the Ethics, Grievance and Practice Committee ... 9
Woodard Receives Distinguished Pharmacy Alumnus Award 15
Report of the NCPhA Endowment Fund Committee 16
The NCPhA Endowment Fund 17
Dickinson's Pharmacy 20
Cocaine and "Crack" 21
CE Course — Hard Contact Lens Solutions 23
CE Course Quiz 32
Classified Advertising 35

ADVERTISERS

Colorcraft 5
Dr. T. C. Smith Co./W.H. King Drug ..... Back Cover
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Pilot Life 2
Spear Associates 18
Store Fixtures & Planning, Inc. 10
Upjohn 8
Washington National 12

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REPORT OF THE RESOLUTIONS COMMITTEE

Presented and Adopted at the 107th Annual meeting of the North Carolina Pharmaceutical Association, April 22–25, 1987, Charlotte

I. Source — Mental Health Committee

Whereas the Mental Health Committee is concerned about the dispensing of drugs in Mental Health Centers, and

Whereas there is insufficient information currently available on this practice,

Now therefore be it Resolved that

A survey be conducted by the Committee to determine how mental health centers in the 100 counties of North Carolina are handling medications for their clients.

Recommendation — Do Pass

II. Source — Employer/Employee Relations Committee

Whereas polygraph test results are not accepted as evidence in a court of law and results are subject to misinterpretation and variation in testing techniques, and

Whereas polygraph testing is stressful and degrading to professionals,

Now therefore be it Resolved that

The North Carolina Pharmaceutical Association recommends that pre-employment and routine polygraphing of pharmacists be discontinued/and be it further resolved that the North Carolina Pharmaceutical Association supports federal and state legislation to limit polygraph testing.

Recommendation — Do Pass

III. Source — Employer/Employee Relations Committee

Whereas due to changes in federal income tax laws, employed pharmacists (will) be unable to deduct such items as association dues, convention expenses, continuing education, etc., therefore

Be it resolved that

Employers be urged to offer pharmacists a "Professional Expense Account" and reimburse said employees for these miscellaneous expenses up to a reasonable dollar limit, on a case-by-case basis

Recommendation — Do Pass

IV. Source — Employer/Employee Relations Committee

Whereas many pharmacists who are covered by company pension plans are affected by changes in the tax law

Now therefore be it Resolved that

Employers be urged to offer alternate tax-sheltered retirement plans to their pharmacists.

Recommendation — Do Pass

V. Source — Ethics, Grievance & Practice Committee

Whereas disciplinary action by the Ethics, Grievance and Practice Committee as authorized by the Constitution of the North Carolina Pharmaceutical Association can have substantial impact on the disciplined member, and

Whereas all disciplinary action by the Ethics, Grievance and Practice Committee should be administered in a consistent and equitable manner, and

David Work, Chairman, Resolutions Committee

Whereas variation in disciplinary action can be minimized by staggered four year terms of Committee members, therefore,

Be it Resolved that

The North Carolina Pharmaceutical Association submit the following constitutional amendment to be considered at the 1988 annual meeting.

Article III, Section 2 of the Consitution is amended to read:

The Ethics, Grievance and Practice Committee is the judicial division of the Associtaion and shall be composed of five members, one of whom shall be the current Second Vice-President of the Association. The first year, the President of the Association shall appoint four committee members and shall designate, one, two, three, or four year terms, respectively. Thereafter, one new member shall be appointed by the President annually for a four year term. The Executive Director of the Association shall serve as an exofficio member of the Committee. It shall be the primary responsibility of the Ethics, Grievance and Practice Committe to develop written criteria for membership and interpret and enforce the Association's Code of Professional Ethics according to the provisions of the Bylaws and procedures duly adopted by the Committee. The Committee shall also serve to advance the practice standards of the profession of pharmacy.

(Changed wording appears in italics)

Recommendation — No Recommendation

VI. Source — Committee on Community Pharmacy

Whereas it is not in the patient's best interests to limit freedom of choice, and

Whereas a limitation on freedom of choice of pharmaceutical services can interfere with the pharmacist/physician/patient relationship

Now therefore be it Resolved that

The North Carolina Pharmaceutical Association encourages freedom of choice of pharmaceutical services in all managed health care plans.

Recommendation — Do Pass

VII. Source — Committee on Community Pharmacy

Whereas the Pharmaceutical Manufacturers Association finished products index has increased approximately 10% annually over the last five years, and

Whereas this does not compare favorably with other economic data such as the 1986 Consumer Price Index increase of 2%,

Now therefore be it Resolved that

The North Carolina Pharmaceutical Association urge pharmaceutical manfacturers to use restraint in price increases, and

Be it further Resolved that

A copy of this Resolution be mailed to all Pharmaceutical Association members.

Recommendation — Do Pass

VIII. Source — Committee on Community Pharmacy

Whereas single tiered pricing of pharmaceuticals is in the best interest of the public,

Therefore be it Resolved that

The North Carolina Pharmaceutical Association commend those pharmaceutical manufacturers who have implemented single tier pricing plans

Continued on page 6

RESOLUTIONS COMMITTEE

Continued from page 5

and encourage other manufacturers to adopt such plans, and

Be it further Resolved that

A copy of this Resolution be forwarded to the members of the Pharmaceutical Manufacturers Association.

Recommendation — Do Pass

IX. Source — Members of Board of Pharmacy

Whereas the orientation process for New Members of the Board of Pharmacy takes a substantial period of time and can consume most of one term, and

Whereas the current limit of two terms of three years each is uniformly considered by present and past Board Members as insufficient for maximum benefit to the public and the profession, and

Whereas under the current statutory provision it is possible for five of the six Board Members to be replaced within a 12 month period, and

Whereas the five elected Board Members would be replaced at a more steady and reasonable rate if the Members terms were staggered and five years in length, thus insuring continuity and fairness in hearings and disciplinary matters,

Now therefore be it Resolved that

The North Carolina Pharmaceutical Association go on record supporting a maximum of two terms of five years each for Members of the Board of Pharmacy.

Recommendation — Do Pass

X. Source — Resolutions Committee

Whereas W.J. Smith has expended much effort to obtain space for a 1920's drug store exhibit in the North Carolina Museum of History, and

Whereas W.J. Smith is continuing a diligent search for pharmaceutical fixtures, items and other support, and

Whereas this activity will provide an invaluable asset for pharmacy and the people of this state,

Now therefore be it Resolved that

W.J. Smith and the Committee for Installation of 1925 Exhibit at the North Carolina Museum of History, Raleigh be commended for this leadership.

Recommendation — Do Pass

XI. Source Northwest Pharmacists' Association

NONPHARMACIST DISPENSING

Whereas, there is a current trend toward increased dispensing activity by nonpharmacists, and

Whereas, patients receiving prescription medications are entitled to comprehensive pharmaceutical services, including, but not limited to patient counseling, maintenance of patient profiles and the provision of the "check and balance" system with other health professionals to prevent prescriber errors and adverse drug interations, and

Whereas, patients typically do not receive these comprehensive services from nonpharmacist dispensers, and

Whereas, twenty-five states now have legislation which either prohibits nonpharmacist (including physician) dispensing or imposes the same labeling, packaging and recordkeeping requirements as apply to pharmacists, and

Whereas, the American Pharmaceutical Association has seen fit to adopt a policy in opposition to dispensing by nonpharmacists,

Be it resolved that, the North Carolina Pharmaceutical Association oppose the dispensing of prescription medications by nonpharmacists, and

Be it further resolved that, the North Carolina Pharmaceutical Association propose and support legislation which would 1) prohibit the dispensing of prescription medications except under the supervision and control of a pharmacist, and 2) require that all persons who dispense prescription medications (including medication samples) be required to obtain a pharmacy permit and to comply with the same laws and regulations governing dispensing by pharmacists, and

Further be it resolved that the North Carolina Pharmaceutical Association report on the status of the above legislative activity to the membership at the 1988 Annual Meeting

Recommendation — Do Pass

XII. Source Northwest Pharmacists' Association

Campbell University Student Chapter of the NCPhA

PRESCRIPTION MAIL ORDER PHARMACY SERVICES

Whereas, a direct, personal and interactive pharmacist-patient relationship is essential in the provision of comprehensive pharmaceutical services, and

Whereas, patients should not be penalized by third party contractual agreements which limit their selection of providers of pharmacy services, and

Whereas, studies have shown mail order prescription services do not save money for the payers of health care benefits, and

Whereas, community pharmacists are called upon to deal with problems experienced by patients using mail order prescription services,

Be it resolved that the North Carolina Pharmaceutical Association oppose mail order prescription services which circumvent the traditional primary pharmacist-patient-physician relationship, and

Be it further resolved that the North Carolina Pharmaceutical Association educate payers of prescription benefits abou the lack of cost-effectiveness and other problems associated with mail order prescription services, and

Be it further resolved that the North Carolina Pharmaceutical Association propose and support legislation which would require that all providers of pharmaceutical services in North Carolina meet the North Carolina pharmacy practice standards, laws and regulations, and

Further be it resolved that the North Carolina Pharmaceutical Association report on the status of the above legislative activity to the membership at the 1988 Annual Meeting

Recommendation — Do Pass

XIII. Source Resolutions Committee

Whereas this Annual Convention has been served by a dedicated group of Local Convention Chairmen, and

Whereas this Annual Convention could not occur without the invaluable assistance of many individuals,

Now, there be it Resolved that the Members of the North Carolina Pharmaceutical Association hereby adopt this resolution of appreciation for the efforts of Don Hill, Mary Lou Davis, DeLacey Luke, Exhibitors, contibutors and all others who have helped make this convention a success.

Recommendation — Do Pass

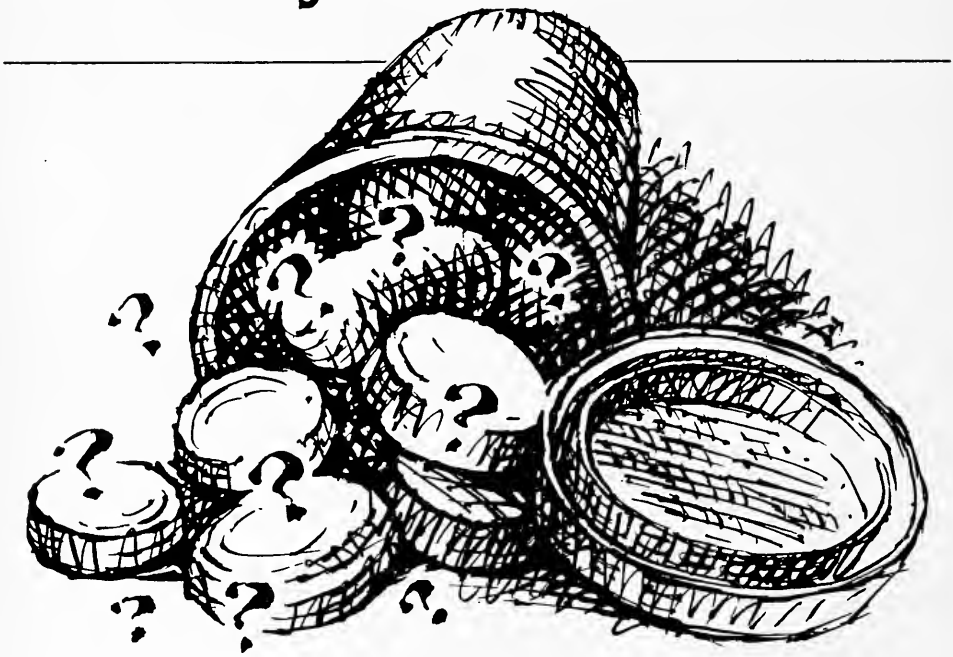
Committee Members
David R. Work, *Chairman*
James L. Creech
Kathleen M. D'Achille
Truman Hudson
John R. Setzer, Jr.

Left to Right: John C. Hood, 1987 Pharmacist of the Year and M. Keith Fearing, Jr., 1986–1987 NCPhA President. The Mortar and Pestle Dinner in Kinston will be announced soon.

The Pharmacy Trivia question in the February issue of the Carolina Journal of Pharmacy has gone unanswered. The question was "For what was Richard Q. Peevy recognized by NARD in 1951". Jesse Pike, Concord, was close, but not correct. Peevy was the pharmacist on the radio show "The Great Gildersleeve" and received a plaque honoring him as "American's Favorite Neighbor Druggist".

These days, your customers want more than medicine in hand.

They want answers.



Today's pharmacists have some explaining to do. In fact, a recent study by The Upjohn Company showed that 65% of your customers want to talk with you about their prescriptions. That's a 22% increase in nearly 10 years!

The reason is consumer awareness. Today's customer is better informed, better educated — with many more questions about concerns like side effects and drug interactions. So take time out to talk with your customers. In today's competitive environment, it might be one of the best things you can do to earn repeat business.

The Upjohn Company has many more facts on the trends affecting your business. If you'd like to know more, just contact your Upjohn representative.

Upjohn

Sharing knowledge...sharing success.

REPORT OF THE ETHICS, GRIEVANCE AND PRACTICE COMMITTEE

Presented at the 107th Annual meeting of the North Carolina Pharmaceutical Association, April 22–25, 1987, Charlotte

The work of the 1986–87 Ethics, Grievance and Practice Committee was two-fold; 1) develop written criteria for membership and administrative procedure for grievances as called for in the Association's Constitution and 2) provide an interpretation of the Code of Professional Ethics and to advance the practice standards of the profession.

Written Criteria For Membership

Article IV, Section 1 of the NCPhA Constitution states that an active member must satisfy written criteria developed by the Ethics, Grievance and Practice Committee. Pursuant to this requirement, the committee adopted the following criteria for active membership.

To become an Active Member, an individual must meet the following criteria:

1. be a pharmacist licensed to practice pharmacy under the laws of this state or a graduate of an accredited School of Pharmacy,
2. pay annual dues, and
3. subscribe to the Association's Code of Professional Ethics (to be indicated by signing the application for membership and renewal applications)

It will be apparent to the membership that the Committee is requiring of potential members nothing that the Constitution does not already require.

Administrative Procedure For Disciplinary Action

In considering the procedure to be folowed when disciplining its members, many salient issues were raised. These are presented in this report to provide a greater perspective to the membership regarding the work of this Committee. The document outlining the procedure to govern disciplinary action as adopted by the Committee follows the presentation of these issues.

1. What are the tangible repercussions to an individual if his membership is terminated?
   a. Denial of renewal of professional liability insurance.
   b. No loss in health insurance benefits. North Carolina Laws prohibit an organization from dropping a member's (former member's) health insurance.
2. Shouldn't there be some way for the Committee to discipline a member without taking away their membership? i.e. something less severe
   — The committee should be able to reduce membership privileges. This may include prohibiting the member from committee membership or serving/being nominated for an Association office. This suggestion was incorporated in "II. Disciplinary Actions" of the Administrative Procedure.
3. What should this Committee's role be in helping the grieved parties?
   — An attempt at arbitration should occur prior to any formal action by the committee. This consideration was incorporated in paragraph three of the introduction to the Administrative Procedure.
4. How can consistency and fairness in committee actions against members be assured?
   — It was proposed that the committee members serve extended terms with only one member rotating off each year. A constitutional amendment will be requried to change the committee's composition and will be presented as a resolution at this 1987 Convention.
5. How will the Committee learn of the conviction of a member by the Board of Pharmacy or the Courts?
   — The Association should obtain the public record of the Board of Pharmacy proceedings as well as any court cases involving members. It is the feeling of this Committee that a genuine effort should be made to routinely peruse these documents in order to fairly administer its responsibilities. The mechanism for obtaining this information is left to the discretion of the Committee and the Association staff. This issue was

Continued on page 10

ETHICS, GRIEVANCE

Continued from page 9

incorporated in paragraph three of the introduction to the Administrative Procedure.

6. Does the responsibility of this Committee duplicate the responsibilities of the Board of Pharmacy?
   — This Committee is the judicial branch of the North Carolina Pharmaceutical Association and as such should be responsible for the self regulation of its membership. The Board of Phrmacy does not adress ethical issues; and this fact alone differentiates the actions of the two. It is also apparent that the Association is not well served by endorsing as members *convicted* felons (pharmacy related or other wise) or others serving active sentences imposed by the Board of Pharmacy.
7. Should the names of disciplined members be published, or should just the town, area of the state, and/or practice type be identified? What media should be used to identify disicplined members?
   — A subcommittee recommended that the *actions* of the Committee be published in the *Carolina Journal of Pharmacy*. The Committee took no final action on this recommendation.

Administrative Procedure For Disciplinary Action

The Ethics, Grievance and Practice Committee (hereinafter referred to as the Committee) is authorized to hear, mediate and advise on matters with respect to the Code of Professional Ethics of the North Carolina Pharmaceutical Association. The power of the Committee is solely to hear representations by the persons directly involved in grievances, to mediate voluntary adjustments and to advise adjustments or disciplinary action when appropriate. The Committee may act as a whole or as designated by the Chairman in panels of two or more for consideration of particular grievances.

"Grievances" within the jurisdiction of the Committee include matters directly related to violations by any member of the Association of any section of the Code of Professional Ethics; of the phramacy laws of the State of North Carolina, the Rules and Regulations of the North Carolina Board of Pharmacy or the federal laws relating to the practice of pharmacy; or actively serving a conviction for a felony.

No grievances based on violation of the Code of Professional Ethics may be considered except on the basis of a prior written statement of its nature by the aggrieved member(s) and until determination is made that an unsuccessful attempt has been made to resolve the grievance with member or members directly concerned. All other grievances will be considered on the basis of the public record reporting said grievance. A grievance need not be presented by a member of the North Carolina Pharmaceutical Association.

I. CONDUCT SUBJECT TO DISCIPLINE

A member may be disciplined by the Committee for:

1. violating the Code of Professional Ethics of the North Carolina Pharmaceutical Association,
2. having been convicted of violating the pharmacy laws of the State of North Carolina, the Rules and Regulations of the North Carolina Board of Pharmacy, or the federal laws relating to the practice of pharmacy, or
3. having been convicted of a felony.

II. DISCPLINARY ACTIONS

A member may be reprimanded, have his membership privileges reduced, be suspended or be expelled from membership for any of the offenses enumerated in Section I. (NCPhA Constitution Article III, Section 3)

III. DISCIPLINARY PROCEEDINGS

Upon the receipt of a written, signed complaint or other notification, the Committee shall determine whether the allegations are true and correct requiring disciplinary action. If so, the committee may then: 1) seek voluntary compliance with the Code of Professional Ethics, 2) schedule a formal hearing, or 3) delay action pending further information. If the committee determines that the allegation would not constitute unprofessional conduct, it will dismiss the complaint.

A. **Hearing**: The accused member shall be entitled to a hearing at which he shall be given the opportunity to present his defense to all charges brought against him.

B. **Notice**: The accused member shall be notified in writing of charges brought against him and of the time and place of the hearing.

C. **Charges**: The written charges shall include a statement of the alleged conviction in law or determination of legal guilt, or a specification of the ethical provisions alleged to have been violated, as the case may be, and a description of the conduct alleged to have been violated, as the case may be, and a description of the conduct alleged to constitute each violation.

D. **Decision**: Every decision which shall result in reprimand, suspension or expulsion shall be reduced to writing and shall specify the charges made against the member, the facts which substantiate any or all of the charges, the decision rendered, the action imposed and a notice shall be mailed to the accused member informing him of his right of appeal. Within ten (10) days of the date on which the decision is rendered a copy thereof shall be sent by registered mail to the last known address of each of the following parties: 1) the accused member 2) the president of the Association, and 3) the Executive Director of the Association. The Executive Committee of the North Carolina Pharmaceutical Association (hereinafter referred to as the Executive Committee) shall be notified of all decisions affecting membership status.

IV. APPEALS

Before any disciplinary action is imposed, an accused member shall have the right to appeal from a decision of the Committee to the Executive Committe by filing an appeal with the Executive Director of this Association and chairman of the the Committee. An appeal from any decision shall not be valid unless filed within sixty (60) days from the date on which the member received notification of the decision by the Committee. No decision

Continued on page 13

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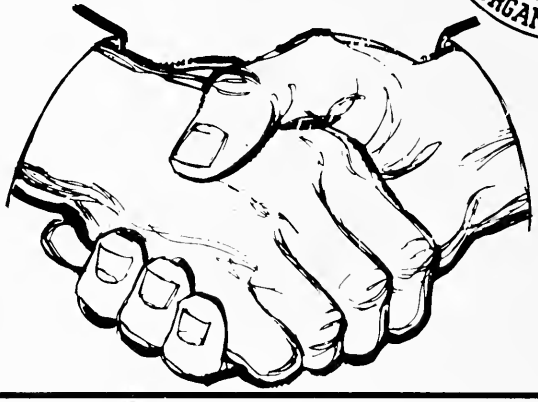

NCPhA-Endorsed Insurance Plans Which Merit Member Participation

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ETHICS, GRIEVANCE

Continued from page 11

shall become final while an appeal there from is pending or until the sixty (60) day period for perfecting an appeal has elapsed. (NCPhA Constitution Article III, Section 3). The following procedure shall be used in processing appeals:

A. **Hearing on Appeal**: The accused member shall be entitled to a hearing on an appeal, provided that such appeal is taken in accordance with, and satisfied the requirements of Section IV.

B. **Notice**: The accused member and the chairman of the Committee shall be notified of the time and place of the hearing, such notice to be sent by registered mail to the last known address of the parties to the appeal and mailed not less than thirty (30) days prior to the date set for the hearing.

C. **Briefs**: Every party to an appeal shall be entitled to submit a brief in support of his or its position. The party initiating the appeal shall submit his or its brief to the Executive Director of the Association within ninety (90) days of the date upon which the decision appealed from was rendered.

D. **Record of Disciplinary Proceedings**: Upon notice of an appeal, the chairman of the Committee shall furnish to the Executive Director of this Association and to the accused member a transcript of, or an officially certified copy of the minutes of the hearing accorded the accused member. The transcripts or minutes shall be accompanied by certified copies of any affidavits or other documents submitted as evidence to support the charges against the accused member or submitted by the accused member as part of this defense.

E. **Appeals Jurisdiction**: The executive committee shall be required to review the decision appealed from to determine whether the evidence before the Committee supports that decision or warrants the disciplinary action imposed. The majority decision of the executive committee of cases on appeal shall be final and binding (NCPhA Constitution Article III, Section 3).

F. **Decision on Appeals**: Every decision on appeal shall be reduced to writing and shall state clearly the conclusion of the executive committee and the reasons for reaching that conclusion. The executive committee shall have the discretion to:
   1. uphold the decision of the Committee,
   2. reverse the decision of the Committee,
   3. deny an appeal which fails to satisfy the requirement of Section IV,
   4. refer the case back to the Committee for a new proceedings, if the rights of the accused member under all applicable bylaws were not accorded him, or
   5. refer the case back to the Committee with a recommendation for less severe disciplinary action.

Within ten (10) days from the date on which a decision on appeal is rendered, a copy thereof shall be sent by registered mail to the last known address of each of the following parties: 1) the accused member, 2) the chairman of the Committee, 3) the Executive Director of the Association.

Committee Membership

As stated above, the Committee was concerned with the likelihood of substantial variation in the nature of disciplinary action should the entire committee membership be changed each year as in the current practice. The Committee further believes that membership in the Association is important enough that an attempt should be made to provide consistency and fairness in the Committee's deliberations. The following consitutional change is therefore being submitted in the form of a resolution at this 1987 Convention. (Proposed changes appear in italics)

> ARTICLE III, SECTION 2 — ETHICS, GRIEVANCE AND PRACTICE COMMITTEE
>
> The Ethics, Grievance and Practice Committee is the judicial division of the Association and shall be composed of five members, *one of whom shall be the current Second Vice-President of the Association. The first year, the President of the Association shall appoint four committee members and shall designate one, two, three or four year terms, respectively. Thereafter, one new member*

Continued on page 14

ETHICS, GRIEVANCE

Continued from page 13

shall be appointed by the President annually for a four year term. The Executive Director of the Association shall serve as an ex officio member of the Committee. It shall be the primary responsibility of the Ethics, Grievance and Practice Committee to develop written criteria for membership and interpret and enforce the Association's Code of Professional Ethics according to the provisions of the Bylaws and procedures duly adopted by the Committee. The Committee shall also serve to advance the practice standards of the profession of pharmacy.

Interpretation of The Code of Professional Ethics

This committee did not feel that a written interpretation of the Code of Professional Ethics was required by the Constitution. Rather the role of the Committee is to provide an interpretation when grievances are brought before the Committee.

Advancement of the Practice of the Profession

This Committee should actively strive to advance the practice standards of the pharmacy profession. A first step has been taken by the adoption of the Code of Professional Ethics last year and the adoption by this Committee of an equitably procedure for dealing with grievances.

Repectfully submitted,

Loni T. Garcia, *Chairman*

Committee Members

Loni T. Garcia, *Chairman*

C. Yvonne Blackmon	Laura G. McLeod
Ronald C. Gobble	Clifford E. Hemingway
Margaret D. LeDoux	Evelyn P. Lloyd
Virginia L. Lockamy	Albert F. Lockamy, Jr.
Wallace E. Nelson	Claude U. Paoloni
A. Wayne Pittman	Thomas R. Thutt
Kevin Almond	

The Convention voted to distribute the Report of the Ethics, Grievance and Practice Committee along with the Code of Professional Ethics to the membership in a special mailing. This has been done. To further disseminate the committee report, this Journal is being sent to ALL pharmacists practicing in North Carolina, both members and non-members. We encourage every pharmacist to read this report carefully and will appreciate any comments, written or called in. While we would prefer names, comments do not have to be signed.

APhA TO AGAIN COSPONSOR AMA IMPAIRMENT CONFERENCE

The American Pharmaceutical Association (APhA) for the second consecutive year will cosponsor the American Medical Association (AMA) National Conference on the Impaired Health Professional, which will be held October 8–11, 1987 at the Drake Hotel in Chicago.

Cosponsorship of the conference is a natural extension of APhA's 1982 policy encouraging the establishment of programs to assist pharmacists and pharmacy students whose ability to practice has been impaired due to the use of alcohol and/or other drugs.

The theme of the conference, "Impaired Health Professionals: Educating Ourselves . . . Educating Others," will stress the need for increased educational activities in the area of impairment of health professionals. Topics that will be addressed include:

- Design, Implementation and Assesment of Programs in Varied Settings
- Strategies for Non-Chemical Impairment
- Current Trends in Chemical Dependence
- The "Politics" of Impairment
- The Family of the Health Professional
- Suicide Prevention
- Intervention Training Sessions (Beginner and Advanced)
- Evening Self-Help Support Groups

A unique feature of this year's conference will be the presentation of original research on topics related to impairment and well-being. Abstracts are now being sought, with deadline for submission being August 1, 1987.

This is the only national conference of its kind that provides a forum for the exchange of ideas and approaches that aim to help current

Continued on next page

WOODARD NAMED RECIPIENT OF 1987 PHARMACY ALUMNI DISTINGUISHED SERVICE AWARD

Barney Paul Woodard

N.C. Rep. Barney Paul Woodard, D-Johnston, has been named the recipient of the 1987 Pharmacy Alumni Distinguished Service Award by the University of North Carolina at Chapel Hill School of Pharmacy.

Woodard, a 1938 graduate of the School of Pharmacy, was cited for his contributions to pharmacy and the community during a recent ceremony in Chapel Hill.

Woodard has represented District 20, which includes Wayne and Johnston counties, for eight consecutive terms. During that time, he has served on committees dealing with issues in human resources, state personnel, aging, agriculture and health.

In addition to his political activities, Woodard has contributed to his community as well. He bought a pharmacy in his native Princeton in 1943. Three years later, he bought Peele Drug Co. In 1954 he built a new drug store, which has continued to grow.

He was elected to the Princeton Board of Commissioners in 1948, when he helped the town build its first City Hall, organize its first fire department and build and equip its first fire station.

When the Princeton Community Building and gymnasium were destroyed by fire in 1977, he helped replace the building with a Community Center that houses a library and meeting space for civic groups.

Woodard has been a member of the Princeton Lions Club for 35 years and has served in all its offices, a member of the Masonic Lodge #317 for 38 years and a member of the Johnston County Shriner's Club. He was a Princeton school board member for 16 years, including four as chairman.

ETHICS, GRIEVANCE

Continued from page 14

programs function more effectively and aid in the establishment of new programs, particularly those involving a collaborative effort among disciplines.

The conference is the eighth in a series of AMA impairment conferences, originally dealing only with impaired physicians. In 1986, the focus of the conference was broadened to include other health professions. Besides APhA, other cosponsors are: the American Dental Association, the American Nurses' Association, the American Podiatric Medical Association and the American Veterinary Medical Association, along with AMA and the AMA Auxiliary.

For further information, contact: Janice J. Robertson, Department of Substance Abuse, American Medical Association, 535 N. Dearborn Street, Chicago, IL 60610; telephone (312) 645-5083.

The American Pharmaceutical Association is the national professional society of pharmacists, representing the third largest health profession that comprises more than 150,000 pharmacy practitioners, pharmaceutical scientists and pharmacy students. Since its founding in 1852, APhA has been a leder in the professional and scientific advancement of pharmacy and in safeguarding the well-being of the individual patient.

REPORT OF THE NCPhA ENDOWMENT FUND COMMITTEE

Presented at the 107th Annual meeting of the North Carolina Pharmaceutical Association, April 22–25, 1987, Charlotte

The Endowment Fund Committee met in the Institute of Pharmacy November 26, 1986 and after reviewing the financial position of the Fund and the past history, the Committee recommended that a more formal document be written and approved by the Executive Committee of the Association. This document would establish a Board of Trustees for the Fund.

The duties of the Trustees will be the following:

1. Solicitation of gifts
2. Investments
3. Administrations

A document establishing the Board of Trustees was written and presented to the Executive Committee of the Association during the February 8, 1987 meeting. After discussion, the Executive Committee of the Association approved and signed the document.

The Board of Trustees of the Endowment Fund consist of:

1. The President of the Association
   — Keith Fearing
2. The President Elect of the Association
   — Julian Upchurch
3. The Immediate Past President of the Association
   Shelton Brown
4. Four (4) appointed members
   — L. M. Whaley
   — Howard Ferguson
   — Albert Rachide
   — Robert Hall
5. Executive Director of the Association
   — Ex-Officio — A. H. Mebane

The Board of Trustees of the Endowment Fund met at the Institute of Pharmacy March 12, 1987. L. M. Whaley was elected chairman and Howard Ferguson, vice chairman. A. H. Mebane will act as secretary to the Trustees.

Whaley suggested a fund raising dinner be held and it was approved by the Trustees for the Kenan Center in Chapel Hill, Saturday, October 17, 1987.

A copy of the endowment fund financial condition as of March 1, 1987 is attached for your information.

NCPhA Endowment Fund

Fund Title	March 1, 1987
W.J. Smith Speaker Fund	$ 7,087.26
Ralph P. Rogers Sr. Scholarship Fund	17,903.33
Jesse Stewart Scholarship Fund	7,225.05
Kappa Psi Bond (@ 5%)	5,000.00
General Endowment Fund	117,887.44
Total	155,103.08

Committee Members

L.M. Whaley, *Chairman*

Howard Q. Ferguson, *Vice Chairman*
H. Shelton Brown, Jr.
M. Keith Fearing, Jr.
Robert Hall
A.H. Mebane, III, *Ex-Officio*
Albert Rachide, Sr.
Julian E. Upchurch

L. M. Whaley, Chairman, NCPhA Endowment Fund Committee

State of North Carolina **County of Orange**

THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION ENDOWMENT FUND

WHEREAS, The North Carolina Pharmaceutical Association of North Carolina (hereinafter referred to as the ASSOCIATION) is a duly organized and operating association of the state of North Carolina; and

WHEREAS, the personal property of said Association is vested in and owned by the North Carolina Pharmaceutical Association; and

WHEREAS, the Executive Committee of the Association has determined that it would be in the best interest of the ASSOCIATION for bequests, designated gifts, and trust funds to be held and managed within an endowment fund for the purposes of administration, investment and distribution, said endowment fund to be established in such a way as to restrict the use of the property transferred thereunder for the purposes and uses as expressed herein; and

WHEREAS, this Resolution and Declaration is executed for the purpose of establishing the North Carolina Pharmaceutical Association Endowment Fund, hereinafter referred to as the FUND.

NOW, THEREFORE, in order to accomplish such purpose, the Executive Committee of the North Carolina Pharmaceutical Association does hereby adopt the following Resolution and Declaration.

1. *Name.* The fund herein provided for shall be known as "The North Carolina Pharmaceutical Association Endowment Fund."

2. *Grant.* The Executive Committee of the Association has assigned, transferred and set over to the FUND the property described in Schedule A hereof, which properties together with investments, reinvestments and such other property as may from time to time be added thereto shall be held in the FUND in perpetuity upon the terms and conditions contained herein.

3. *Additions to the Fund.* Additions may be made to the FUND at any time and from time to time of any money and property whatsoever, including but not limited to cash, real property, tangible and intangible personal property, insurance proceeds and any other form of or interest in property. Such additions may be made by inter vivos or testamentary transfer. Property added to this FUND becomes a part of the FUND and shall be held, managed, administered and distributed upon the same uses as if constituting original assets hereof. The Trustees of the Endowment Fund (hereinafter referred to as the TRUSTEES) may in their sole discretion refuse to accept any property for any reason whatsoever. The TRUSTEES are authorized to place in the FUND any sums or property made payable, assigned, or transferred in such a way as to show an intent on the part of the donor or testator to give such property to the FUND.

4. *Purposes of the Fund.* The purposes for which this FUND is organized and shall be operated are:

(a) To provide for capital improvements to the ASSOCIATION property, including but not limited to construction of new ASSOCIATION facilities and improvement or renovation of existing ASSOCIATION facilities; to provide for the acquisition of real property for the ASSOCIATION; and to provide for the purchase of furniture, fixtures, and equipment.

(b) To provide a resource for the operating budget of the ASSOCIATION.

Not withstanding the above, the use of FUND monies is restricted to the income from the general endowment fund unless voted on and approved by the Executive Committee of the Association. Designated gifts and income therefrom shall be used as requested by the donor.

5. *Management of Fund Property.* The TRUSTEES shall hold, invest and reinvest the property of the FUND for the purposes expressed herein and shall collect and receive the interest and income thereon and shall distribute said income and principal as follows:

(a) The TRUSTEES may, at their option and in their discretion, use all or any part of the income and principal of the FUND property to pay assessments, taxes, charges, and expenses incurred in the collection, care, administration, management, protection and distribution of FUND property or income.

(b) After payment of the charges under subparagraph (a) above, the net income of the FUND shall be added to principal or shall be paid over for the purposes and

Continued on page 18

ENDOWMENT FUND

Continued from page 17

subject to the restrictions of Article 4 above.

(c) Notwithstanding the foregoing, if a gift, devise or bequest is made to the FUND with directions from the donor or testator as to the purpose for which the income or principal shall be retained or distributed, then if such gift, devise, or bequest is accepted, the income or principal therefrom shall be retained or disbursed as directed by the donor or testator.

6. *No Individual Beneficiary.* No individual or person shall have any right or interest in the trust property nor shall any part of the property of the FUND or the net earnings therfrom enure to the benefit of any individual except as provided in Paragraphs 4 and 5 above.

7. *TRUSTEES.* The governing body of the FUND shall be the TRUSTEES. The TRUSTEES shall consist of the following seven persons:

(1) The President of the Association

(2) The President-elect of the Association

(3) The Immediate Past President of the Association

(4) The remaining four members shall be active members of the Association with business and/or investment expertise. These four individuals shall be appointed by the President of the Association and ratified by the Executive Committee of the ASSOCIATION. They will serve terms of four years. (The original members shall be appointed for one, two, three, and four year terms respectively.)

The Executive Director of the Association shall serve as a non-voting ex officio member of the TRUSTEES. Any member of the TRUSTEES other than the President-elect, President, and immediate Past President of the Association may be removed from office by a two-thirds vote of the Association Executive Committee for any reason deemed to be in the interest of the FUND. Any vacancy occurring on the TRUSTEES, other than that of President-elect, President, or immediate Past President of

the Association, by death, resignation or otherwise shall be filled by appointment by the Association President and approved by the Association Executive Committee.

A quorum for the transaction of business by the TRUSTEES shall consist of four members; one of which must be the Chairman or the Vice Chairman. The TRUSTEES shall annually elect a chairman, vice chairman and secretary. Either the Chairman or the Vice Chairman shall have authority to execute any authorized documents and to certify official action of the TRUSTEES.

8. *Annual Report.* The TRUSTEES shall present a financial report annually to the Executive Committee of the Association.

9. *Liability.* The TRUSTEES shall not be held personally liable for any act or omission to act in administering the trust, including the retention of original assets, except for bad faith.

10. *Amendment of Resolution and Declaration.* Amendments of this instrument may be made by the Executive Committee of the ASSOCIATION. Amendments shall be made as may be necessary to qualify this FUND as exempt under Internal Revenue Code §501(c) or §170 or to secure non-private foundation status under the provisions of Internal Revenue Code §509(a) or corresponding laws, from time to time in effect. Such amendment shall be made by the execution by the Executive Committee of the Association and the TRUSTEES of a written instrument amending this document.

Notwithstanding the provisions of this document, the TRUSTEES shall not conduct or carry on any activity which shall adversely affect the FUND's exempt status under §501(c)(3) and its non-private foundation status under §509(a) of the Internal Revenue Code as they may now exist or may hereafter be in force or in effect. If any provisions contained in this document shall in any manner be construed to adversely affect the tax exempt status of the FUND, the same shall be null and void and of no further course and effect and severable from the provisions of this document without affecting the vitality or enforceability of any of the provisions remaining herein.

11. *Law Governing FUND.* The Executive Committee of the Association shall at all times have all the rights under law to enforce the terms of this document including accountability for the funds thereof.

IN WITNESS WHEREOF, the Executive Committee of the North Carolina Pharmaceutical Association has caused these presents to be executed by each of the individual members of the Executive Committee of the Association and their seals attached.

Max Reece, Jr., is the latest member of the NC Academy of Pharmacy. His wife, Susan, and NCPhA President M. Keith Fearing, Jr. view with pride.

DICKINSON'S PHARMACY

by Jim Dickinson

Employer power. A recent column entitled "Pharmacy Power" addressed dispensing physicians and ways that pharmacy will win that fight.

Now let's focus on another, even bigger fight, and who will win it. It's the hot war between corporate employers on the one hand and their soaring health costs on the other, paid either through (a) insurance premiums or (b) their own in-house programs.

The employers' dilemma was well-put at the American Pharmaceutical Association annual meeting in Chicago by consultant Laird Miller (Health Systems Management Inc., 612-729-1733), who until recently ran the employee benefits programs of Honeywell, Inc.

"Corporate actuaries worry us with their projections of life expectancies in the 85–90 range and better," he said, referencing the burgeoning number of retirees getting health and drug benefits. "Our chief concern is that we aren't getting value for our money from the health programs we use; we can't pass on an 11% increase in the health cost index, when our customers are holding us to 2% in the price increases they're willing to pay us."

And if you think pharmacists are fed up with third-party payors and insurance programs that (eventually) pay them, corporate employers who buy their programs are even more fed up, Miller says.

Pharmacists formed PSAOs to get the kind of combined clout they need with the programs, and that's what Miller says employers are doing, too.

Small employers, especially, "can buy better when they network with each other."

But listen to what a few large employers did, when they ran up against insurance company arrogance and unresponsiveness.

Without naming names, Miller said he knew of one corporate employer that got so frustrated trying to find out why its health premiums kept rising so much that it did some detective work until it found out the identities of some other customers of that same arrogant insurance company.

They formed an ad hoc "user's group" among themselves, and went in a body to the insurance company, which suddenly became very attentive.

Now the members of the user's group are in the driver's seat with the insurance company, which has agreed to tailor specific health programs for each of them, instead of persisting with its usual all-too-common attitude of "here's-what-we've-got, take-it-or-leave-it."

This tactic is completely turning the tables on how health benefits are paid for, and is in essence turning the employer into the main regulator of health care today, Miller says.

Now employers can design their own health packages, and dictate the individual provider specifications within those health packages.

Such employers will be more responsive to quality-based arguments than aloof, distant insurance companies and HMOs could be. They will want to deal with local pharmacies — not mail-order (although they will look at all options). They will find employee satisfaction a persuasive argument in establishing program specifications.

And if they get too much resistance from HMOs and other third parties on the adoption of their specifications, they will self-insure, keeping costs down with controllable employee incentives not to overuse services.

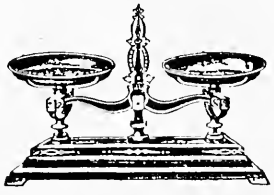
Smaller employers will network among themselves — Miller calls it "linkage" — so that they can bring leverage to bear against third parties, HMOs and, yes, even against PSAOs.

"I know if I walked up to you with a quarter-million lives in our pocket, you'd do handsprings to get our business," Miller told his pharmacy audience at APhA.

But with all that leverage and clout and muscle, the employers have a great weakness, he admitted. "They don't know enough about the delivery system, and they need your help."

Sounds like a match made in heaven!

This feature is presented on a grant from G.D. Searle & Co. in the interests of promoting the open discussion of professional issues in pharmacy. G.D. Searle & Co., accepts no responsibility for the views expressed herein as they are those of the author and not necessarily those of G.D. Searle & Co.



COCAINE AND 'CRACK'

Pharmacists can be the secret weapon in this war against drug abuse.

by Joseph Scarlata, R.Ph.

Like millions of others during the past few months, I have become increasingly aware of —and concerned about — the rapidly spreading use within our nation's "drug abuse subculture" of cocaine and its deadly derivative, crack.

The more I have learned about crack, the more I have found myself pondering what we, as pharmacists, should — or can — do about the situation.

Crack, as everyone knows by now, is the "free base" derivative of cocaine. But, unlike cocaine, crack is smoked rather than snorted.

The problems associated with addiction to heroin and other hard drugs seem to pale in comparison with the problems of those who fall prey to the enticements of crack.

With crack, addiction can be instantaneous. Most users are hooked after their first try. Crack users do not experience a "break in" period during which addiction develops gradually.

Unlike the other illicit drugs that plague our society, crack — or "rock" or "base" as it is also known — is relatively inexpensive. A single fix sells on the streets for about $10 to $15 — putting it within financial reach of the very young. Crack is also plentiful and easily obtainable.

Law enforcement officials estimate that each day some 2000 Americans try cocaine or crack for the first time. Most of them are teenagers.

Crack is more addictive than heroin — and it produces a greater high than heroin does. Addicts say that their cravings for crack far exceed their desires for food or oxygen.

As the most addictive drug now known to man, crack has the capacity to transform the occasional cocaine user into a desperate, fanatical addict.

Atom Bomb

One narcotic officer has declared that crack is to cocaine what an atomic bomb is to an ordinary bomb.

Cocaine and crack constitute the fastest-growing drug abuse problem in our nation today. And it is a problem among adults and schoolchildren.

To those of us who have been educated in the actions and effects of drugs, it is particularly horrifying to see cocaine use glorified as trendy and fashionable among show business personalities and the rich. It is appalling to see athletes, who should be role models, use cocaine with what seems to be almost unimpeded regularity.

As pharmacists, we are well aware of the hazards cocaine poses to mind and body. It accelerates heart rate, increases blood pressure, interferes with performance and produces sudden — and fatal — seizures.

This is a time for us to consider what we pharmacists, as society's most visible and readily accessible authorities on drugs, can do about the burgeoning epidemic of cocaine use.

For years, we have heard that we have a responsibility to become active in our communities, to speak out against the ravages of drug abuse and to try to educate young people about the hazards of illicit drugs.

But even though a number of our professional colleagues have taken part in such efforts, most of us have not. The pressures of business and family, we have no doubt rationalized, leave us no time to participate in programs of durg abuse education. "Someday," we have all promised ourselves, we *will* have the time. And *then* we'll become active.

Toll Rises

Meanwhile, as we await the arrival of the "someday" when our time will be freed up, the clock goes on ticking. The toll of people falling victim to drugs like crack and cocaine continues to rise.

Government and law-enforcement agencies can only do so much. Reducing the supply of the drugs is only part of the solution. As long as there is a demand for the drugs, ways will be found to supply them.

It is up to us to help reduce the demand through education. I think we can do it.

As pharmacists — the health professionals who possess the greatest expertise in drugs — we must not shirk our responsibilities to help counteract the continuing onslaught of illicit drug use. We have a thorough knowledge of the effects of drugs. We are accessible. We have respect and credibility in our communities.

All of us in the profession of pharmacy — practitioners, educators, industry personnel,

Continued on page 22

COCAINE AND CRACK

Continued from page 21

students, scientists — have a role to play in trying to rid society of drug abuse problems.

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Obligation

As professionals who have gained much from society, don't we have an obligation to "put something back" that will help improve that society? Of course we do!

Perhaps each of us has an obligation to tithe a portion of time to fight drug abuse. Even if this tithing amounts to only a few hours per year per pharmacist, just think of how much could be accomplished through our collective efforts!

We pharmacists can be especially effective by visiting elementary schools and speaking to the children about the hazards of using drugs.

For pharmacists who want to get involved in drug abuse education, there are many sources to turn to for information and instructional materials. One of the most useful sources is an organization known as Pharmacists Against Drug Abuse or PADA.

PADA offers three items that you will find helpful: (1) *The Pharmacist's Guide to Drug Abuse,* a manual for pharmacists; (2) *The Kinds of Drugs Kids Are Getting Into,* a manual for parents; and (3) a speech kit for helping pharmacists make effective presentations in their communities.

Toll-Free

You may obtain these materials from PADA by phoning toll-free to 1-800-222-PADA.

Let us not lose sight of the fact that the fight against drug abuse must be waged as a full-scale war. We pharmacists are among the most important combatants in this war. *We* are the community drug experts with the know-how to educate children and parents.

Once we are properly deployed, we can be the secret weapon in this war — the secret weapon that will lead our society to victory!

I urge you to become involved! *Today*

Joseph Scarlata, senior vice-president, Pharmaceutical Group, Sterling Drug, Inc., received his bachelor's degree in pharmacy from Brooklyn College of Pharmacy in 1954.

Convention hospitality rooms often require strange dress codes. Obviously abiding by this maxim in the Woman's Auxiliary Hospitality Room is Len Phillipps, to the delight of Lib Fearing, Stella Paoloni and Eloise Watts.

CORRESPONDENCE COURSE

ADVISING CONSUMERS ON HARD CONTACT LENS SOLUTIONS

by J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati, Cincinnati, OH
and
Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University, Ada, OH

Goals

The goals of this lesson are to:

1. discuss solutions used in the care and wear of hard contact lenses;
2. explain how to advise contact wearers on the proper use of these solutions.

Objectives

At the completion of this lesson, the successful participant will be able to:

1. identify solutions intended for use with hard contact lenses;
2. explain the proper techniques for using these solutions.

The purpose of this SCOPE lesson is to discuss the various solutions intended for use with hard contact lenses. There are five major subheadings of hard contact lens solutions. These include wetting solutions, cleaning solutions, soaking solutions, lubricants and combinations of the above. These solutions are defined, and their uses categorized. Specific consumer advice is also presented. Solutions for use with soft contact lenses will be discussed in next month's lesson.

The term "contact lens" is a misnomer. These lenses do not actually come in contact with the cornea. Instead, they float on a layer of tears (or commercial lubricating solution if tear secretion is inadequate). Therefore, contact lens solutions provide comfort for individuals who choose to wear lenses rather than spectacles.

A potential problem associated with hard contact lens use is decreased oxygen supply to the cornea which may cause corneal irritation. Unless measures are taken to correct this in susceptible lens wearers, they may experience intense physical discomfort. To alleviate this problem, a variety of solutions specifically developed for the care for these lenses and their preparation for insertion into the eye are available.

The Lens Solution Market

The OTC contact lens solution market is extremely competitive and highly subjective. Various manufacturers of contact lens products have successfully created strong brand loyalty to their solutions. Contact lens wearers have been taught to rely heavily on the advice of their lens fitters.

Manufacturers have attempted to acquire customers by supplying samples of contact lens solutions to ophthalmologists, optometrists and opticians who are the key advisors on which products are best suited to specific applications. Most contact lens wearers receive an introductory package of sample materials and products when their lenses are initially fitted. They generally will continue to use those brands.

Continued on page 24

CORRESPONDENCE COURSE

Continued from page 23

There is very little difference between commercially available products from *within the same class.* After individual bias is removed, products in each class are basically interchangeable with others intended for the same purpose. However, products intended specifically for hard or soft lenses are not interchangeable with each other.

Most manufacturers are now working to develop products that can be used interchangeably for both hard and soft lenses. Several have been marketed that are useful for soft and hard lenses, and the newer gas permeable lenses. However, the two basic categories of contact lens solutions that are currently available are those primarily for hard lenses, and those that are used for soft lenses.

Legal Guidelines

Legally, contact lens solutions are regulated by the Device Section (rather than the Drug Section) of the Pure Food, Drug and Cosmetic Act. Manufacturers are required to test all their products on the various commercially available soft contact lenses before they can claim that the product is safe. They must also list the names of the specific types of lenses on the label. Before a consumer selects a brand of soft contact lens solutions, he can readily determine if the product is safe for his type of lens.

Contact Lens Care

The care of hard contact lenses begins when they are removed from the eye. The wearer must first clean and rinse the lenses. Plain tap water can be used for cleaning and rinsing hard lenses, but not soft lenses. After the cleaning solution and debris have been rinsed off, the lenses are soaked overnight. The lenses are then wetted before insertion into the eye. A list of ingredients contained in various contact lens solutions appears in Tables 1 and 2.

Wetting Solutions

Wetting solutions are agents that facilitate the spread of fluid over the surface of a solid material. Cohesion and adhesion are two physical properties which determine whether an item is hydrophobic (water-repelling) or hydrophilic (water-attracting).

Cohesion is the force of attraction between two molecules of the same substance. For

TABLE 1
Ingredients in Contact Lens Solutions and Their Functions

BUFFERS:
- Boric Acid (BA)*
- Sodium bicarbonate ($NaHCO_3$)
- Sodium borate (NaB)
- Sodium hydroxide (NaOH)
- Sodium phosphate(s) (NaP)

CHELATING AGENT:
- Ethylenediamine tetraacetic acid (EDTA)

DETERGENTS:
- Octylphenoxyethanol (OCT)
- Tyloxapol (TYL)

ISOTONICITY AGENTS:
- Boric acid (BA)
- Potassium chloride (KCl)
- Sodium chloride (NaCl)

PRESERVATIVES:
- Benzalkonium chloride (BCl)
- Chlorhexidine (CH)
- Phenylmercuric nitrate (PMN)
- Sorbic acid (SA)
- Thimerosal (TH)

SURFACTANTS
- Bis-2-hydroxyethyl tallow ammonium chloride (BTA)
- Nonoxyl 15 (N15)
- Polyoxyl 40 (P40)
- Polysorbate (Polyoxyethylene) 21 (P21); 80 (P80)
- Poloxamer 407 (P407); 188 (P188)
- Polyvinyl alcohol (PVA)
- Povidone (polyvinylpyrolidine) (PPP)
- Tris-2-hydroxyethyl tallow ammonium chloride (TTA)

VISCOSITY AGENTS:
- Hydroxyethylcellulose (HEC)
- Hydroxypropyl methylcellulose (HPM)
- Methylcellulose (MC)
- Polyethylene glycol (PG)
- Polyvinyl alcohol (PVA)
- Propylene glycol (PRG)

*The abbreviations within parentheses are to simplify Table 2. They are not the chemical formulae for the compounds listed.

TABLE 2
Commercially Available Hard Contact Lens Solutions

WETTING	INGREDIENTS*
Barnes Hind	PVA, BCl, EDTA
Contique	PVA, BCl, EDTA, HPM
hy-FLOW	PVA, BCl, EDTA
Liquifilm	PVA, BCl, EDTA, HPM
Visalens	PVA, BCl, EDTA, HPM
CLEANING	
Boston Lens Cleaner	surfactant/friction agent
Clens	?, BCl, EDTA
Contique	?, BCl
d-film	?, BCl, EDTA, P407
Gel Clean	?, TH
LC-65	?, TH, EDTA
Lensine	?, BCl, EDTA
Miraflow	?, P407
Opti-Clean	?, P21, TH
Titan	?, BCl, EDTA
SOAKING	
Boston Lens Conditioning Solution	PVA, HEC, CH, EDTA
Contique	BCl, EDTA
Soakare	BCl, EDTA
Soquette	PVA, BCl, EDTA
WETTING AND SOAKING	
Barnes Hind	PVA, PPP, BCl, EDTA, HEC, OCT
Contique Dual-Wet	PVA, BCl, EDTA
Soaclens	TH, EDTA
Wet-N-Soak	PVA, BCl, EDTA
CLEANING AND SOAKING	
Barnes Hind	?, BCl, EDTA
Clean-N-Soak	?, PMN
Contique	?, BCl, EDTA
duo-Flow	P188, BCl, EDTA
Visalens	?, BCl, EDTA
WETTING, CLEANING AND SOAKING	
Contactisol	BCl, EDTA, HPM, N15
Lensine 5	PVA, BCl, EDTA, P407, HEC, PG
Lens-Mate	PVA, BCl, EDTA, HPM
One Solution	?, BCl, EDTA
Total	PVA, BCl, EDTA
ADJUNCT SOLUTIONS (for use directly into the eye)	
Adapt	PPP, TH, EDTA
Adapettes	PPP, TH, EDTA
Aqua-Flow	BCl, EDTA
Blink-N-Clean	P40, PG, CHL
Clerz 2	P407, EDTA, SA, HEC
Comfort drops	?, BCl, EDTA
Lens Lubricant (B&L)	PPP, TH, EDTA
Lens-Wet	PVA, TH, EDTA
Pre-Sert	PVA, BCl

*See Table 1 for explanation of ingredients.
? = contains unidentified ingredient(s)

example, iron molecules are strongly cohesive with other iron molecules, and water molecules are strongly cohesive with other water molecules. But iron molecules are not cohesive with water.

The second physical factor, **adhesion** is the force of attraction between molecules of different substances. If the force of adhesion between molecules on the surface of a drop of water and molecules on the surface of another substance is greater than the force of cohesion, the water will wet the substance and render it hydrophilic. If not, water will bead up on the surface (like rain drops on the hood of a freshly waxed automobile) and the substance is said to be hydrophobic. This occurs with hard contact lenses and the cornea, both of which are hydrophobic.

Wetting solutions make the hydrophobic contact lens surface more hydrophilic. This increases the lubricating and cushioning effect between the cornea and the lens, and between the lens and the eyelid.

Wetting solutions provide a viscous coating over the lens surface so that it does not come in direct contact with the finger during insertion. This prevents oily sebaceous deposits of the skin from transferring to the lens. These solutions also help to stabilize the lens on the fingertip to promote easier insertion. Without a wetting solution, water would not wet the lens and the lens would cause pain and discomfort when placed on the eye.

Tears contain various protein and polysaccharide complexes that assist in wetting contact lenses. But this is not adequate until five to fifteen minutes after the lens is inserted. Wetting solutions accomplish this until the tears take over.

Wetting solutions also serve as a cushion between the lens and the cornea, and prevent sudden movements of the lens when the individual turns his head quickly.

Continued on page 27

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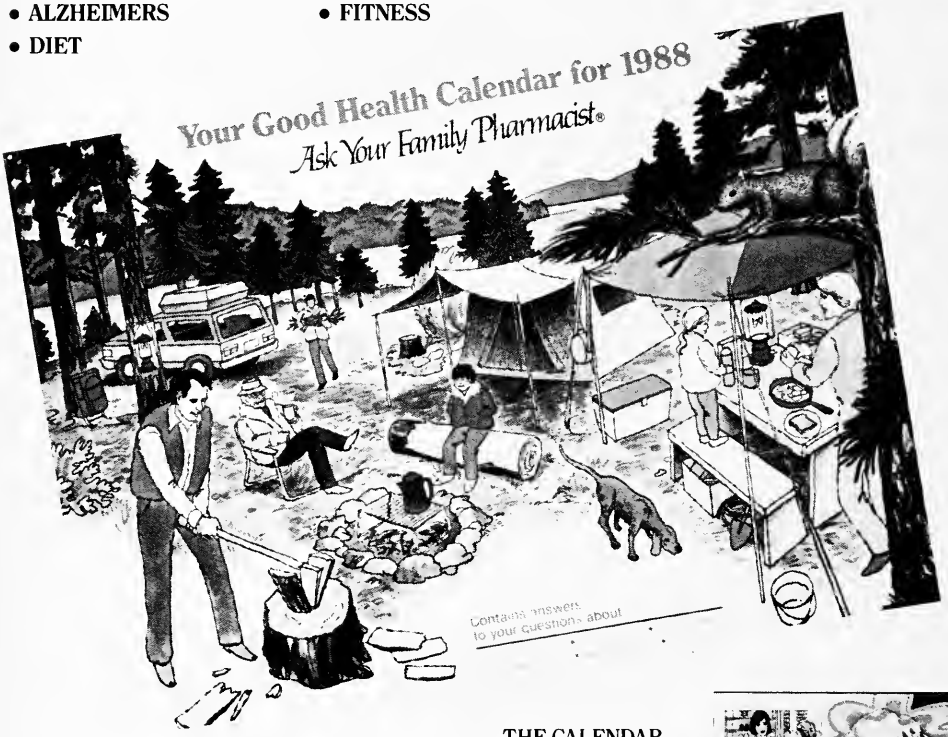

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CORRESPONDENCE COURSE

Continued from page 25

The most common ingredients used in wetting solutions are polyvinyl alcohol, methylcellulose, and other cellulose derivatives which increase the viscosity and aid in the cushioning effect. The most commonly used preservative has been thimerosal. Manufacturers are moving toward sorbic acid which is less irritating and sensitizing.

To review, wetting solutions are used prior to inserting hard lenses. They provide a hydrophilic surface to the lens, promote the spread of tears, and prevent the initial discomfort that would be experienced with hard lenses. They also serve as a cushion between the cornea and the lens, and between the lens and the eyelid.

Cleaning Solutions

Human tears consist of a number of substances secreted by various glands from within the structures of the eye and eyelid. These include hydrophic oils and proteinaceous residues which adhere to lenses. While they serve a useful purpose, they also provide a media for bacterial growth. Over time, they harden on the lens surface into rough deposits that irritate the cornea and the eyelids. If allowed to accumulate, they may cause corneal abrasion and increase chances for infection. The lenses may become cloudy, decreasing visual acuity.

Cleaning solutions contain detergents as their main ingredient, most commonly nonionic surfactants. These agents emulsify fats and oils and help solubilize other substances. Most cleaning solutions are used when the lens is out of the eye. There are a few solutions that are indicated specifically for application to the lens while it is inserted. Products not labeled specifically for such use should not be placed directly into the eye.

Cleaning solutions enhance the removal of debris through their detergent activity. Those intended for use after the lens is removed must be thoroughly rinsed off before the lens is reinserted to avoid irritation.

Continued on page 28

CORRESPONDENCE COURSE

Continued from page 27

The two most widely used nonionic detergents are octylphenoxyethanol and tyloxapol. Other ingredients include surfactants such as bis-2-hydroxyethyl tallow ammonium chloride (BTA), polyoxyl 40, polysorbate 80, polyoxamer 407, polyvinyl alcohol, povidone, and tris-2-hydroxyethyl tallow ammonium chloride. Buffering agents include boric acid, sodium borate, and the sodium phosphates. Isotonic agents are sodium and potassium chlorides.

Some cleaning solutions contain agents that increase their viscosity. These include the cellulose derivatives, polyethylene glycol, and propylene glycol. All cleaning solutions contain a preservative. Benzalkonium chloride, thimerosal and sorbic acid are the mainstays. Sorbic acid reportedly causes less irritation than thimerosal and its use is increasing, especially in solutions intended for soft lenses. The remaining ingredient in hard lens cleaning solutions is the chelating agent, ethylenediamine tetraacetic acid (EDTA). This will be discussed shortly.

Benzalkonium chloride is a cationic, surface active, quaternary ammonium germicide effective against many gram-positive organisms and a few gram-negative varieties. The exact mechanism for the antimicrobial action of benzalkonium chloride has not been determined. It is theorized that its surface active property interferes with the membrane integrity of susceptible organisms, or alternatively, that it interferes with respiration and glycolysis (carbohydrate breakdown) in susceptible organisms. In either instance, bacterial growth cannot proceed and replication is inhibited.

Benzalkonium chloride can also serve as a wetting agent because it lowers the surface tension of water. However, quaternary ammonium compounds have both a hydrophilic (cationic) portion and a hydrophobic (nonpolar) portion. When the hydrophilic end aligns with the water in tears, it can actually form another hydrophobic layer between the water molecule and the hydrophobic hard lens, making the lens even less wettable. Benzalkonium chloride is, therefore, contained in contact lens solutions only for its germicidal activity. It is used at the lowest effective strength, 0.12% (1:750).

EDTA is a calcium chelater. This means that it binds with calcium ions. However, it is used in contact lens solutions because it slightly decreases the integrity of microorganism cell walls, and increases their permeability for penetration by benzalkonium chloride. This enhances the germicidal activity of the quaternary ammonium compound, benzalkonium chloride.

Hard lenses may be cleaned by different techniques. **Spray cleaning** involves placing the lenses in a perforated holder that is held under running water which dislodges accumulated debris. **Hydraulic cleaning** utilizes a plastic holder containing separate baskets. A plunger device is pushed up and down, forcing a cleaning solution over and around the lenses.

Most hard lens wearers use **friction cleaning.** This involves rubbing the lenses between two fingers in a rotating manner, or placing the lens in the palm and rubbing with a finger from the other hand. Either way, a cleaning solution or gel is used on both sides of the lens at the same time.

A fourth method, **ultrasonic cleaning,** is the best but most expensive. It is done in the fitter's office rather than at home. The lenses are placed in a water bath and ultrasonic waves are passed over them which dislodge and remove debris.

In summary, cleaning solutions are used after removal of hard lenses to enhance elimination of mucus, protein, oils and debris, and to keep foreign material from adhering to the lenses. To lessen irritation, the individual must rinse the solution off completely before reinserting the lenses. Because cleaning solutions must be rinsed off, many manufacturers market cleaning solutions that are appropriate for both hard lens and soft lens use. This mainly involves lowering the concentration of the detergent.

Soaking Solutions

For the most part, soaking solutions consist of preservatives. They are used for holding the lenses between wearings. They are intended to prevent bacterial contamination of the lenses during storage, to dilute any remaining cleaning solution, and to leach out protein and mucus that the cleaning solution did not remove. Mucus and debris left on lenses overnight may also harden if the lenses become dry. Soaking solutions prevent this. They also help maintain the wetability of hard lenses and aid them in retaining their shape during storage.

Even though they are hydrophobic, hard lenses can absorb 1 to 3% of their weight in fluids. They dehydrate slightly when exposed to air, then rehydrate when placed in a soaking solution or back into the eye. If they are reinserted in dehydrated form, they may extract fluid from the cornea. This can cause discomfort and increase the chance for bacterial infection. Dehydrated

lenses are also flatter, so vision may be impaired until the lenses become rehydrated.

Soaking solutions should be poured fresh each time they are used. Any solution remaining in the storage chamber after the lenses have been removed should be flushed out before new solution is added. Reusing soaking solutions negates their effectiveness.

Lubricants And Viscosity Agents

These agents are similar to wetting solutions. Some are used prior to insertion for cushioning the lens against the cornea. Others are used to increase comfort while the lenses are being worn. It is claimed that these solutions clean and rewet the lens while it is still in the eye. Since hard lenses can absorb mucus and salts onto their surface to possibly cause blurred vision and enhance the chance for infection, these agents prevent potential build-up from occurring.

Most authorities and manufacturers prefer polyvinyl alcohol to the cellulose derivatives for both their lubricating and wetting solutions. The cellulose derivatives reportedly may interfere with regeneration of corneal epithelium in a few individuals. Polyvinyl alcohol is also considered to be a more effective wetting agent.

Multipurpose Hard Lens Solutions

Because of the large number of solutions involved in the care of hard lenses, there has been a trend in recent years toward developing multipurpose products. However, there is some controversy associated with the use of these solutions. Their proponents argue that they save the consumer money and are more convenient to use. Opponents advise against their use claiming that good lens cleaning solutions must contain enough surfactant and detergent to do the job. Trying to make soaking and wetting solutions of them requires lowering the concentrations of ingredients to the point that they do not contain appropriate amounts of cleaner. To do so will result in a solution that will irritate the eye.

There is less controversy associated with combination soaking and wetting solutions because these are basically similar. Opponents to their use state that the ingredients must perform divergent functions. The high concentration of perservatives in soaking solutions needed to kill bacteria can be irritating when used as wetting agents or lubricants. The high concentration of viscosity agents needed for wetting and lubricating can cause lenses to become "gummy," and result in discomfort if used for overnight storage. The anionic detergents needed for cleaning can cause irritation if they are placed directly into the eye. Millions of individuals disagree with these objections and have no problems with multipurpose solutions.

Adjunct Solutions

Pre-insertion solutions are intended to be used directly into the eye to prepare it for lens insertion. Most are highly viscous substances that decrease corneal sensitivity to lens application. Consumers should be reminded that the viscous solutions may cause blurred vision until they are diluted by tears. They should, therefore, not be applied to the eye immediately before driving or other events which require visual acuity.

Conditioners are used directly in the eye when tears are unable to sufficiently wet or cushion the lenses. They can be applied periodically, three to four times a day.

Consumer Advice

Contact lens wearers should inform their fitter if they experience sharp eye pain, excessive watering, persistent irritation or inflammation of the eye, sudden changes in vision, or spectacle blur that does not clear overnight. Spectacle blur is a phenomenon in which hard lenses worn for a number of hours cause corneal edema. This changes visual acuity for several minutes to several hours after lens removal until the eye returns to normal.

Since the air supply to the cornea is reduced during sleep, it is best to not insert hard lenses immediately upon awakening. When the eyelids are closed for a period of time, the cornea may become slightly swollen. Therefore, persons should wait ten to fifteen minutes before inserting the lenses. Occasionally during the day, they should blink hard and hold the eyes closed for several seconds to enhance better tear flow.

Placing a lens into the mouth to wet it before inserting it should not be done because the oral cavity is laden with bacteria. There is a possibility that pathogenic organisms will be introduced into the eye. Also, the person might swallow the lens.

Continued on page 31

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CORRESPONDENCE COURSE

Continued from page 29

The largest group of contact lens wearers is women between the ages of eighteen and twenty-four. Most of these women are also good cosmetic customers. It is estimated that they spend more money on cosmetics than non-wearers, so one topic of importance to consumer counseling regards restrictions on cosmetic use.

Aerosol hairsprays should be used *before* inserting contact lenses, and preferably should be applied in another room to avoid particles of the spray from attaching to the lenses.

Wearers should wash their hands thoroughly before handling the lenses, regardless of whether the lenses are the soft or hard variety. The hands should be thoroughly rinsed because soap can leave a residue on the lens.

Lenses should be inserted before applying makeup because oily substances in these preparations can stick to the fingers and smudge the lenses when they are handled. Conversely, lenses should be removed before removing makeup. Many ophthalmologists advise lens wearers to purchase makeup in the smallest containers. Once opened, the longer it sits around, the greater is the chance for bacterial contamination which can be transferred to the lenses.

Mascara and pearlized eye shadow should be avoided by women wearing hard lenses. Particles from these types of makeup can easily flake into the eye and cause considerable irritation and, possibly, corneal damage. It is less of a problem with the soft lenses, because soft lenses adhere to the cornea and particles do not readily penetrate underneath them.

Contact lens wearers who notice that their eyes are bloodshot should not use OTC vasoconstrictors without checking with their physician. Vasoconstrictors may mask a symptom that should be evaluated by a physician and treated. A summary of other important points of consumer advice for contact lens wearers is presented in Table 3.

This series on contact lenses and their solutions will conclude next month. Products intended specifically for soft lenses, and questions about lens solutions that are asked of pharmacists will be presented.

TABLE 3
Consumer Advice

- Do not use dishwashing detergents to clean hard lenses. (They may cause physical changes in the surface of the lens.)
- Do not use saliva to re-wet contact lenses. (The mouth is laden with bacteria which can be transferred to the lens.)
- Do not wipe hard lenses dry with tissue. (This may cause scratching.)
- Keep the contact lens solution tightly sealed between uses, and do not touch the dropper tip to any surface. (This reduces the chance of contaminating the solution.)
- Clean hard lenses as soon as they are removed from the eye. (This prevents deposits from becoming difficult to remove.)
- Follow proper sanitary procedures while inserting, removing, or caring for contact lenses. (This increases their life and reduces the chance for contaminating the eye.)
- Do not re-use any contact lens solution. Always use fresh solution. (This prevents growth of microorganisms in the solution and transfer to eye.)
- Do not use any contact lens solution beyond the expiration date on the bottle. (It may be decomposed or contaminated.)
- Contact your fitter if any of the following become persistent or excessively irritating:
  — Burning, itching, stinging or watering of the eye
  — Redness or dryness of the eye
  — Reduced ability to see clearly
  — Spectacle blur that does not clear up overnight.

  Any of these may be signals of eye damage or corneal hypoxia

CE TEST ON P. 32

CORRESPONDENCE COURSE QUIZ

Hard Contact Lenses

1. Polyvinyl alcohol is contained in contact lens solutions for which of the following functions?
   a. Buffer and/or isotonicity agent
   b. Chelating and/or enzyme cleaner
   c. Detergent and/or preservative
   d. Surfactant and/or viscosity agent

2. All of the following are multipurpose solutions indicated for wetting, cleaning and soaking hard contact lenses EXCEPT:
   a. Contactisol.
   b. Lens-Mate.
   c. Titan.
   d. Total.

3. Which of the following is intended for use directly into the eye of a person wearing hard contact lenses?
   a. Blink-N-Clean
   b. duo-Flow
   c. Lensine
   d. Visalens

4. Which of the following statements is true?
   a. Hard lenses are called contacts because they come in actual contact with the cornea.
   b. Hard lenses allow the transfer of tear secretions and oxygen to the cornea.
   c. Hard lens solutions, within each category of products, are basically interchangeable with others intended for the same purpose.
   d. Hard lenses must be heat sterilized between each wearing.

5. A person requesting an adjunct contact lens solution for use directly into the eye, who is known to be hypersensitive to thimerosal, should be advised to purchase:
   a. Adapettes
   b. Clerz 2
   c. Lens-Wet
   d. LC-65

6. The force of attraction between molecules of different substances is called:
   a. adhesion.
   b. capacity.
   c. cohesion.
   d. tonicity.

7. The phenomenon of spectacle blur caused by hard lenses is due to:
   a. corneal edema induced by the lenses.
   b. deposits that cake and harden on the lenses.
   c. placing the lenses in the wrong eyes.
   d. wearing spectacles over the lenses.

8. The basic purpose of wetting solutions is to make:
   a. hydrophobic contact lenses more hydrophilic.
   b. hydrophilic contact lenses more hydrophobic.

9. The unsupervised use of OTC vasoconstrictors in the persistently bloodshot eyes of a person wearing hard lenses is unwise, because vasoconstrictors:
   a. will discolor the hard lens.
   b. will alter the optics of the lens.
   c. will adhere to or ruin hard lenses.
   d. may mask a symptom that requires more appropriate therapy.

10. Which of the following is a chelating agent that reportedly enhances the action of benzalkonium chloride?
    a. BTA
    b. EDTA
    c. PVA
    d. TTA

NETWORK BUYING GROUP FORMED

Rugby Laboratories has been selected as the exclusive provider for the Pharmacy Network of North Carolina buying group. This plan, available through wholesalers or direct from Rugby, will be available on May 1. All drug wholesalers are expected to participate and should have program details by May 1.

This program includes the following:

- Special pricing on approximately 350 SKU's.
- An allowance of 15% on 150 high volume prescription items plus 100 O-T-C items which carry the Good Housekeeping Seal of Approval, plus 60 comparable vitamin products and an additional 75 single entity and combination vitamin products.
- A 5% quarterly discount on the entire Rugby line of products.

APhA OFFERS RETROVIR MONITORING ASSISTANCE

The American Pharmaceutical Association (APhA) is urging its members to assist the Burroughs Wellcome Company in monitoring the effectiveness of the unique distribution system it has established for its new drug Retrovir (zidovudine), the first drug approved by the Food and Drug Administration for treatment of Acquired Immune Deficiency Syndrome (AIDS).

The distribution system, that requires patient certification and patient designation of pharmacies which will distribute the drug, has been put into place because Burroughs Wellcome anticipates a somewhat limited supply of Retrovir for "a period of time in the near future." The system is designed to direct the drug to those patients at greatest need and those who are most likely to benefit from therapy.

Physicians wishing to prescribe Retrovir must submit an enrollment application for each new patient who is a candidate for the drug. These applications will be reviewed by medical specialists against a set of pre-established criteria. If the patient is enrolled, the physician will receive a patient enrollment number which must accompany the patient's Retrovir prescription.

Pharmacists will be able to dispense prescriptions only for those patients who have an enrollment number. A special toll-free number, (800) 332-1887, may be used by pharmacists to order Retrovir. Patient enrollment numbers will be verified prior to the acceptance of an order. Once an order is placed, a one-month supply of the drug will be shipped to the pharmacy for that patient. An additional quantity for that patient may not be ordered for 25 days.

Continued on page 34

Cut Out or Reproduce and Mail

CONTINUING PHARMACEUTICAL EDUCATION
Hard Contact Lens Solutions

- Attach Mailing label from **The Carolina Journal of Pharmacy** in space provided (or print name and address) and mail completed questionnaire to: NCPhA, P.O. Box 151, Chapel Hill, NC 27514.
- You may submit completed questionnaires on a monthly, quarterly, or less frequent basis depending on which procedure is most advantageous for you in your pharmacy practice.
- NCPhA will maintain a record of your completed CE credit hours. Upon successful completion of each program you shall receive a certificate for one hour of Board approved CE.
- If the answers to more than two questions are incorrect, the questionnaire will not be acceptable for CE credit. If your questionnaire is not accepted you will be notified within 10 days and given an opportunity to submit a second questionnaire.

Please circle correct answers

1. a b c d	*4. a b c d*	*7. a b c d*	*10. a b c d*	*13. a b c d*
2. a b c d	*5. a b c d*	*8. a b c d*	*11. a b c d*	*14. a b c d*
3. a b c d	*6. a b c d*	*9. a b c d*	*12. a b c d*	*15. a b c d*

Evaluation ☐ Excellent ☐ Good ☐ Fair ☐ Poor

How long did it take you to read the article and complete the exam? _____

APHA OFFERS

Continued from page 33

During the period of limited supply, Burroughs Wellcome will drop-ship Retrovir to pharmacies and bill through the wholesaler.

Because of the uniqueness of the distribution system, APhA is asking its members who will be dispensing Retrovir to report either to Burroughs Wellcome or to APhA any problems encountered or any suggestions for improvement in the system.

April 8, 1987

Greensboro News and Record
200 E. Market St.
Greensboro, NC 27401

To the editor:

As a practicing community pharmacist in Greensboro for many years, I feel I must take strong exception with Joe Graedon's implied recommendation of AARP's mail order prescription service in his column of April 7th. Mr. Graedon, although not a pharmacist himself, usually writes a very informative and generally accurate column, but this time he is failing to advise the prescription-buying consumer in his best interest. I share his concern about the soaring costs of prescription drugs, and the difficulty this causes for those on fixed incomes, but let us examine why mail order prescriptions, while perhaps cheaper, are really no bargain at all!

When you order your prescriptions by mail, you are giving up the personalized service of your community pharmacist, a drug expert who knows you and your family, and who often makes himself available to you on an emergency or 24 hour basis, either to fill your prescription or just to answer your questions. Because he keeps a patient profile on you, he knows what other drugs you may be taking that could interact dangerously with your new prescriptions and whether you might be allergic to the medication.

With mail order prescriptions, what do you do if the medicine is lost or stolen? What do you do until the medicine arrives in the mail? What if you need a new prescription filled at once or if your medicine runs out and you need a refill right away? Is it really a good idea to receive larger than normal quantities of medicine, which can lead to abuse and waste?

In view of all the potential health hazzards of mail order prescriptions, I cannot agree with Mr. Graedon's apparent opinion that these risks are outweighed by the "savings".

Sincerely,
J. Frank Burton, R.Ph.
Secretary, Guilford Co. Society of Pharmacists

Mrs. Lib Fearing is presented the Geigy "Pharmacist's Mate" Award by Gary Allman of Geigy Laboratories as President M. Keith Fearing looks on.

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In replying to "blind" ads, address Ad. No., Carolina Journal of Pharmacy, P.O. Box 151, Chapel Hill, NC 27514. Telephone (919) 967-2237.

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Continued on page 36

CLASSIFIEDS

Continued from page 35

oriented pharmacy located in Raeford, NC has been offered for immediate sale. This fine opportunity offers clinic hours and a positive cash flow from Day 1. If you have been considering owning your own pharmacy, this could be an outstanding opportunity for you! Financing available. Contact John Aumiller, Medicine Shoppe Int'l., Inc. at 1-800/325-1397.

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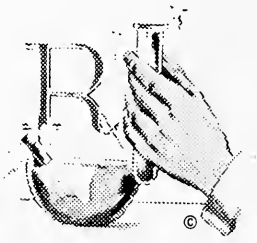
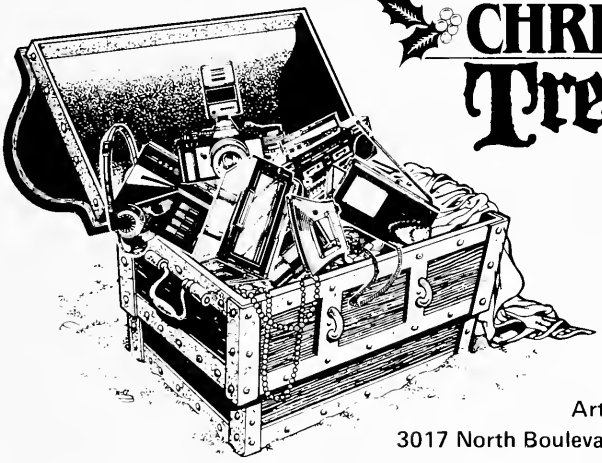
Special Thanks

The Student Branch of the NCPhA at the UNC School of Pharmacy would like to thank the following pharmacists for their thoughtful contributions and words of encouragement. Their assistance helped make our trip to the American Pharmaceutical Association Annual Convention in Chicago a huge success. Thank you!.

E.A. Brecht
Robert Lewis
Larry Denning
John Lowder
W.H. Randall
Bob Taylor





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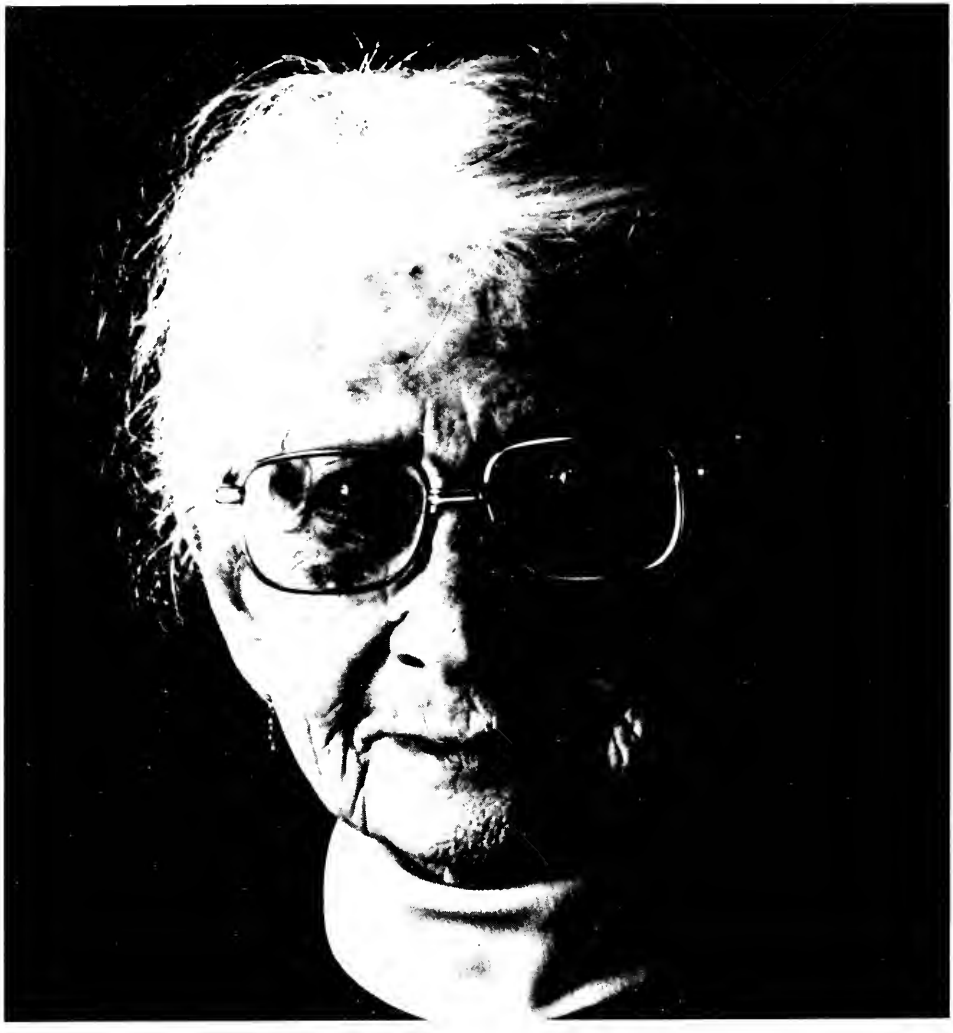

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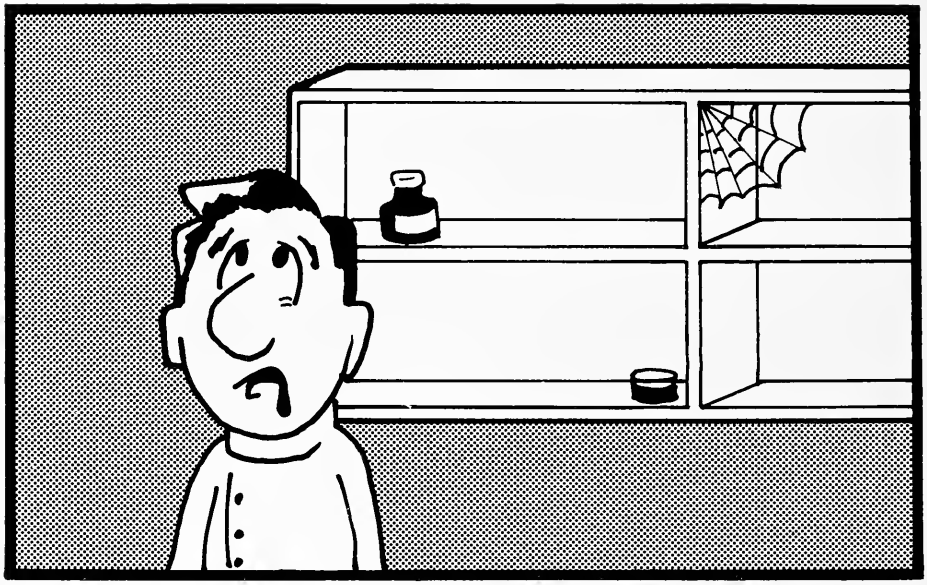
THE CAROLINA JOURNAL of PHARMACY

VOLUME 67 NUMBER 6
JUNE 1987

COAT OF ARMS OF THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION (SEE STORY ON PAGE 5)©



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CONTENTS

Coat of Arms Presented to Association 5
The Devisal of Arms 6
Report of the UNC School of Pharmacy and the Pharmacy Foundation of NC 11
Report of the UNC Student Branch 17
1987–1988 NCPhA Executive Committee 19
Invitation to Mortar-and-Pestle Dinner 20
State Board of Pharmacy 21
1942 Alumnus Address 23
Report of the National Legislative Committee 25
Local News 27
Report of the Mental Health Committee 29
Report of the Social & Economic Relations Committee 31
Report of the Community Pharmacy Committee 32
Report of the Women in Pharmacy Committee 35
Weddings and Births 37
Classified Advertising 39

ADVERTISERS

Burroughs Assets Management Company 14
Colorcraft 35
Dr. T. C. Smith Co./W.H. King Drug ..... Back Cover
Eli Lilly and Company 4
Geer Drug 30
Jefferson-Pilot 2
Justice Drug Division 1
Kendall Drug Company ..... Inside Front Cover
Knoll Pharmaceuticals ..... 33 & 34
Lawrence Pharmaceuticals 12
Owens & Minor ..... Inside Back Cover
PharmaSTAT, Inc. 10
Savage Laboratories 28
Store Fixtures & Planning, Inc. 22
The Upjohn Company 24
Washington National Insurance Company 16

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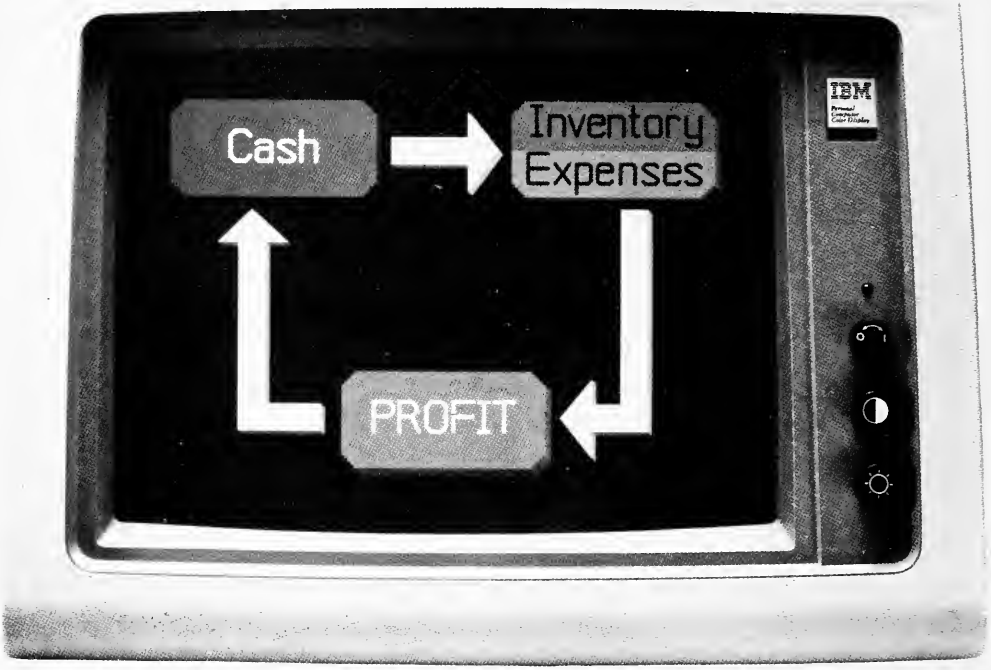

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COAT OF ARMS PRESENTED TO ASSOCIATION

At an impressive ceremony highlighting the Opening Session Banquet of the 107th Annual Convention of the North Carolina Pharmaceutical Association, the Coat of Arms devised for the Association was presented to President M. Keith Fearing, Jr.

John P.B. Brooke-Little, Esquire, Norroy and Ulster King of Arms, the agent for the Devisal made the presentation and explained the various components of the Devisal. The North Carolina Pharmaceutical Association is the first professional association in the United States to have a coat of arms. Other corporate bodies in the US to have Arms devised for them include the City of Kinston, NC, the Town of Manteo, NC, the Commonwealth of Virginia, the Senate of Virginia, Barclays Bank of California and the City of Williamsburg, VA.

The original document, hand drawn and lettered on sheepskin, will be framed and mounted in the office of the Association in the Institute of Pharmacy in Chapel Hill where visitors are welcome to examine it. Proper use of the Arms is explained in detail in the accompanying article.

John P.B. Brooke-Little, Norroy and Ulster of Arms, assisted by Colonel Robert R. Jeter, Jr., Chief of Staff, 108th Division, US Army Reserves.

Mr. and Mrs. Brooke-Little and M. Keith Fearing display the Devisal of Arms at the Opening Banquet of the Annual Convention.

THE DEVISAL OF ARMS

by John P.B. Brooke-Little, Esqre.
C.V.O., M.A., F.S.A.
Norroy and Ulster King of Arms
Treasurer and Librarian
The College of Arms
London

"What Is a Devisal of Arms?"

In the 1950's one or two American corporate bodies expressed an interest in heraldry and a desire to have English arms granted to them. This was flattering and was something which the English heralds would have liked to do, but the granting of arms is a facet of the royal prerogative and the Queen's writ does not run in the United States.

After much thought, and as a result of inquiries made at the diplomatic level, it was agreed that the English Kings of Arms of the College of Arms, London, might grant to American towns, but in making these grants, they would be acting on their own and not in pursuance of an Earl Marshal's Warrant, nor with the authority of the Crown. The arms so granted would be treated in every way as an ordinary grant. The Officers of arms would act as agents for their clients in the usual way, the fees would be the same as on other grants of arms; the arms would have to be unique and would be placed on record as is the case with other grants, thus they would become part of the whole corpus of English heraldry.

Just two conditions were laid down; the Governor of the State in which the body requesting arms was situated must signify his approval and the grant was to be called a Devisal, so as to indicate that it differed slightly from, but was in no way inferior to, an ordinary grant. Naturally, the usual decoration at the head of a Patent of Arms (the arms of the Queen, the Earl Marshal and the College of Arms) was not appropriate, so a Devisal would be headed by paintings of either the crowns of the three devising kings, or their arms. The Patent could be embellished with a decorative border and initial letter, and could be written in an italic, or foundational hand, rather than the usual copperplate but, as with a grant of arms, the cost of such embellishments would have to be underwritten by the grantee.

The devising of arms to American Towns was instituted by an Earl Marshal's Warrant dated 25th July 1960. By a further Warrant dated 1st February 1962, the devising of arms was extended to embrace other worthy, respectable and eminent corporations, such as banks, colleges, ecclesiastical foundations, commercial firms and, of course, various types of local authority.

Why a Devisal?

There is no law of arms in the United States, nor is there any authority, except the Army Institute of Heraldry officially concerned with military heraldry and insignia, which can assign arms. This means that any corporate body in America can assume, bear and copyright a device which can be in the form of arms. Why then should corporations turn to the English Heraldic Authority for a Devisal?

I think the reasons are many and various and although I shall list them seriatim, they are in no particular order of precedence as the only precedence there can be is in the reckoning of the devisee.

1. America was once, for better or for worse, a collection of English colonies. The ties of the motherland have long been severed and nationals of many other countries have planted their roots in the United States, yet the historical fact and the feeling of national kinship remain. In some states, where the names of cities, towns, counties and townships reflect colonial days, the feeling is stronger than in others. This is understandable, yet even in what might be called non-British areas, the common language forms a common bond. I believe that the American colonies broke away from Britain as a grown child will break away from its family if kept in too strict tutelage for too long. After the fight for freedom, there remain no really hard feelings; nothing can permanently sever the old family ties and after a while all is forgotten and forgiven. This is what has happened; the emancipated child has grown and become more cosmopolitan and much richer

than its parents, as children the world over often do; yet it retains a lingering affection for its parents, just as parents cannot but love and admire those who have flown the nest. That political conditions make reciprocal affection very desirable should not blind us to the fact that such closeness is natural and sincere and that jealousies and criticisms are an unhappy but inevitable concommittant of mutual admiration and affection, and never should be considered as more than one of the ephemera of human nature.

2. Heraldry is an ancient and accepted form of ordered symbolism not just in Britain but throughout Europe. For this reason, there is a natural reluctance for anyone, whether an individual or a corporate body, to assume arms unless such arms are authoritative. This poses a problem for those American corporate bodies who think this way, for to whom can they turn to give their arms that authority and *cachet* which, perhaps almost subconsciously, they seek? The English heralds have supplied an answer. It is not a perfect one, but I believe it is a good one and certainly the best possible.

3. The officers of arms have been designing arms in the English tradition for almost eight hundred years. They are professionals and know the true meaning and purpose of heraldry; they understand its intricacies, its limitations and its possibilities. They know that a well designed coat of arms should be simple, easily recognizable and timeless. It is the timeless quality of the design and symbolism of heraldic emblems which is where its true value lies. The modern logo is a contemporary, immediate rival to heraldry, for it is not a permanent recorded device; today it is new, bright and fresh but tomorrow it is out of date, and it is usually so expensive. A public relations firm could easily charge $20,000.00 for what is called the "development" of a logo, yet the fees on a grant or devisal of arms are laid down by the Earl Marshal (the Duke of Norfolk) and may not be altered.

4. Thus the cost could be another reason why English heraldry is preferred to modern logos. "How," the Americans ask, "can the heralds produce a super design enshrined in a beautiful document for such a relatively small price when design firms charge from $20,000.00 upwards for a simple logo?" The answer is relatively simple; the Crown, through the Earl Marshal, ordains the fees which are paid on a grant or devisal of arms. In essence these bear no relation either to the fees charged by so-called rival enterprises or to current commercial rates. Work has to be paid for, but heavy overheads do not have to be covered nor large profits made.

5. Good heraldry is versatile and full of possibilities. The heraldric artist and designer has far more freedom than is generally supposed. For instance, if a town were devised a coat of arms consisting of three red eagles displayed on a gold shield, the conventions of heraldry ordain that the shield shall be recognizably gold or yellow and the eagles a reasonably bright red; that the eagles be disposed two at the top of the shield and one at the bottom and that they be "displayed", that is as if flung against a wall, with wings outspread and heads facing the heraldic right, (the left as you observe a shield). What heraldic convention does not demand is that the eagles shall be fat or thin, have a full complement of wing feathers or a symbolic fan, look happy, miserable or fierce. It does not mind whether they are painted flat or shaded to suggest moulding. It is not concerned with the size of the birds as long as they can be seen to be what they are. Furthermore, although on the actual document devising the arms the artist will show the eagles on a shield whose shape pleases him, this is of no significance. The arms may be borne on any shape or type of shield as long as it is a shield. This means that if the arms were to be carved in stone, in order to adorn a modern rectangular edifice, they would probably be depicted on a shield shaped like a flat-iron whose simple, severe lines would best harmonise with those of the building; but, if the arms were to head the menu of an 18th century bi-centennial dinner, they would probably look better in an ornate shield of the period with gold piecrust edges. Heraldry should not be a cross to a designer, but a challenge and an inspiration.

What Is a Coat of Arms?

Strictly speaking, a coat of arms consists of a shield on which are displayed, in an orderly and symbolic form, various devices arranged according to time honoured conventions and which form a unique, attractive and easily recognizable mark of identity. Such devices were first used in the early 13th century by Norman knights and nobles on their shields and also on their coat armour, a long surcoat worn over their mail. It was from this latter custom that the term "coat of arms", or more briefly, just "arms", became current. About a century later crests, devices modelled onto the helmet became popular and were shown, together with the

Continued on page 8

DEVISAL OF ARMS

Continued from page 7

helmet and short cloak or mantling attached to it, over the shield of arms in pictorial representations. Still later, in the late 15th century, some coats of arms were supported on either side by creatures or human beings which, with devastating logic, were called supporters. Supporters were sparingly granted and devised but counties, cities and towns are entitled to them. A motto may always be depicted on a scroll beneath the arms but this does not form part of the actual grant or devisal. This means that a motto does not have to be unique; indeed, many families and corporations share such classic mottoes such as *Dum spiro spero.* When all these various devices are shown together they form what is sometimes called a complete coat of arms although the proper term is an achievement of arms.

There is also a subsidiary device called a badge. Badges were originally used by great nobles to mark their retainers, and articles of property and were also sometimes used as a motif in decoration and on standards. Today, some of these early uses of badges are still pertinent but corporations find another and perhaps even more important use for a badge. It is this: a person or corporation which bears arms may neither license nor permit any other person or body to use their arms. Arms are essentially personal devices; ensigns of honour peculiar to their owner. However, it often happens that, from the very best of motives, people may want to use the arms of another. For example, a local historical society, sports group or similar organization may want to use a symbol of the town or county whose name it bears. In such cases it would be quite proper for the town or county to license the use of its badge, but it would be contrary to the love and tradition of heraldry for it to permit the use of its arms. Badges can also be used on ties, blazer pockets, buttons, souvenirs and the like. The illustration at the end details the component parts of an achievement of arms.

How Can Arms Be Used?

The short answer to this question is "anywhere where they can beautify and identify dignity and propriety", but obviously over the centuries, certain uses have become traditional and acceptable, whilst others are considered offensive or vulgar. For example, the use of the American flag as a motif in articles of clothing is not only considered bad taste by loyal Americans but their feelings are supported by a Federal law. So it is, to a slightly lesser degree, with coats of arms. I have listed below a few of the chief ways in which a corporation to which arms have been devised may properly use them.

1. ON A BANNER. This is a rectangular flag (the dimensions will be dictated by the weather conditions and height of the mast) on which the arms on the shield will be shown throughout. If the corporation has a badge, a standard may be flown. This is a long tapering flag (say 1:3) with the arms in the hoist and the badge, motto and, if desired, crest, displayed on the fly.

2. ON THE COMMON SEAL. This is one of the most ancient uses for arms. It is quite correct to have the full achievement engraved on the seal but this argues a heavy and expensive press. For this reason, many corporations use just the arms, or the arms with the crest, *sans* helm and mantling on their seals.

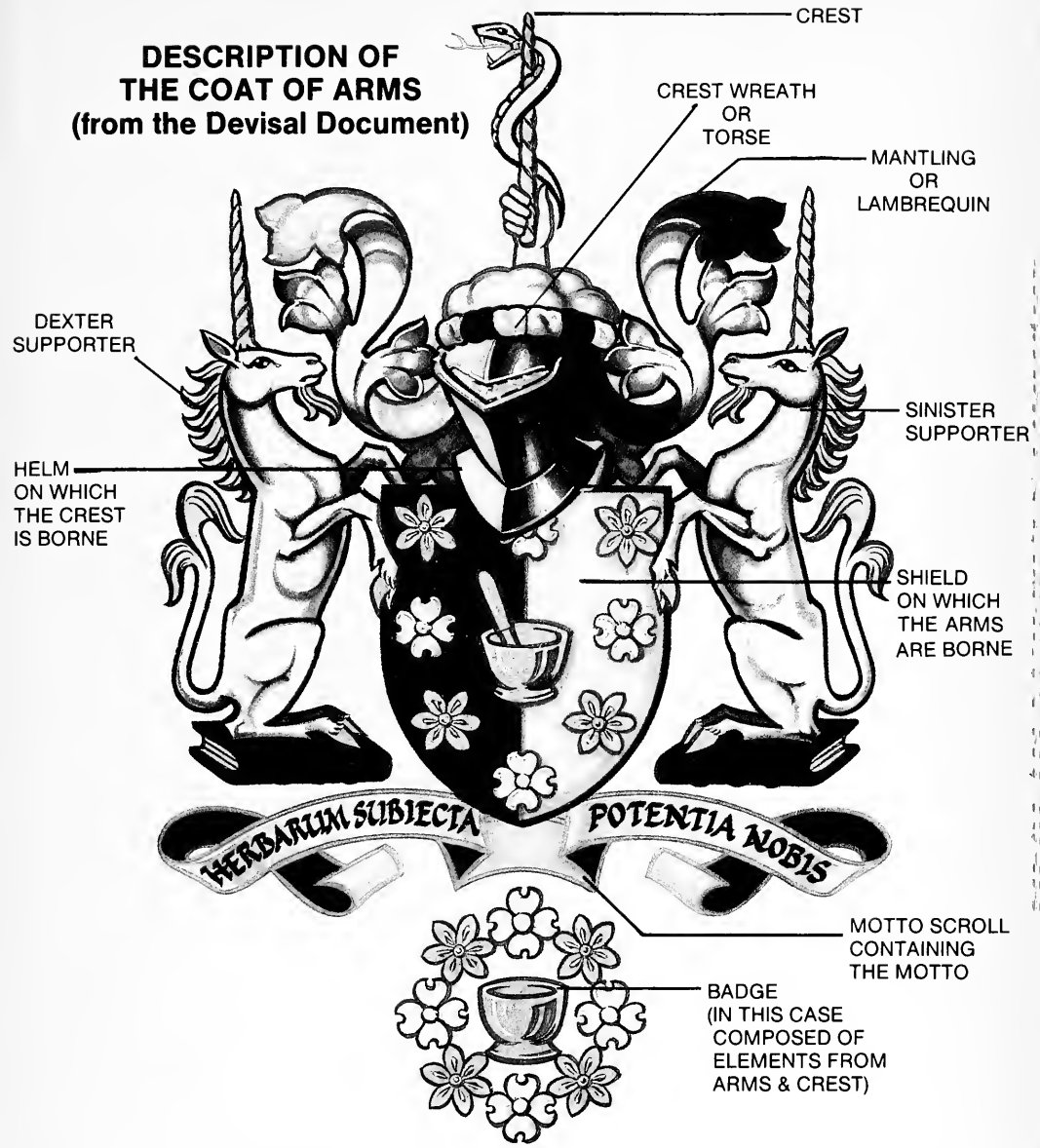
3. ON STATIONERY. While it is considered vulgar for an individual to have his full achievement of arms on his stationery (a crest or badge is all that propriety permits) it is usual for a corporation to display the achievement on writing paper, envelopes, invitations, *pro formas* and so forth.

4. ON CORPORATE PROPERTY. Either the full achievement, shield alone, or badge may be used to mark the property of the corporation. The nature of the display will dictate what insignia shall be employed. Thus, the badge would be used on buttons and cuttlery but the full achievement on vehicles, or carved in stone over the entrance to a school.

5. ON SOUVENIRS. The citizens who live under the jurisdiction of a corporation or, if it is an incorporated company, those who work for it, should be encouraged to use the badge. This they may do on ties, head scarves, blazer pockets and small flags. Souvenirs such as post cards, ash trays and mugs can properly be emblazoned with the full achievement, as long as the name of the corporation appears in conjunction with the arms.

There are, of course, many other ways in which the achievement or parts of it can be displayed and used and I shall be happy to advise on such uses, as indeed on any aspect of acquiring, using and enjoying a properly devised coat of arms. Heraldry is a noble, dignified and ancient art or science, but it is also and essentially fun; it is there to be enjoyed by as many people as possible.

DESCRIPTION OF THE COAT OF ARMS (from the Devisal Document)



The design of the Devisal of Arms for the North Carolina Pharmaceutical Association is as follows: For Arms; per pale Azure and Gules a Mortar therein a Pestle bendwise within an Orle of four Sassafras Flowers Or alternating with as many Dogwood Flowers Argent and for the Crest upon a Helm with a Wreath Argent Azure and Gules Issuant from Clouds a dexter Hand proper grasping an Unicorn's Horn erect Or environed by a Serpent Argent Mantled Parted Gules and Azure doubled Argent and for Supporters on either side an Unicorn Argent armed unguled and crined Or sejeant on a Book Sable the spine manifest garnished gold and for a Device or Badge A Mortar Or within a Circlet composed of four Dogwood Flowers Argent and as many Sassafras Flowers Gold.

Editor's note. Translation of the Motto "Herbarum Subjecta Potentia Nobis" is "With knowledge of herbs, we have the potential to cure."

June, 1987

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REPORT OF THE UNC AT CHAPEL HILL SCHOOL OF PHARMACY AND THE PHARMACY FOUNDATION OF NORTH CAROLINA, INC. PRESENTED TO THE NORTH CAROLINA PHARMACEUTICAL ASSOCIATION ANNUAL MEETING Charlotte, NC April 24, 1987

by Tom S. Miya, Ph.D., Dean, School of Pharmacy, Secretary, Pharmacy Foundation of North Carolina, Inc.

It is a pleasure for me to present this report to this, the 107th convention of the North Carolina Pharmaceutical Association. Before discussing the past year's activities of the School I want to remind you of its history and some of the changes which have recently occurred.

Pharmacy education at UNC began in 1880 with ten students in medicine and pharmacy. The School was officially established in 1897. During the period 1897–1959 the School was housed in Old West, Person and Howell Hall and from 1959 in Beard Hall. In recent years considerable fiscal resources have been expended and continue to be expended for renovations of Beard Hall to accommodate changing needs and growth.

Table I shows the growth pattern in just the last ten years. The table, however, does not reflect the knowledge explosion and attending technological advances with which we have had to cope.

Tom S. Miya, Dean, UNC School of Pharmacy

TABLE I
Ten-Year Quantitative Growth Comparisons 1976–77 through 1986–87

	1976–77	1985–86	1986–87
Faculty	32	54	
AHEC Faculty	3	18	
B.S. Students	581 (1–4 prog)[a]	501 (2–3 prog)[b]	
Pharm.D. Students		24 (2 yrs)	
Graduate Students	35	72	
Visiting Scholars, Residents/Fellows	5	18	
Support Staff	20	26	
Non-State Funds	$281,334[c]		$1.2 Million[d] (1st 3 qtrs)
Scholarly Publications	60	110	

[a]Class size 145
[b]Class size 166
[c]Includes Capitation Grant of $197,266
[d]No Capitation funds

An interesting demographic observation is that we have gone from 49% women in the student body in 1976–77 to 65% in 1985–86.

Neither time nor space allows for a detailed report of all of the School's activities. However, several significant activities are brought to your attention. Our Strategic Planning Process (Planning for Excellence) and the resulting report were completed and will be distributed shortly.

Continued on page 13

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REPORT

Continued from page 11

Many of you were involved in its development and members of the Practitioner-Educator Advisory Committee have had an opportunity to react to it. The significance of the report is two-fold. The process itself has informed and sensitized all of us involved to the rapidly changing environment. Secondly, the Plan is a working document with many specific recommendations with suggested timetables to accomplish them. I will shortly be appointing an oversight committee to keep the School moving in the direction of our Strategic Plan. The Plan is geared to what is happening to U.S. demography and the health care system and what is projected to happen. Unless we prepare our students and faculty to meet the challenges of change, we will indeed be in great difficulty.

With financial support from the Pharmacy Foundation of North Carolina, Inc. the School established a Pharmacy Policy Research Laboratory, the first of its kind in the nation. The Laboratory is designed to organize and monitor economic, social and demographic factors vital to pharmacy. It will combine scholarly research techniques with objective analyses to meet the needs of decision-makers and planners in industry, associations and colleges. Dr. Jane Osterhaus of the Division of Pharmacy Administration will direct the activities of the Laboratory. The creation of this unit follows on the heels of the University-unique Radiosynthesis Laboratory directed by Dr. Steven Wyrick and the Natural Products Laboratory directed by Dr. K. H. Lee. Both of these laboratories reside in the Division of Medicinal Chemistry and have been highly successful.

There have been unprecedented Continuing Education activites directed by Dr. Betty Dennis. I would be remiss if I did not mention all of our AHEC pharmacists who have contributed to CE programs. On May 19–20 1987 the School will be hosting an invitational symposium/workshop on continuing education with selected national leaders participating. Special funds from the Vice Chancellor's Office were made available to mount this program. With a competitive William S. Apple Pharmacy Practitioner Management Award, the Division of Pharmacy Administration in collaboration with the School of Business will be hosting a group of 20 practitioners for a week-long workshop in June. The participants were selected by the American Pharmaceutical Association from a nationwide pool.

Among many faculty activities was the development of an educational film on pharmacist impairment funded by the Pharmacy Foundation of North Carolina, Inc. and a recruitment film targeted to high school chemistry classes developed through a grant from the American Association of Colleges of Pharmacy. Both films are so well done that we anticipate nationwide distribution and recognition.

The Office of Academic Program Development, directed by A. Wayne Pittman, has made significant contributions to the School's educational mission. These range from improved

Continued on page 14

TABLE II
Selected Financial Data 1976–77 — 1985–86
Pharmacy Foundation of North Carolina, Inc.

Period	Total Additions[a]	Total Expenses	Value	
			Book	Market
1976–77	$ 58,244	$42,017	$ 525,872	$ 495,479
1977–78	26,272	37,601	514,543	481,209
1978–79	37,270	39,066	512,747	484,127
1979–80	68,250	39,084	541,913	503,294
1980–81	81,584	33,893	589,604	556,861
1981–82	75,967	28,177	637,394	567,987
1982–83	122,349	45,709	714,034	884,158
1983–84	233,112	47,978	899,168	981,614
1984–85	423,305	73,477	1,248,996	1,515,374
1985–86	296,779	98,974	1,446,801	2,038,967

[a]Gifts and investment income

REPORT

Continued from page 13

course/instructor evaluation to computers for classroom use to plans and implementation of more effective means of instruction. These activities, we believe, are not only cost-effective, but a necessity. Your continuing support makes this possible.

The second Hollingsworth Scholar was selected to receive $5,000/year until completion of the first professional degree. The Scholar is selected from the incoming third-year class. The Scholar award was made possible by a bequest from Mary Hollingsworth of Mt. Airy in memory of Joe Hollingsworth. This year's recipient was Laura Elizabeth Hundley of Boone who joins Patricia Leigh Parker of West Jefferson as a Hollingsworth Scholar.

There are many items untouched. I could report to you all of the national honors and recognition of our faculty, the numbers of papers and book chapters published and about the highly successful annual meeting of the Pharmacy Alumni Association where the 50-year graduates were specially recognized and where Barney Paul Woodard received the Distinguished Alumni Award. It will suffice now to report to this convention that I have never been more excited about the future progress of your school.

Pharmacy Foundation of North Carolina, Inc.

The Foundation completed 40 years of operation in 1986. It had its beginning in the early 1940s, an initiative of this Association. It was incorporated in 1946 as the North Carolina Pharmaceutical Research Foundation and underwent a name change to the Pharmacy Foundation of North Carolina, Inc. in 1982.

From the initial personal contributions of almost $7,000 by the Board of Directors of the Foundation in 1947 the assets have grown steadily from contributions, bequests and industry support and investments. Table II shows a year-by-year financial statement from 1976 through June 30, 1986. The current market value of the Foundation's assets is significantly greater than shown at the close of our fiscal year.

It should be noted that the expenses, with the exception of two years, have been significantly lower than the total additions. Together with a prudent but aggressive investment policy and excellent fund management, the Foundation is becoming an even greater force in the School's pursuit of excellence.

The 40th Annual Meeting of the Board of Directors was held on September 24 and chaired

by President Ralph P. Rogers. The luncheon was highlighted by a presentation by Vice Chancellor for Health Affairs, H. Garland Hershey.

The Directors elected Ralph Rogers and Ed Brecht to serve additional terms to expire in 1991. Four additional members will be elected by the NCPhA membership. The officers for the year are: President, Ralph P. Rogers; Vice President, Ed Brecht; Secretary, Tom Miya. The Executive Committee members are: Paul Bissette, Charles Blanton, Pam Joyner, and ex officio members Rogers, Brecht and Miya. The Investment Committee members are: Ed Brecht, Tom Burgiss, William Edmondson, Ralph Rogers and Tom Miya.

President Rogers also appointed a committee to make a comprehensive study of the Constitution and By-Laws of the Foundation. The members are: W. J. Smith, Chairman; James Creech, and C. M. Whitehead.

In other significant action, the Directors approved start-up funds of $15,000 for a Pharmacy Policy Research Laboratory, the first of its kind in the nation. It is designed to organize and monitor economic, social and demographic factors vital to pharmacy. The Laboratory is expected to be self-sufficient. Dr. Jane Osterhaus of the Division of Pharmacy Administration is its Director. Continuing annual expenditures of $10,000 for the establishment of a Hollingsworth Faculty Scholar was also approved.

As it was when it was created, the Pharmacy Foundation of North Carolina, Inc. continues to be a driving force for progress not only for the UNC School of Pharmacy but for the profession of pharmacy.

The current Directors are:

Directors	Term Expires
P. B. Bissette, Jr.	1988
C. D. Blanton, Jr.	1990
E. A. Brecht, Vice President	1991
T. R. Burgiss	1989
Laura G. Burnham	1989
J. L. Creech	1988
D. R. Davis	1987
H. V. Day	1987
W. H. Edmondson	1990
H. Q. Ferguson	1988
Sara J. Hackney	1990
J. C. Hood	1989
Pamela U. Joyner	1990
H. W. Lynch	1988
W. W. Moose	1990
Jean B. Provo	1987
E. J. Rabil	1989
R. P. Rogers, Jr., President	1991
W. J. Smith	1987
J. P. Tunstall	1989
W. A. West	1990
L. M. Whaley	1989
C. M. Whitehead	1988
J. D. Whitehead III	1988
F. F. Yarborough	1987

The Directors were saddened by the report of the passing of three past Directors: W. Thomas Boone, Ahoskie; Thomas Reamer, Durham; and John T. Stevenson, Elizabeth City. Memorial funds have been established should friends wish to make contributions.

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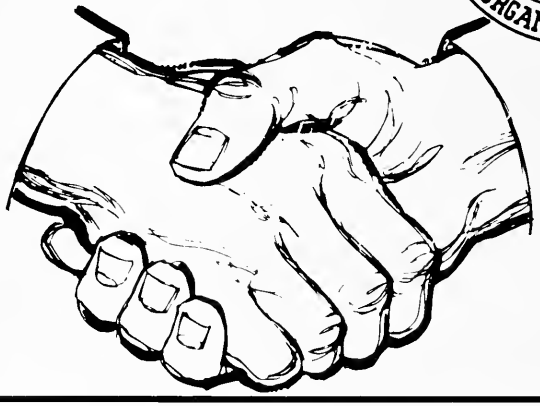

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UNC STUDENT BRANCH REPORT REPORTED AT THE 107TH ANNUAL NCPHA CONVENTION Charlotte, North Carolina April 22–25, 1987

by Allison Uzzell, President

I feel that the Student Branch has had a very productive and successful year. This year we have made it our goal to get as many students involved in our organization as possible. I believe that we have done a good job in attaining this goal. The year began with a pig pickin' for the students and faculty. It gave everyone the chance to visit with old friends and get to know some of the incoming ⅗'s. Once classes started, we kicked off our membership drive. As an extra incentive for joining the Student Branches, we staged a class competition. The class with the highest percentage of membership received a $50 prize. The membership drive lasted until the first of November, and we ended up with 350 members which is about 71% of our student body.

As usual we held several clinics during the year. Among them were screening clinics for diabetes, hypertension, and osteoporosis. These clinics are very important for the public as well as the students. For many it is the first opportunity to find out what the profession of pharmacy is about. The clinics give the students a chance to apply what they learn in the classroom while enabling them to practice their counseling techniques.

One of our major projects for the fall semester really picked up on the idea behind these clinics. This project was the patient counseling competition. The competition was started at UNC last year and was further expanded this year. Twenty five students participated in this program. Students first compete on a local level and then the winner goes on to compete at the national level. On the local level there are two rounds. In each round students were given prescriptions and then counseled their patients on their medication. These scenarios were videotaped and then judged by the faculty and participating pharmacists. The top 12 winners received USP-DI's and went on to compete in the final round. The top 4 winners were announced at an awards ceremony held at the Institute of Pharmacy. They were each awarded cash prizes. The winner of the competition, Susan Chitty, also received a trip to Chicago to compete in the national competition. She did an outstanding job in representing our school.

Allison Uzzell, President

Last fall eight of our members attended the regions midyear meeting in Memphis, TN. Everyone who attended learned a lot from the meeting, not to mention the fun we had meeting the students from other schools in our region. I think everyone left Memphis really appreciating the good program we have at UNC. Several of the proposals that came from our region went on to be approved at the national convention in Chicago. Delegates from our region were also elected at this meeting. Hopefully in the near future we will have members of our branch to run for offices at the regional or national level.

Well, in December we had a short break, but things started back in full swing at the beginning of January. The Student Branch along with pharmacy school senate sponsored an ice skating party at Hillsborough for the student body. We had a large turnout, and everyone especially enjoyed the lessons that our advisor, Dr. Dennis Williams, gave on the proper way to fall.

Continued on page 18

UNC STUDENT

Continued from page 17

During the spring semester a major emphasis was placed on a new program which we hope to put in action next fall. The program will be to educate ourselves and elementary school students on drug abuse. This semester students contacted various resources and gathered information for us to use in our program. We also had a speaker from the Orange County Mental Health Association come to one of our meetings to help us in developing this program. She had several interesting ideas (i.e., puppet shows and skits) which we plan to use.

A few short weeks ago 17 students represented UNC at the national APhA convention in Chicago. Again we attended some very important meetings on our policy proposals, and this time elected national officers. All of our hard work really paid off in Chicago. Our chapter was one of 17 to receive a chapter achievement award. At the awards ceremony we were presented a plaque to hang in our school.

The officers of the Student Branch are already working hard on our plans for the summer and next year. During the summer we will be publishing an orientation handbook for the incoming ⅗'s, and we are planning a picnic for the students and faculty of both UNC and Campbell University.

Finally, I would like to thank a few people who have been very important to our organization: Dean Miya; Dr. Cocolas; Dennis Williams, and the Institute of Pharmacy staff; Mr. and Mrs. Mebane, Mrs. Cocolas, and Laura who were always there with new ideas when we ran short.

WRITTEN ORDERS WITH STRANGE SOUNDING NAMES

(Thanks to W.J. Smith)

One of the interesting facets of Pharmacy is the occasional opportunity to decipher a written order with unusual spelling of an over-the-counter drug product. Generally, the customer can supply some basic information, such as tablet, liquid or ointment, treatment use, etc., which are helpful in identifying the product desired.

A request for a bottle of building and loan tonic presented a problem until the customer stated the label had pictured drops of blood. A bottle of BLOOD LIFE filled the bill. The label, in addition to the red blood drops, included BL in large type.

Some pharmacists maintain collections of these unusual written orders. For years, Pharmacist Haywood Jones maintained such a collection in an album at Zebulon Drug Company. Recently, Pharmacist Jones permitted us to screen the album which includes several hundred orders compiled over a twenty year period.

Here is a sample of 20 orders. See page 22 for proper identification. If you identified all 20 products, go to the head of the class.

1. GODCORDIE
2. OIL COCK PLASTER
3. SCOTCH MULTION
4. KAMFER
5. PRORIZE
6. DUE EASE
7. LITTY PINKHENEY
8. TETREAM GREASE
9. ASIE FIZET
10. SUSAN SYRUP
11. MAY LOCK
12. CAFERVENL LINKER
13. BARKING WORM KILL
14. 3 BEES BLOOD TONIC
15. DOOR BELL SOLUTION
16. LAKAT TATE PEPS
17. PNEUMONIA QUE
18. SULPH CAMEL
19. WINE CORUDIA
20. BANADE

NORTH CAROLINA PHARMACEUTICAL ASSOCIATION
Executive Committee
1987–1988

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Chapel Hill NC 27514

Mr. Fred M. Eckel, Ex Officio
713 Churchill Drive
Chapel Hill NC 27514

Mr. Thomas F. Hughes, Ex Officio
Route 5, Box 325E
Chapel Hill NC 27514

Newly installed officers of the North Carolina Pharmaceutical Association are: (left to right) Julian E. Upchurch, President; Albert F. Lockamy, Jr., First Vice President; W. Robert Bizzell, Second Vice President; Loni T. Garcia, Third Vice President; Betty H. Dennis, Claude U. Paoloni and Donald V. Peterson, Executive Committee.

You are most cordially invited to attend

The 1987 Mortar-and-Pestle Award Dinner

Honoring

John C. Hood, Jr.

1987 North Carolina Pharmaceutical Association

PHARMACIST-OF-THE-YEAR

Friday Evening
August 14, 1987
Vermillion's Buffet
Kinston

7:00 pm Reception
8:00 pm Dinner
$16.00 per person

The Mortar-and-Pestle Award is the most coveted award presented by the North Carolina Pharmaceutical Association and the recipient is chosen because of outstanding service to Pharmacy and the community over many years.

PROGRAM

At the dinner, friends and colleagues of the recipient will relate some of his activities which led to his selection. NCPhA President Julian Upchurch will preside and the Mortar-and-Pestle Award will be presented by Immediate Past President M. Keith Fearing, Jr. Program participants include Representative Daniel T. Lilly, NC General Assembly; Roland L. Paylor, Jr., Executive Director, Kinston Housing Authority; W. Robert Bizzel, Pharmacist; David S. Clift, Minister, Westminister United Methodist Church; and J. Marshall Tetterton, President, Peoples Bank. John T. Capps, III will serve as Master of Ceremonies.

Dinner reservations may be ordered from the NCPhA office in Chapel Hill or the Lenoir County Chamber of Commerce in Kinston.

Overnight accommodations are available at the Sheraton Kinston (919) 523-1400. Reduced rates have been obtained for this event.

STATE BOARD OF PHARMACY

PHARMACY PERMITS RECENTLY ISSUED

Bunn Community Health Ctr. Phcy.
Main St., Bunn
Herbert P. Scoggin, Ph-mgr.
Issued 2/9/87 (T/O)

Kaiser Permanente
New Bern Ave., Raleigh
Linda Riggs Burke, ph-mgr.
Issued 2/18/87

Service Drug Store
Pinetops
Johnny L. Hogg, ph-mgr.
Issued 2/20/87 (T/O)

Tar Heel Drug Co. of Robbins, Inc.
N. Middleton St., Robbins
Robert H. Reynolds, Jr., ph-mgr.
Issued 2/24/87 (T/O)

Guilford Co. Family Planning Phcy.
312 N. Eugene St., Greensboro
Myra J.W. Southerland, ph-mgr.
Issued 3/2/87 (LSP)

Big Value Discount Drug Ctr.
Hwy. 258-Academy St., Richlands
Ralph B. Hunter, ph-mgr.
Issued 3/9/87 (T/O)

Lewis Drug Co.
128 N. Center St., Mt. Olive
Wilson K. Lewis, ph-mgr.
Issued 3/9/87 (T/O)

Belmont Phcy., Inc.
1309 Coach Rd., Reidsville
John Allen, ph-mgr.
Issued 3/11/87 (T/O)

Forest Lawn Phcy.
Hwy. 19-23, Enka
Wilbur S. Ward, ph-mgr.
Issued 3/16/87 (LSP)

Hardin's Drug Store #5, Inc.
Suite 130-1175 Hwy. 74 Bypass, Spindale
J. Laine Hawkins, ph-mgr.
Issued 3/16/87

Charter Northridge Hosp.
400 Newton Rd., Raleigh
Robert J. Fuentes, ph-mgr.
Issued 3/16/87 (LSP) (T/O)

Foothills Pharmacy
202 A Harper Ave. NW, Lenoir
David A. Ayers, ph-mgr.
Issued 3/16/87 (T/O)

Massey Hill Drug Co., Inc.
1072 Southern Ave., Fayetteville
Albert H. Smith, ph-mgr.
Issued 3/16/87 (T/O)

Sampson Co. Health Dept.
Rowan Rd., Co. Complex, Clinton
Sharman C. Leinwand, ph-mgr.
Issued 3/17/87 (LSP)

Med Center I of Greenville
507 E 14th St., Greenville
Carol A. Crew, ph-mgr.
Issued 3/17/87 (LSP)

Metrolina Comprehensive Health Ctr., Inc.
3333 Wilkinson Blvd., Charlotte
Milton McCoy, ph-mgr.
Issued 4/2/87 (LSP)

Drugco Discount Phcy.
107 Smith Church Rd., Roanoke Rapids
Gene W. Minton, ph-mgr.
Issued 4/6/87

Continued on page 22

PERMITS

Continued from page 21

Kerr Drug Stores, Inc.
Ashton Sq., 4020 North Blvd., Raleigh
Jeanne L. Berray, ph-mgr.
Issued 4/6/87

Blackwelder Memorial Hospital
111 Boundary St., Lenoir
Linda S. Cole, ph-mgr.
Issued 4/7/87 (T/O)

Standard Drug Store #2
100 S. Queen St., Kinston
Joseph D. Eudy, Jr., ph-mgr.
Issued 4/1/87 (T/O)

Gamewell Drug Store
Rt. 6, Box 242, Morganton Blvd., Lenoir
Barry V. Watson, ph-mgr.
Issued 4/7/87 (T/O)

PROPER IDENTIFICATION OF STRANGE SOUNDING NAMES

Continued from page 18

1. GODFREY'S CORDIAL
2. ALCOCKS POROUS PLASTER
3. SCOTTS EMULSION
4. CAMPHOR
5. PEROXIDE
6. DEWEES CARMINATIVE
7. LYDIA E. PINKHAM VEGETABLE COMPOUND
8. TETTERINE SALVE
9. ASAFETIDA
10. WINSLOW'S SOOTHING SYRUP
11. MAALOX
12. CAMPHO-PHENIQUE LIQUID
13. BOYKIN WORM SYRUP
14. BBB TONIC
15. DOBELL'S SOLUTION
16. ELIXIER LACTATED PEPSIN
17. VICK'S SALVE
18. SULFUR CANDLE
19. CARDUI
20. BAND AID

EDITOR'S CHOICE

1942 ALUMNUS EXPLAINS DIFFERENCE

by Rush Hamrick

Editor's Note: The information and humorous remarks below were delivered by Rush Hamrick at the 45th reunion of the class of 1942. While an undergraduate at UNC, Hamrick wrote for the Daily Tar Heel. *During one summer he edited* The Blowing Rocket, *a newspaper published in Blowing Rock only during the summer months. Later, along with his wife, Grace, he established the* Cleveland Times *in Shelby, a weekly newspaper that still operates. Early in life, Hamrick discovered there was more money to be made in pharmaceuticals. Grace is the first and only woman to be president of UNC's General Alumni Association (1976–77).*

Most of my time at UNC was spent on *The Daily Tar Heel* and the *Buccaneer.* We used to crusade to "keep off the grass" and today students are urged to "not smoke the grass."

I met wife Grace at the *Tar Heel* and we were both in the newspaper business until I got out in 1946 and started pushing drugs . . . legitimate, that is, pharmaceuticals. Grace continued writing . . . for the last few years a weekly column in the *Shelby Daily Star.* She has written about some of her reunions. Lifting from some of her columns, borrowing from others and adding some of my own . . . listen to this . . .

There are three ages of men and women: youth, middle age, and "You haven't changed a bit." But change is the name of the game. Consider this. Members of the class of 1942 were before the pill and the population explosion, which went hand in hand. We got married first and then lived together. How quaint can you be?

We were before TV, penicillin, polio shots, antibiotics and frisbees. Before frozen food, nylon, dacron, Xerox, Kinsey and Grandma Moses. We were before radar, fluorescent light, credit cards, ballpoint pens and "M.A.S.H." For us, time-sharing meant togetherness, not something to do with computers or part ownership in condominiums. A chip was a piece of wood; hardware meant hardware, and software wasn't even a word.

UNC coeds didn't wear slacks . . . they wore skirts and saddle shoes. That was before pantyhose and drip-dry clothes. Before ice-makers and dishwashers, clothes dryers, freezers, electric blankets, the 40-hour week and the minimum wage. Before men wore long hair and earrings, and women wore jeans.

In our time, closets were for clothes, not for coming out of, and a book about two young women living together in Europe could be called "Our Hearts Were Young and Gay." We were before Playboy and bunnies were small rabbits, and rabbits were not Volkswagens. Girls wore Peter Pan collars, and thought a deep cleavage was something butchers did.

When we were in school, pizzas, Cheerios, frozen orange juice, instant coffee and McDonald's were unheard of. We thought fast food was what you ate during Lent. We were before FM radio, CB radio, stereo, tape recorders, video recorders, electric typewriters, word processors, personal computers, Muzak, electronic music and disco dancing . . . and that's not all bad. We knew whom we were dancing with, and held on to them.

We were before Boy George, the Beatles, Madonna, Jim and Tammy Bakker, Rudolph the Red-Nosed Reindeer, and Snoopy . . . before DDT and vitamin pills, vodka and the white wine craze and before disposable diapers and Jeeps.

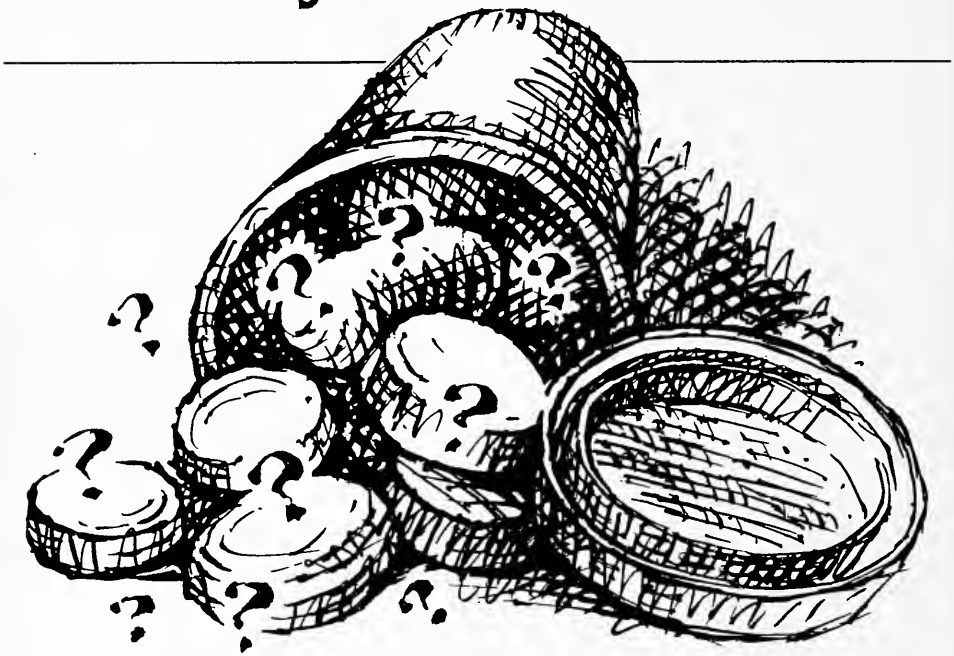
We didn't talk about medicare, menopause,

Continued on page 26

Rush Hamrick was voted a life membership in the TMA at the Annual Convention.

These days, your customers want more than medicine in hand.

They want answers.



Today's pharmacists have some explaining to do. In fact, a recent study by The Upjohn Company showed that 65% of your customers want to talk with you about their prescriptions. That's a 22% increase in nearly 10 years!

The reason is consumer awareness. Today's customer is better informed, better educated — with many more questions about concerns like side effects and drug interactions. So take time out to talk with your customers. In today's competitive environment, it might be one of the best things you can do to earn repeat business.

The Upjohn Company has many more facts on the trends affecting your business. If you'd like to know more, just contact your Upjohn representative.

Upjohn

Sharing knowledge...sharing success.

REPORT OF THE NATIONAL LEGISLATIVE COMMITTEE

Presented at the 107th Annual meeting of the North Carolina Pharmaceutical Association, April 22–25, 1987, Charlotte

North Carolina Pharmaceutical Association
National Legislative Committee
January 23, 1987
Pharmacy Institute, Chapel Hill, North Carolina

Those present: Jesse Pike, Bill Edmondson, Jerry Gaylord, William Randall, Dan Teat, Seymour Holt, Milton Skolaut and Jonathan Hill.

Those absent due to weather and travel: Jean Gagnon, Jonathon Hill, Jerry Brunson, Fred Eckel.

Guests: Jane Osterhaus, pharmacy intern Allison Jones.

The meeting started promptly at 9:00 a.m. and ended at 3:00 p.m. Following is a report of each area:

- **Prescription drug prices** — Jesse Pike
  Jesse Pike provided an overview of this issue indicating that the topic was applicable to all others being discussed.
- **Discriminatory Pricing** —
  The focus of the issue is the disparity of prices. Needed changes in the Robinson-Patman Act would avoid discrimination; the future of pharmacy is in the balance in that the pharmacy community is pressed with discounters and chains.

  Third party issues are impacting on drug prices, retail pharmacy in North Carolina has not been registered adequately via Medicaid pricing. Jesse referenced NARD network program where 32 states signed up and felt that the program will not be effective until all states sign up.
- **Drug Pricing Trends** —
  Jane Osterhaus provided an thorough overview of drug pricing trends in the pharmaceutical industry including a multi-source category containing branded and generic products, generics compete on basis of price, and brands prefer non-price competition. She summarized her presentation by indicating the durg prices have been increasing more rapidly in the last 5 years, increasing primarily from branded manufacturers.

  Branded manufacturers increase prices of single-source and multi-source products; generics use price competition where brands prefer non-price competition. Explaining these changes is the climbing productivity, dollar flucuations, a few significant new products, research and development expenditures, government intervention and product liability. The outlined drug issues for Congress that are related include drug diversion, pharmaceutical marketing, AIDS/cancer/biomedical research and Medicare drug coverage along with anti-generic campaigns, vaccine compensation, and drug diversion.
- **Drug Diversion** — Chairman Bill Edmondson provided an overview of the drug diversion issue H.R. 4820, the Prescription Drug Marketing Act of 1986, whose function is to protect consumers, benefit manufacturers and allow retailers and wholesalers to compete in the free market.

  Report included subcommittee findings, legislative content with key recommendations, the purpose of sampling from a physician's point of view, alternatives to sample delivery including samples to mail to physicians, coupons distributed to physicians, the discontinuance of samples altogether, sampling of new products.

  Industry positions from FDA, the PMA, physicians, the American Pharmaceutical Association, National Association of Retail Druggists, the American Society of Hospital Pharmacists, American Academy of Family Practice were provided.

  Mentioned were alternatives such as patient rebates and consumer advertising. Jerry Gaylord provided an overview of review letters from practitioners and reaction from APhA and NARD. In some instances, consumer complaints indicate that samples were given to patients illegally and issues in

Continued on page 26

LEGISLATIVE COMMITTEE

Continued from page 25

the future are designer drugs of the 1990's that will need to be addressed.

- **Tort Reform** — Bill Randall and Dan Teat indicated that North Carolina is recommending tort changes like those at the federal level. The objective of restricting total limits of liability indicated in North Carolina the number of cases are increasing but to a small degree and the Bar feels that no changes are needed.

  The point was raised that insurances costs for pharmacists are still quite low and the AMA is using tort reform to say that foreign doctors are responsible for liability suits therefore they want to curtail foreign graduates.

- **Drug Voucher System** — Seymour Holt indicated that the test voucher in Alabama is used as an example of cost reduction with Delaware Blue Cross Blue Shield. The system works and the pharmacist is reimbursed quickly. Insurance companies and the government is against the system. The North Carolina legislative committee recommended the following:

  > "The Federal legislation committee recommends a demonstration project that would utilize the ways to reduce the administrative costs and associated costs to reduce pharmacy processing, examining techniques such as voucher electronic transfer of funds etc. It was indicated that it cost 78 cents to process a claim. The voucher system could reduce this considerably."

- **Drug reimbursement schemes** — Milton Skolaut provided an overview of PHIP, CIP, MAC, EAC, the Alabama voucher system and usual and customary fees as issues being examined for reimbursement by HCFA.

- **Pharmaceutical Exports** — Shelton Brown and Fred Eckel were absent. Brief overiew of its status was provided to the committee. In preparation for the North Carolina Pharmaceutical Associations visit to Washington on March 22-23, the following were identified as key issues to discuss with representatives in Washington: drug reimbursement, voucher, diversion, tort reform, Robinson-Patman Act review, physician dispensing and mail order prescription business.

Committee Members

William W. Edmondson, *Chairman*

G.N. "Jerry" Brunson	H. Shelton Brown, Jr.
Jean Paul Gagnon	Fred M. Eckel
Jonathan A. "Don" Hill	Jerry T. Gaylord
W.H. Randall, Jr.	W. Seymour Holt
Daniel W. Teat	Milton W. Skolaut

RUSH HAMRICK

Continued from page 23

mini-skirts, maxi-pads, condos, contras and condoms. The coeds didn't need living bras . . . they just needed one that hung around.

In our day cigarette smoking was fashionable, grass was mowed, Coke was something you drank, and pot was something you cooked in. We were before day-care centers, house husbands, baby sitters, computer dating, dual careers, and live-in partners. "Made in Japan" meant junk, and "making out" referred to how you did on an exam.

In our time there were five-and-ten cent stores where you could buy things for five and 10 cents. For just one nickel you could make a phone call, or buy a Coke, or mail one letter and two post cards. For 25 cents we could go to the 1:30 class at E. Carrington Smith's Carolina Theatre or have a meat, two vegetables and a drink at the College Cafe. You could buy a new Pontiac convertible for less than $900 or a Chevy coupe for less than $700, but who could afford them? Not many! A pity, too, with gas at 11 cents per gallon. If anyone has asked us in those days to explain CIA, Ms., NATO, NFL, SAT, JFK, BMW, PTL, or IUD, we would've said "Alphabet soup."

We were not before the difference between the sexes was discovered, but we were before sex changes. We just made do with what we had, and we were the last generation that was so dumb that we thought a girl had to have a husband to have a baby.

My, how things have changed!

The Chapel Hill Newspaper
Sunday, May 17, 1987

LOCAL NEWS

FOUR COUNTY PHARMACEUTICAL ASSOCIATION INSTALLS OFFICERS

On Wednesday evening, March 25, 1987, the Four County Pharmaceutical Association held its Annual Officer Installation Banquet at the Holiday Inn in Henderson. In addition to members' spouses, attending as guests were Mr. Andrew Barrett, Executive Director of the Pharmacy Network of North Carolina and Mr. Julian Upchurch, President-Elect of the North Carolina Pharmaceutical Association.

Following dinner, featured speaker Barrett shared with the group some of the progress being made in the Network, including pending contracts for services for Network members, as well as his expectations and insights for the future of pharmacy in this state.

President-Elect Upchurch echoed his support for the Network and the accomplishments that have been made in its short existence. He briefly expressed his hopes for the up-coming NCPhA year and their legislative lobbying efforts, and accepted on behalf of the Lobby Fund a check in the amount of $250.00 from the Four County Pharmaceutical Association.

Installed as officers by Upchurch for the 1987–88 year for the local Association were as follows:

John Stancil, Henderson, President
Woody King, Norlina, First Vice-President
Steve Potter, Henderson, Second Vice-President
Charles Creech, Oxford, Secretary-Treasurer

Out-going President J.B. Clay of Oxford was recognized and presented an engraved plaque for his past year of dedicated leadership, as well as his role in the initial planning and organization of the Association itself. The Four County Pharmaceutical Association was formed in early 1985 and is made up of member pharmacists from Vance, Granville, Warren and Franklin counties.

RANDOLPH COUNTY PHARMACEUTICAL SOCIETY

The first meeting of the Randolph County Pharmaceutical Society was held Sunday night, May 24, 1987, in the conference room of the Randolph Hospital. Charter officers installed by NCPhA Executive Director Al Mebane are Neill Wilson, President; Charles F. Owen, Vice President; and Kim Farrington, Secretary-Treasurer. Jack Watts, Secretary-Treasurer of the Alamance County Pharmaceutical Association received special thanks for his help in establishing the Society through his position as CE Coordinator for the Greensboro AHEC.

THE GUILFORD COUNTY SOCIETY OF PHARMACISTS Greensboro, North Carolina by J. Frank Burton, Sec./Tres.

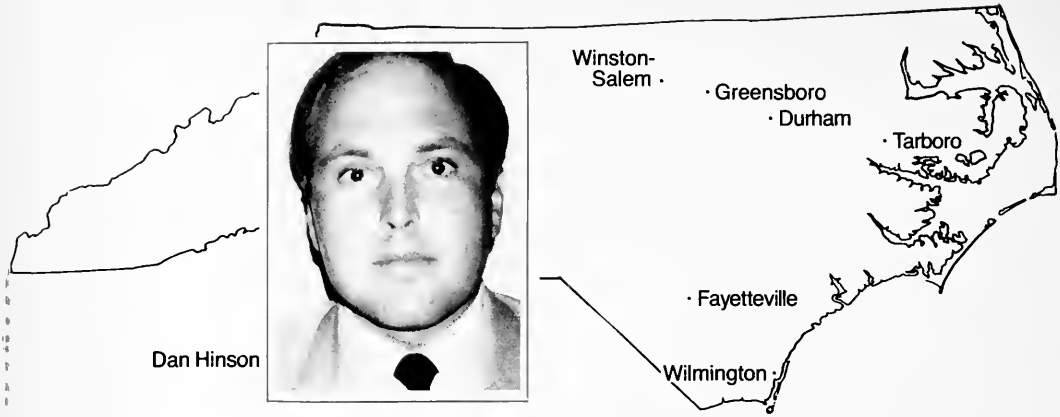
The regular monthly meeting of the Guilford County Society of Pharmacists was held Sunday evening, May 10, 1987, at Moses H. Cone Hospital in Greensboro. Guest speaker for the meeting was Dr. John A. Lusk, a Greensboro internest specializing in oncology, a highly respected authority in the field of cancer and its treatment. Dr. Lusk's topic was "An Update on Breast Cancer", and his talk proved very interesting and informative. After the program, a short business session was held and the meeting adjourned.

BLUE RIDGE PHARMACEUTICAL ASSOCIATION

The first meeting of the Blue Ridge Pharmaceutical Association was held Sunday, February 22, 1987, at the Sheraton Hotel in North Wilkesboro. Officers installed by NCPhA Executive Director Al Mebane were: Steve Critz, President; Don Beam, Vice President and Secretary; Jim Worley, Treasurer.

TO LOCAL ASSOCIATION SECRETARIES

The activities of local/regional pharmaceutical associations are of interest to all pharmacists of the state. To have your association reports printed in the *Carolina Journal of Pharmacy,* please send your condensed minutes to: The Editor, *Carolina Journal of Pharmacy,* P.O. Box 151, Chapel Hill NC 27514.



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Antiprotozoal: SATRIC™ TABLETS – 250mg. (metronidazole USP) · SATRIC™ – 500 TABLETS (metronidazole USP) ·
Contrast Medium: ETHIODOL® (ethiodized oil for injection) ·
Hormone: DITATE®-DS (testosterone enanthate and estradiol valerate injection) ·
Bronchodilators: DILOR® ELIXIR (dyphylline) · DILOR® INJECTABLE (dyphylline) · DILOR® TABLETS – 200mg. (dyphylline) · DILOR® – 400 TABLETS (dyphylline) · DILOR-G® LIQUID dyphylline 100mg, guaifenesin USP 100mg. · DILOR-G® TABLETS dyphylline 200mg, guaifenesin USP 200mg. ·
Topicals: ALPHATREX® CREAM, OINTMENT AND LOTION 0.05% (betamethasone dipropionate USP) · BETATREX™ CREAM, OINTMENT AND LOTION 0.1% (betamethasone valerate USP) · MYTREX® A* CREAM AND OINTMENT (neomycin sulfate – triamcinolone acetonide) · MYTREX® F CREAM AND OINTMENT (nystatin – triamcinolone acetonide) · NYSTEX™ CREAM AND OINTMENT (nystatin USP) · NYSTEX™ ORAL SUSPENSION (nystatin oral suspension USP) · TRYMEX CREAM AND OINTMENT 0.025% (triamcinolone acetonide USP) · TRYMEX CREAM AND OINTMENT 0.1% (triamcinolone acetonide USP) ·
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*Introduction scheduled for July 1986.

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REPORT OF THE NCPhA MENTAL HEALTH COMMITTEE

Presented at the 107th Annual meeting of the North Carolina Pharmaceutical Association, April 22–25, 1987, Charlotte

The North Carolina Pharmaceutical Association
MENTAL HEALTH COMMITTEE
Meeting Minutes
March 12, 1987

The Mental Health Committee of the NCPhA met in Chapel Hill at the Institute of Pharmacy from 2:00–3:00 pm on March 12. The following members were present:

Julian Baker, *Chairman,* Neal Jennings, John Myhre, Horace Steadman, Robert Worley, Robert Allen, *Advisor,* Martha Johnson, Richard Sessions, Paul Stevenson

Members absent were:

Edward Durand, Jerry McKee, Mary Ledbetter, Dennis Moore, *Advisor*

Chairman Baker called the meeting to order and thanked everyone for taking time from their busy schedule to attend this committee meeting. Each member introduced themselves and indicated why they had an interest in mental health.

The committee had many concerns which were ultimately expressed in a proposed resolution to be presented at the annual meeting in Charlotte. The recommendations made in the resolution are as follows:

1. a survey to be conducted by the Committee to:
   (A) determine how mental health centers in the 100 counties of North Carolina are handling medications for their clients,
   (B) determine to what extent community pharmacists are participating in this effort and
   (C) recommend actions community pharmacists can take to help the Division of Mental Health, Mental Retardation and Substance Abuse Services improve medication compliance for mentally ill North Carolina citizens.
2. an article describing the results of the above mentioned survey be published in the *Carolina Journal of Pharmacy;*
3. the scope of the Committee's concerns, activities and recommendations be expanded to include the mentally ill and the substance abuser;
4. the name of Committee be changed to be the NCPhA "Mental Health, Mental Retardation and Substance Abuse Committee";
5. the membership be expanded to include an AHEC pharmacist.

The committee further agreed that it is not possible to perform the work of this committee by meeting only once per year. It was recommended and agreed upon by consensus that the committee meet at least two or more times per year. It was recommeded that the committee retain its same composition for another year and that persons to be added to the committee as designated by Chairman Baker to represent the interests of mentally retarded citizens and substance abusers.

The committee decided to review the results of the study Bob Allen agreed to conduct (recommendation #1 above) at the next meeting. Chairman Baker will call a meeting when the study results are tabulated. In addition, the committee agreed they would like to have someone representing the mentally ill or mentally retarded speak to the group about the needs of these disability areas at a future meeting.

With no further business, the committee adjourned at 3:30 PM.

Respectfully submitted
Bob Allen, *Secretary*
March 25, 1987

Committee Members

Julian Baker, *Chairman*

Dennis Moore, *Advisor*	Robert J. Allen, *Advisor*
R. Neal Jennings	Edward M. Durand
Mary W. Ledbetter	Martha P. Johnson
John H. Myhre	Jerry McKee
Horace D. Steadman, Jr.	J. Richard Sessions
Robert W. Worley, Jr.	Paul A. Stevenson

REPORT OF THE SOCIAL AND ECONOMIC RELATIONS COMMITTEE

Presented at the 107th Annual meeting of the North Carolina Pharmaceutical Association, April 22–25, 1987, Charlotte

The Social and Economic Relations Committee of the North Carolina Pharmaceutical Association met march 1, 1987 at 2:00 p.m. at the Institute of Pharmacy, Chapel Hill, N.C.

The chairman asked the members of the committee present to express themselves as to the areas of concern the pharmacists of the state have in order that the association may work to help improve the social and economic well-being of the pharmacist.

There were several areas identified and discussed. They were as follows:

I. **Third Party Contracts**
While there is still much work to be done, the committee wanted to go on record commending Mickey Watts and the Board of Directors of the Pharmacy Network for the work it is doing to secure third party contracts for our pharmacists.

II. **Physician Dispensing**
The committee was concerned for the safety of the citizens of North Carolina in the manner in which drugs are being dispensed in some physicians offices. The committee was in favor of legislation for the physicians to be required to adhere to the same pharmacy laws for dispensing drugs (i.e., proper labeling and proper and complete record keeping, etc.) as the pharmacist.

III. **Pharmacist Prescribing**
After much discussion, the committee was in favor of legislation to allow pharmacists to prescribe and dispense certain types of drugs. The pharmacist is prepared by education and experience to assume this role.

IV. **Mail Order Prescriptions**
The committee discussed this problem at length. The conclusion was that in order to protect the public, anyone that is filling prescriptions for residents of North Carolina should be required to be licensed by the North Carolina Board of Pharmacy and abide by the same regulations as other pharmacies in the state.

V. **Public Relations**
The Pharmaceutical Association should consider hiring a public relations firm to help inform the public about the problems of concern, i.e., HMO dispensing, mail order prescriptions, physicians dispensing, pharmacists prescribing, etc., in order to bring about favorable changes for our pharmacists.

This report is being made to the Executive Committee of the Pharmaceutical Association. It is hoped that the leadership of the association will be able to implement the suggestions.

Committee Members

L. Milton Whaley, *Chairman*

L. Stuart Booker
L. Irvin Graham
Abraham G. Hartzema
Richard J. Hendrix
Ida N. Keetsock
William L. Marsh
Sheila Whitehead

WOMAN'S AUXILIARY BOARD MEETING

The Board Meeting of the North Carolina Pharmaceutical Association Auxiliary was held at the Institute of Pharmacy in Chapel Hill on Thursday, June 25, 1987 at 1:30 p.m. Board members present were: Dollie Corwin, Jewell Oxendine, Eloise Watts, Jean Morse, Gladys Jones, Peggy Jackson, Frances Jones, and Mary Lou Davis.

The President, Mary Lou Davis, called the meeting to order. For our devotion, our president gave us Albert Schweitzer's Rx for continued success. It consisted of so many parts of Inspiration, Aspiration, Determination, Devotion and Elbow Grease. The minutes were read, corrected, and approved.

Eloise Watts gave the treasurer's report. We had a balance on hand of $4,544.59. She made a motion that we put $2,000.00 in the Reserve Fund to draw interest and give $500.00 to the

Continued on page 37

REPORT OF THE COMMUNITY PHARMACY COMMITTEE

Presented at the 107th Annual meeting of the North Carolina Pharmaceutical Association, April 22–25, 1987, Charlotte

Committee on Community Pharmacy

The NCPhA Committee on Community Pharmacy met Sunday, February 22, 1987 at the Institute of Pharmacy in Chapel Hill. Chairman Ralph Ashworth conducted the meeting.

Agenda Items

1. Possible Continuing Pharmaceutical Education (CPE) credits for NCPhA committee meetings.
2. Physician dispensing for profit
3. Mail order prescription drug programs
4. Computers in pharmacy
5. Third party prescription drug plans
6. The rise in health care costs as compared to the Consumer Price Index increases.

The committee discussed the possibility and feasibility of obtaining CPE credit for NCPhA committee meetings, recognizing the limitations that should be imposed. The committee postponed any official recommendations until further study could be done.

To determine the scope of the problem of physician dispensing and resulting reduction in the patient's perceived freedom of choice regarding where the prescriptions must be dispensed, the committee recommended a survey of the membership be undertaken in March. This survey should solicit specific information regarding possible exploitation and/or inconvenience of patients resulting from physician or clinic dispensing. The committee also proposed a resolution addressing freedom of choice be introduced at the annual convention.

The committee discussed mail order prescription drug programs and encourages the Legislative Committee and Executive Committee to pursue any and all approaches to limit or end this practice. The committee felt the patient is best served when the professional services of a pharmacist are immediately and personally available to the patient or the patient's agent. Efforts should be started to document and substantiate pharmacy's opinion that local pharmacy services are more cost effective than mail order programs.

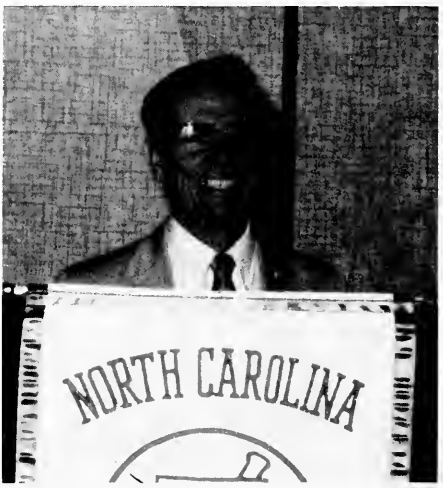
The increase in manufacturers' cost of drug products concerned the committee as did the multi-tiered pricing policies of many manufacturers. The committee suggested resolutions be presented commending those manfacturers who have initiated a single tiered pricing policy, and recommending restraint in price increases to the Pharmaceutical Manufacturers Association.

While pharmacy computers have expanded the information available to the pharmacist, such as patient profiles, drug interactions, multi-prescriber, multi-drug user habits, insurance and Medicaid information, etc., the committee expressed concern about the lack of standardization in the industry. The committee also felt it was important for gradutes to be computer literate and yet retain the proficiency to operate without the services of a computer should it be necessary.

Committee Members

Ralph H. Ashworth, *Chairman*

Thomas M. Allison	Terri Bostick
Barry L. Carpenter	David N. Cox
Connie L. Daughtry	Charles F. Delaney
Stephen Y. Jones	Susan Ladd
Randy N. Lawson	Ruth W. Mitcham
Radford H. Rich	M. Keith Stewart
Carl D. Taylor	Marianne K. White
Ronald J. Winston	



Ralph Ashworth, Community Pharmacy Committee Chairman

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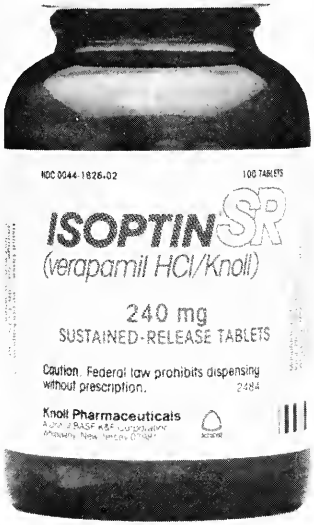

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Please see next page for brief summary.

NEW...ONCE DAILY IN MILD TO MODERATE HYPERTENSION

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CONTRAINDICATIONS: 1) Severe left ventricular dysfunction (see WARNINGS), 2) Hypotension (less than 90 mmHg systolic pressure) or cardiogenic shock, 3) Sick sinus syndrome or 2nd or 3rd degree AV block (except in patients with a functioning artificial ventricular pacemaker).

WARNINGS: Heart Failure: ISOPTIN should be avoided in patients with severe left ventricular dysfunction (see DRUG INTERACTIONS). Patients with milder ventricular dysfunction should, if possible, be controlled before verapamil treatment. Hypotension: ISOPTIN (verapamil HCl) may produce occasional symptomatic hypotension. Elevated Liver Enzymes: Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Periodic monitoring of liver function in patients receiving verapamil is therefore prudent. Accessory Bypass Tract (Wolff-Parkinson-White): Patients with paroxysmal and/or chronic atrial flutter or atrial fibrillation and a coexisting accessory AV pathway have developed increased antegrade conduction across the accessory pathway producing a very rapid ventricular response or ventricular fibrillation after receiving intravenous verapamil. While this has not been reported with oral verapamil, it should be considered a potential risk. Treatment is usually D.C.-cardioversion. Atrioventricular Block: The effect of verapamil on AV conduction and the SA node may cause asymptomatic 1st degree AV block and transient bradycardia. Higher degrees of AV block, while infrequent (0.8%), may require a reduction in dosage or, in rare instances, discontinuation of verapamil HCl. Patients with Hypertrophic Cardiomyopathy (IHSS): Although verapamil has been used in the therapy of patients with IHSS, severe cardiovascular decompensation and death have been noted in this patient population.

PRECAUTIONS: Impaired Hepatic or Renal Function: Verapamil is highly metabolized by the liver with about 70% of an administered dose excreted in the urine. In patients with impaired hepatic or renal function verapamil should be administered cautiously and the patients monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacological effects (see OVERDOSAGE).

Drug Interactions: Beta Blockers: Concomitant use of ISOPTIN and oral beta-adrenergic blocking agents may be beneficial in certain patients with chronic stable angina or hypertension, but available information is not sufficient to predict with confidence the effects of concurrent treatment in patients with left ventricular dysfunction or cardiac conduction abnormalities. Digitalis: Clinical use of verapamil in digitalized patients has shown the combination to be well tolerated if digoxin doses are properly adjusted. However, chronic verapamil treatment increases serum digoxin levels by 50 to 75% during the first week of therapy and this can result in digitalis toxicity. Upon discontinuation of ISOPTIN (verapamil HCl), the patient should be reassessed to avoid underdigitalization. Antihypertensive Agents: Verapamil administered concomitantly with oral antihypertensive agents (e.g., vasodilators, angiotensin-converting enzyme inhibitors, diuretics, beta blockers, prazosin) will usually have an additive effect on lowering blood pressure. Patients receiving these combinations should be appropriately monitored. Disopyramide: Disopyramide should not be administered within 48 hours before or 24 hours after verapamil administration. Quinidine: In patients with hypertrophic cardiomyopathy (IHSS), concomitant use of verapamil and quinidine resulted in significant hypotension. There has been a report of increased quinidine levels during verapamil therapy. Nitrates: The pharmacologic profile of verapamil and nitrates as well as clinical experience suggest beneficial interactions. Cimetidine: Two clinical trials have shown a lack of significant verapamil interaction with cimetidine. A third study showed cimetidine reduced verapamil clearance and increased elimination to 1/2. Anesthetic Agents: Verapamil may potentiate the activity of neuromuscular blocking agents and inhalation anesthetics. Carbamazepine: Verapamil may increase carbamazepine concentrations during combined therapy. Rifampin: Therapy with rifampin may markedly reduce oral verapamil bioavailability. Lithium: Verapamil may lower lithium levels in patient on chronic oral lithium therapy. Carcinogenesis, Mutagenesis, Impairment of Fertility: There was no evidence of a carcinogenic potential of verapamil administered to rats for two years. Verapamil was not mutagenic in the Ames test. Studies in female rats did not show impaired fertility. Effects on male fertility have not been determined. Pregnancy (Category C): There are no adequate and well-controlled studies in pregnant women. ISOPTIN crosses the placental barrier and can be detected in umbilical vein blood at delivery. This drug should be used during pregnancy, labor, and delivery, only if clearly needed. Nursing Mothers: ISOPTIN is excreted in human milk, therefore, nursing should be discontinued while verapamil is administered. Pediatric Use: Safety and efficacy of ISOPTIN in children below the age of 18 years have not been established.

ADVERSE REACTIONS: Constipation 8.4%, dizziness 3.5%, nausea 2.7%, hypotension 2.5%, edema 2.1%, headache 1.9%, CHF/pulmonary edema 1.8%, fatigue 1.7%, bradycardia 1.4%, 3° AV block 0.8%, flushing 0.1%, elevated liver enzymes (see WARNINGS). The following reactions, reported in less than 1.0% of patients, occurred under conditions (open trials, marketing experience) where a causal relationship is uncertain; they are mentioned to alert the physician to a possible relationship: angina pectoris, arthralgia and rash, AV block, blurred vision, cerebrovascular accident, chest pain, claudication, confusion, diarrhea, dry mouth, dyspnea, ecchymosis or bruising, equilibrium disorders, exanthema, gastrointestinal distress, gingival hyperplasia, gynecomastia, hair loss, hyperkeratosis, impotence, increased urination, insomnia, macules, muscle cramps, myocardial infarction, palpitations, paresthesia, psychotic symptoms, purpura (vasculitis), shakiness, somnolence, spotty menstruation, sweating, syncope, urticaria. Treatment of Acute Cardiovascular Adverse Reactions: Whenever severe hypotension or complete AV block occur following oral administration of verapamil, the appropriate emergency measures should be applied immediately, e.g., intravenously administered isoproterenol HCl, levarterenol bitartrate, atropine (all in the usual doses), or calcium gluconate (10% solution). If further support is necessary, inotropic agents (dopamine or dobutamine) may be administered. Actual treatment and dosage should depend on the severity and the clinical situation and the judgment and experience of the treating physician.

OVERDOSAGE: Treatment of overdosage should be supportive. Beta-adrenergic stimulation or parenteral administration of calcium solutions may increase calcium ion flux across the slow channel, and have been used effectively in treatment of deliberate overdosage with verapamil. Clinically significant hypotensive reactions or fixed high degree AV block should be treated with vasopressor agents or cardiac pacing, respectively. Asystole should be handled by the usual measures including cardiopulmonary resuscitation.

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REPORT OF THE WOMEN IN PHARMACY COMMITTEE

Presented at the 107th Annual meeting of the North Carolina Pharmaceutical Association, April 22-25, 1987, Charlotte

The number of women entering phrmacy has been on the increase. While most of the pharmacists now practicing in North Carolina are men, the UNC School of Pharmacy student population is currently over 50% female. Even though the number of women pharmacists is increasing their representation as managers has not kept pace.[1] It is for this reason that the Women in Pharmacy Committee this year focused its attention on career management.

However, in researching career management we found that men as well as women have a disadvantage because they are "baby boomers." All young practitioners may find it harder to advance in their career. Minimal advancement potential is one of the greatest causes of job dissatisfaction.[2] This is true regardless on the setting, i.e. hospital, chain-store, or independent pharmacy practice sites. Take for instance hospital pharmacies. Two thirds of hospital pharmacists are less than 40 years old. The majority of pharmacy directors are less than 40 years old.[3] Few pharmacists leaving for retirement may be a reason why hospital pharmacists feel a lack of opportunity.[4] Limited personal growth may be what pharmacists are expressing as they complain of a lack of career advancement opportunities.[5]

Young pharmacists entering the profession may have difficulty seeing beyond a staff "job" and focusing on the profession of pharmacy as a lifetime career. We, as a committee, wanted to do something to help analyze their career choices and not let salary or benefit packages lure them into a "job" and fail to consider how their choice of practice position will contribute to the achievement of their career goals.

We sponsored a panel discussion jointly with Kappa Epsilon to present different pharmacy career opportunities. The speakers were:

1) Laura Burnham, Director of Pellcare Nursing Home Pharmacy
2) Omega Dean, owner Omega's Medicine Shoppe
3) Gigi Fredrich, Veterinary Pharmacist, North Carolina State University School of Medicine.
4) Jane Hall, Clinical Research Pharmacist, Burroughs-Wellcome Company
5) Chris Rudd, Pharm. D., Assistant Director of Pharmacy, Clinical Services, Duke University Medical Center
6) Joy Southerland, Director of Pharmacy Services, Guilford County Department of Public Health

The discussion provided excellent information on different career opportunities. We hope that this will become an annual event and attract both male and female pharmacy students.

The committee has also tried in past years to conduct a survey in North Caroilina to help determine the status of women pharmacists. Since the percentage of women pharmacists continues to increase each year, we would like to see where their interests and future committments lie. We are happy to say that this survey will be done in conjunction with Dr. Gagnon's NCPhA salary survey. Dr. Jan Phillips from the UNC School of Pharmacy is formulating the survey and expects to conduct the survey this spring. The Committee forwarded our ideas and suggestions for the survey to Drs. Gagnon and Phillips and

Continued on page 36

WOMEN IN PHARMACY

Continued from page 35

eagerly await the results of the survey. We hope this will provide useful information and help us focus on future areas of concern.

The committee also supports continuing education. It is for this reason that we wanted to sponsor a speaker at this gathering of pharmacists throughout the state.

We invited Dr. Randal Von Seggern to participate in an afternoon workshop. He presented a lecture on "Electrophysiologic Studies and Selecting Antidysrhythmic Drug Therapy."

As the lifestyles of pharmacists change and we enter different life cycles, or seek opportunities for advancement, or learn to manage as a two-career couple, we hope that what we try to do as a committee will bring out the best in the change while focusing on professional growth.

Footnotes

1) Nice FJ, Schondelmeyer SW, Bootman JL. "Women in Pharmacy Management — Why Not?" *Am. Pharm.* 1984: NS24:214-9.

2) Curtiss AR. "Psychological Strain and Job Dissatisfaction in Pharmacy Practice: Institutional Versus Community Practioner." *Am. J. Hosp. Pharmacy.* 1978:35:516-20.

3) Oakley RS, Bradham DD. "Factors Affecting the Salaries of Pharmacy Directors in Large Hospitals." *Am. J. Hosp. Pharm.* 1983; 40:591-7.

4) Posey LM, "Managing Baby Boom Pharmacists in the Information Age." *Am. J. Hosp. Pharm.* 1984: 41:890. Editorial.

5) Mackowiak J, Eckel FM. "Career Management: Understanding the Process." *Am. J. Hosp. Pharm.* 1985, 45:297-303.

Committee Members

Nancy R. Hardie, *Chairman*

Kim H. Deloatch
Sonja P. Estes
Elizabeth Farrington
Debbie Ladd
Marilyn A. McConnell
Donna S. Roberts
Joy W. Sutherland

THE CHARLOTTE WOMAN'S PHARMACEUTICAL AUXILIARY

by Lurlene G. Barnhardt

The Charlotte Woman's Pharmaceutical Auxiliary met for Lunch at the Elk's Club for the Annual April Business Meeting.

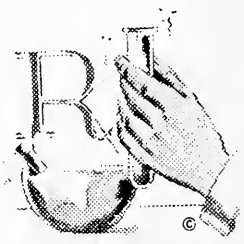
Prior to the April Luncheon Meeting the Board of the Auxiliary had met in the home of Jewel Oxendine (Mr. Jesse). From the Board meeting several recommendations were brought to the Auxiliary for vote. The recommendation to give $100.00 to Mission Air toward the challenge gift offered them by a couple — that is to match each $100.00 gift up to $50,000.00 — was approved.

The Treasurer reported that the Auxiliary is in fairly good condition after some special gifts had been received.

The President, Mary Lou Davis (Mrs. Leslie H.) was elected as our delegate to the N.C. Pharmaceutical Convention.

The Nominating Committee brought in a full Slate of Officers. These to be installed at the May Meeting of the Auxiliary.

President Mary Lou Davis, also General Convention Chairman for the Woman's Auxiliary NCPA, discussed the plans for the Convention. Each local chairperson reported for her particular assigned duties. All plans seem to be in order and ready to serve as Hostesses for the Woman's Auxiliary of the N.C. Pharmaceutical Association meeting in Charlotte, April 22–25, 1987. The Adam's Mark Hotel is Convention Headquarters. We are hoping to have a large number of women attending from over the State of North Carolina.



WEDDINGS AND BIRTHS

Greg and Debbie Southern of King, announce the birth of a son, Kyle Gregory, on April 17, 1987. Greg is a 1979 graduate of the UNC School of Pharmacy at Chapel Hill.

Myra Raine Hawkins of Cary and William Dodd Lindsay of Carrboro were married March 7 at St. Paul's Episcopal Church in Cary.

The bride and groom both graduated from the University of North Carolina School of Pharmacy. She is employed by Treasury Drug and he is employed by Revco DS, Inc. They make their home in Chapel Hill.

WIER AND CHAMBERS RETIRE FROM UNC SCHOOL OF PHARMACY

Melvin A. Chambers, professor and former dean of the School of Pharmacy, and Jack K. Wier, professor of pharmacognosy, retire at the end of the current school year. Chambers, a native of Garrett, Indiana, received his degrees from Ohio State University. He taught pharmacy administration and was a general college advisor. He served on the UNC faculty for 28 years. Wier was a native of Cairo, Nebraska, and received degrees from the University of Nebraska, the University of Washington and the University of Wisconsin. He specialized in natural substances used by North Carolinians and prepared several programs on the subject of the UNC Center for Public Television. Wier taught at UNC for 26 years.

REPORT OF THE ELECTIONS COMMITTEE

The NCPhA Election Committee met Thursday, June 25th to open and count the ballots in the mail election. Results are:

1st Vice President — Ralph Ashworth, Cary
2nd Vice President — Frank Burton, Greensboro
3rd Vice President — Robert Worley, Goldsboro

Executive Committee Members-at-Large

Phillip Crouch, Asheville
Steve Dedrick, Durham
Logan Womble, Plymouth

These officers will be installed in Asheville at the conclusion of the 1988 Annual Convention at the Grove Park Inn and will serve in their respective offices for the 1988–1989 Association year.

. . . . . .

Elected to the Board of Directors of the Pharmacy Foundation of NC:

James Creech, Smithfield
Banks Kerr, Raleigh
Harold Day, Spruce Pine
W.J. Smith, Chapel Hill

Members of the Elections Committee:

E.A. Brecht, Betty Dennis, Abraham Hartzema and Haywood Jones

WOMAN'S AUXILIARY

Continued from page 31

Consolidated Loan Fund. This was seconded by Jean Morse and agreed to by the board.

Peggy Jackson gave her final report from the membership committee. We have a total of 187 members, 17 of these being life members. A total of $1313.00 was collected in dues.

The president announced that Pharmacy Week will be observed Oct. 11th – 17th. It will be Talk About Rx Month. The theme is "Medicine — Ask About Your Medicine Before You Take It".

Jewell made a motion to keep the VIAL OF LIFE our State Service Project, under the leadership of Jerry White. This was seconded by Peggy Jackson.

Concerning our Service Project for the year (considering taking on something for substance abuse) a motion was made by Jean Morse and seconded by Peggy Jackson for each member of the Board to find whatever information they could and pass it on to the President.

The Fall Convocation will be on Wed. Oct 7th at the Institute. Partial plans were made for the Convocation. Jean and Peggy were asked to check on American Airlines concerning a program.

The president, in closing, read from "In My Own Back Yard".

OFFICE PRACTICE OF PHARMACY

Louis Ferguson has been practicing pharmacy in an office setting in Taylorsville, North Carolina since 1981. When you walk into his pharmacy, the first thing that becomes obvious is the absence of bottles. Louis prefers it that way and is convinced that many people in the community like it that way also. In 1980 he sold a pharmacy that he and a classmate from the University of North Carolina had bought and operated in Taylorsville since 1956. Louis says it took him 25 years to see that pharmacy was changing and he was ready to make significant changes in his own practice. What caused Louis to consider making major changes in his professional life?

Louis says it all started in 1976, shortly after he suffered a myocardial infarction. During the three months that he was away from the pharmacy, Louis began to evaluate the way he had been practicing. He felt that he needed a more "professional" approach. He says that he felt he should begin devoting more of his time and energy to the compounding of prescriptions and to counseling patrons about their medications. He began to read articles written by and about Eugene White, recipient of the Remington Award for his work in developing the office practice concept. Louis and his wife later visited White's practice in Berryville, Virginia. Eugene suggested that Louis also visit Carl Emswiller in Leesburg, Virginia. He secured a piece of property in Taylorsville, built a new building, and in May of 1981 opened his office practice. The rest, according to Louis, is history.

The most gratifying aspect of office pharmacy, according to Louis, is the one-to-one contact with people. He says, "This type of practice places you in direct contact with many people and that's the part I like the best." He prefers a low key approach to patrons and feels that word-of-mouth is his best promotion. He is quick to point out, however, that this is only one of many different ways to practice the profession. Louis Ferguson also believes that one of the greatest myths under which most pharmacists operate is that people are only interested in pharmacies which offer the cheapest products and services. He says, "There is a better way . . . and I think I may have found it."

from "Voice of the Pharmacist"

Donald W. Arthur, Chairman, Executive Committee of the National Association of Retail Druggists, presents the NARD Leadership Award to incoming NCPhA President Julian E. Upchurch.

CLASSIFIED ADVERTISING

Classified advertising (single issue insertion) 25 cents a word with a minimum charge of $5.00 per insertion. Payment to acompany order.

Names and addresses will be published unless a box number is requested.

In replying to "blind" ads, address Ad. No., Carolina Journal of Pharmacy, P.O. Box 151, Chapel Hill, NC 27514. Telephone (919) 967-2237.

We are seeking an ambitious and professional career-minded individual for Pharmacy-manager position in southeastern North Carolina near the coast. Computerized prescriptions, excellent salary, hospitalization and life insurance, paid vacations. Small professional pharmacy located in the center of a medical complex. Contact Box CDD, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

PHARMACIST WANTED: We are seeking an ambitious, and professional career-minded individual for a pharmacist position in Greensboro, High Point and Winston-Salem, NC. We offer excellent salary, stock ownership, educational subsidy, extensive benefits, retirement plan, 401K tax plan, annual salary merit reviews. "Pure pharmacy setting". If interested call Lew Thompson 1-800-233-7018 or send resume to: The Kroger Company, Attn: Personnel, PO Box 14002, Roanoke VA 24038. EOE.

PHARMACIST POSITION: Reynolds Health Center Pharmacy in Winston-Salem. Pharmacy hours 8–5, Monday through Friday. Salary negotiable, excellent benefits. Contact Forsythe County Personnel at (919) 727-2851 or Janet Foster at (919) 727-8264 for further information.

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PHARMACY FOR SALE: Coastal NC. Sales greater than $400,000.00; 60% prescriptions. 10 miles from the ocean. Contact Bullock & Whaley (919) 762-2868; PO Box 3783, Wilmington NC 28406.

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HOSPITAL PHARMACIST WANTED: Staff position available in a 68 bed acute care hospital in Siler City, NC. Hospital experience desirable. Salary commensurate with experience. For more information, contact Sandra McKinney, Chatham Hospital, Inc., P.O. Box 649, Siler City, NC 27344. (919) 663-2113.

PHARMACIST FOR HIRE: Mature Pharmacist, active in excellent health wants work with small town pharmacy or relief work. Call Craig, (919) 673-1368.

Continued on page 40

CLASSIFIEDS

Continued from page 39

STAFF PHARMACIST WANTED: Position at Kings Mountain Hospital. Modern 102-bed facility with computerized unit dosage. Hospital experience preferred but not necessary. Will consider a May graduate. Contact Jerry McKee at (704) 739-3601 Ext. 472.

PHARMACY DIRECTOR: Angel Hospital, an 81 bed community hospital in Weestern North Carolina, is seeking a Pharmacist (RPH) with previous experience in a hospital pharmacy. Responsible for managing pharmaceutical services and supervising activities of non-professional staff. Competitive salary and benefit package available in this scenic section of the mountains of WNC. Call for aplication or send resume to Personnel Department, Angel Community Hospital, P.O. Box 1209, Franklin, NC 28734. (704) 369-4266.

PHARMACIST WANTED: Independent pharmacy in Concord seeks a full time pharmacist. Good salary, excellent benefits. Call Mickey Watts (704) 782-2194.

PROFESSIONAL PHARMACIES: Several small prescription-oriented pharmacies are currently available for individual ownership in North Carolina. These opportunities provide the vehicle to practice pharmacy the way you were taught, while offering an attractive income and more time to be with your family. In some of these cases, financing is also available to qualified candidates. For more information write: Jan Patrick, 10121 Paget Dr., St. Louis MO 63132.

PHARMACIST: Professional Services/ Consultation — Temporary and/or Continual. Contact: L. W. Matthews at (919) 967-0333 or 929-1783. 1608 Smith Level Road, Chapel Hill, NC 27514.

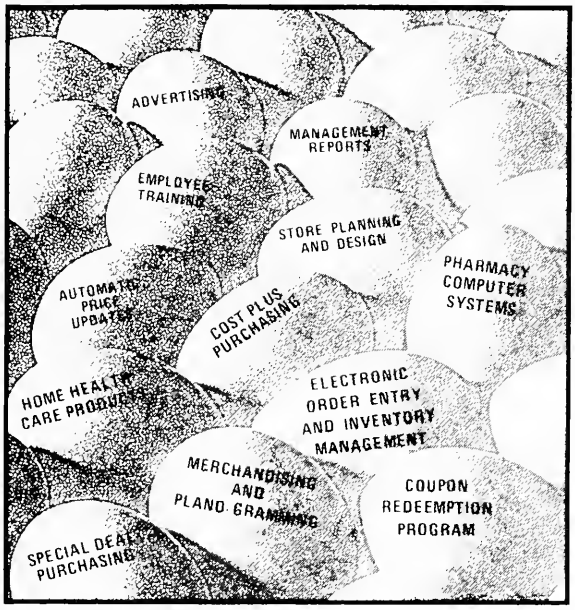
RELIEF PHARMACIST AVAILABLE: Central & Eastern North Carolina. Contact Pharmacy Relief, PO Box 2064, Chapel Hill NC 27515 or call 919-481-1272 evenings.

PHARMACIST WANTED. Full-time position on coast. Excellent working conditions. Competitive salary and benefits. Contact TO1, NCPhA.

PHARMACIST NEEDED: Crown Drugs has pharmacist positions open in central North Carolina due to planned expansion in 1987. We offer excellent starting salary, 40 hour week, paid vacation, insurance, and many other benefits. Come grow with us. Send resume to: Doug Sprinkle, Crown Center, 400 Commerce Place, Advance, NC 27006.

CLINICAL-STAFF PHARMACIST POSITION: Will be working every 3rd weekend and will have responsibilities in unit dose, IV admixtures, cancer chemotherapy, patient education, nursing inservice, pharmacy newsletter, pharmokinetic dosing, drug use evaluation and other evolving clinical applications. Some advanced training and experience in clinical pharmacy preferred. If interested and qualified please send resume to: Director of Personnel, Community General Hospital, PO Box 789, Thomasville NC 27360. EOE.

This issue of the *Carolina Jounral of Pharmacy* is being mailed to all pharmacists registered in North Carolina as well as out-of-state members of the NCPhA and other friends of pharmacy. Non-members are receiving this issue only as an introduction to some of the areas in which the NCPhA is working to improve the profession. We hope non-members will find enough worth-while activities to consider joining or re-joining their state pharmacy association. A letter of invitation will soon be mailed.



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THE CAROLINA
JOURNAL of PHARMACY

JULY 1987 VOLUME 67 NUMBER 7

Melinda Kay Steele, *left* and Lori Lee Wilkins accept the cash awards for the Ralph Peele Rogers Memorial Pharmacy Administration Award from Ralph Rogers, Jr. *Story on page 12.*

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JULY 1987 VOLUME 67 NUMBER 7
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CONTENTS

President's Page 4
UNC School of Pharmacy Strategic Plan 5
Trends Affecting Pharmacy Education & Practice 7
Report of the Employer/Employee Relations Committee ... 9
Two Students Win Rogers Award 12
Giving the Consumer a Say 14
CE Course — Soft Contact Lens Solutions 18
Dickinson's Pharmacy 25
Pharmacists Help Medic Alert Save Lives 27
How To Avoid Poisoning 31
Classified Advertising 34
Births, Deaths and Weddings 36

ADVERTISERS

Colorcraft 32
Dr. T. C. Smith Co./W.H. King Drug ..... Back Cover
Eli Lilly and Company 28
Geer Drug 22
Gene Minton Consulting Services 24
Jefferson-Pilot 2
Justice Drug Division 1
Kendall Drug Company ..... Inside Front Cover
Owens & Minor, Inc. ..... Inside Back Cover
Store Fixtures & Planning, Inc. 6
The Upjohn Company 10
Washington National Insurance Company 30

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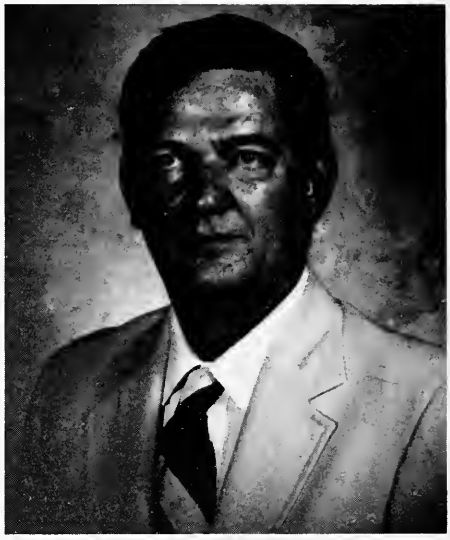
PRESIDENT'S PAGE

What is your most important possession? Think about this question for 60 seconds before you continue to read this article — 56-57-58-59-60. OK, I am sure that you came up with some really important things in your life that are very dear to you. Let's consider a few; your health, family, friends, house, car, freedom, church, etc. The list could go on and on. There is one thing that I did not name that I hope you did, as this is the subject I would like to share with you.

I hope that you named your profession of pharmacy, and your job in this profession as being one of your most important possessions. To discover just how important your pharmacy profession is to you, let's take 60 more seconds and think of all the things your job and profession allows us to do. Our profession has a very direct relationship to all of the important possessions that we have listed; our house, family, car, church, friends, and even our health. I think that you will have to agree with me that pharmacy *is important* to you! I also want to tell you something that many of you *do not* know. *YOU* are important to the profession of pharmacy and its survival as one of our most respected professions! *YOU* are the face of pharmacy to the public and you've done a good job!

At this point, I would like to ask your help in continuing to help your profession, so that your profession can continue to serve you. I would like to establish a $10 Club for Pharmacy in our state. This is not a new idea. The Methodist Church uses this method of raising necessary funds very successfully. All we need is for you to commit to a $10 *gift* to the profession of pharmacy on a maximum of two times a year. If we all pool our $10's, we can have the money to work with on projects needed for the support and survival of pharmacy as a profession. We need the money for legislative activity, eg. "Doctor-prescribing", mail order prescriptions, third class of drugs, lobbying, student loans, NCPhA Endowment Fund, needed repairs to the Institute, and many, many more good causes. We need money with no strings attached, that can be used for any purpose that will help or further our professional goals. Let's look at it this way. Today $10 is about the price of a meal in a restaurant. Will you take your profession out to eat a couple of times a year so that your profession can feed your family the rest of the year?

Please do not procrastinate on this $10 Club. We need each of you! You may not have the time to devote to the furtherance of pharmacy as a profession other than your daily activity, but your $10 gift will give others the tools to work with for you and for pharmacy.



Julian E. Upchurch
NCPhA President

We all know that there is strength in unity! We are all pharmacists whether we are in a hospital, retail, teaching, or manufacturing. I ask for the full support of your time, talent, and money. If you let down your profession, you are only hurting yourself!

Please join me today and become a charter member in the **NCPhA Ten Dollar Club.** Mail your check to NCPhA Ten Dollar Club, P.O. Box 229, Chapel Hill NC 27514. Thanks and you'll be glad you did.

ERRATA for May issue.

The advertisement for Dr. T.C. Smith Co./W.H. King Drug which appeared in the May issue (Volume 67, #5) was the result of a printing error in the reference to QS/1 Computer System. Dr. T.C. Smith Company and W.H. King Drug are not agents or distributors for the QS/1 System which is handled by other drug wholesalers advertising in this journal. The editor apologizes for any inconvenience or misunderstanding resulting from this mistake.

UNC SCHOOL OF PHARMACY STRATEGIC PLAN

Executive Summary

Significant changes in the health care delivery system and rapid advances in technology will clearly impact the pharmacy profession. Recognizing this changing environment, the School of Pharmacy has been engaged in a strategic planning initiative, and has developed the school's first strategic plan. The planning process involved significant input from the faculty, pharmacy practitioners, business and industry leaders, pharmaceutical association representatives, and other health professionals. Thoughtful consideration was given to some of the emerging trends in the health care delivery system, such as: the rapidly increasing numbers of elderly, the declining numbers of small rural hospitals providing traditional hospital services, the increasing amount of health care being delivered through outpatient service centers and in the home, the growth in the use of alternate forms of drug distribution, such as through individual physicians and via the mail, the increasing use of self-administered testing to detect disease, the emerging physician surplus, rapid advances in technology that bring about new forms of drug therapy, the increasing use of computers in diagnosis and management of disease, the increasing use of HMO insurance plans and decline of the traditional fee for service reimbursement system.

In light of these changes, consideration was given to the future role of the pharmacist and how these omnipresent trends might effect pharmacy education. The following areas have been identified as deserving of special attention:

The Need to Allow for Specialization
The Need to Expand Computer Expertise
The Need to Focus on Teaching Strategies
The Need to Acquire Modern Equipment
The Need to Foster Business and Industry Relations
The Need to Stress Fund Raising Goals

The subject of specialization directs attention to the manpower needs in North Carolina and to the educational programs required to meet those needs. It has been determined that the school should continue to graduate at least 165 students a year in the BS and Doctor of Pharmacy programs combined; beginning in the Fall of 1987, the school plans to gradually increase the Doctor of Pharmacy enrollment by between 5 and 10 students per year, with comparable decreases in Baccalaureate enrollment. Plans also call for increasing the numbers of graduate students who hold professional pharmacy degrees. The school will continue to closely monitor the changing environment to determine the extent these gradual programmatic changes are addressing the needs of the marketplace. In addition, the school will continue to address the needs of the practicing professional, the school's most visible product and a stalwart of the pharmacy profession, and begin to develop new educational opportunities for them.

Undeniably, computerization is having an impact on all aspects of pharmacy education and professional practice. To sustain its leadership position, the school must define the role of computers in both pharmacy practice and education, and fully implement their use by both students and faculty. The strategic plan calls for increasing the number of personal computers by 15 to 20 per year, through targeted fund raising and grant requests. Faculty are being encouraged to incorporate computer use into the curriculum and also focus on teaching techniques that will enhance students' skills in the areas of communications, problem solving and management. The plan calls for the school's curriculum committee to survey the faculty to determine what innovative teaching techniques are presently being used, examine their effectiveness and, where appropriate, encourage their broader application.

To maintain its leadership position in graduate education and research, the school recognizes the need to upgrade its equipment and laboratories. There is an urgent need to replace its 90 MHZ NMR and develop a practical "space needs" plan that will assure continued research progress. A key strategic element that is intended to further enhance research opportunities is the creation of an "Industry Advisory Committee" and continued dedication to the enhancement of business and industry relations.

Recognizing that striving for continued excellence inherently requires increasing funds, and that State resources are likely to remain limited, the school plans to look towards specialized fund raising efforts to reach its goals, that will be targeted towards specific needs, such as computer acquisition and faculty development. The development of a strong and

Continued on page 6

STRATEGIC PLAN

Continued from page 5

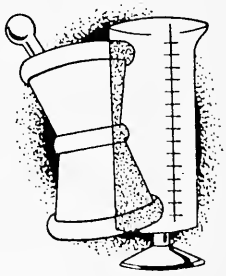
comprehensive public relations plan is also a key element in this strategy.

In addition to the areas highlighted above, the strategic planning document sets forth very specific objectives and strategies in each of the following areas:

- Pharmacy Manpower Needs
- The Doctor of Pharmacy Issue
- Achieving Educational Excellence
- Enhancing Faculty Development
- Enhancing Business and Industry Relations
- Marketing the School and the Profession
- Attracting Financial Support
- Addressing Facility Requirements
- Promoting Service to the Community
- Promoting Research
- Continued Planning

In conclusion, the School of Pharmacy is very pleased with the progress it has made towards achieving academic excellence. As one of the nation's leaders in pharmacy education, the school has now clearly reaffirmed its commitment to excellence for the future, by incorporating into its plans the continuation of a strategic planning initiative that will assure its continued dedication, clear programmatic direction, and resolute success.

from "The School of Pharmacy, A Strategic Plan, Planning for Excellence" The University of North Carolina at Chapel Hill



TRENDS THAT WILL EFFECT PHARMACY EDUCATION AND PRACTICE

Approximately 1000 individuals were directly involved in providing information for the strategic planning process. To provide specific background information that sets the stage for the strategic plan's thrust, a brief summary of the trends that is expected to affect pharmacy education and practice now and in the future are provided below, along with a summary of what these trends imply for pharmacy education. (Please refer to Exhibit A for a graphic depiction of these trends.)

The Growing Number of Elderly

The percentage increases in the elderly population are growing at an even greater rate in North Carolina than in the nation. By the year 2000, there will be more than one million North Carolinians over the age of 65, up from approximately 695,000 individuals over the age of 65 in 1986. The population over the age of 80 will increase by more than 90 percent in 75 of North Carolina's 100 counties by the year 2000.

The Changing Role of Hospitals

Many small primary care hospitals will close or significantly alter their focus to an outpatient service orientation.

Larger hospitals will become centers of high technology, and as a result of consolidations and closings there will be fewer larger acute care facilities of this genre. A relatively small number of major "for-profit" chains will dominate the hospital market.

The Focus on Outpatient Services

More health care services will be delivered on an outpatient basis in specialized outpatient service centers, such as ambulatory surgery centers and freestanding diagnostic and therapy clinics.

More health care services will be provided by and through commercial enterprises such as shopping malls, department stores, and business worksites.

More health care will be delivered through community services; by home-based service providers and through schools in varying degrees at various levels.

New Forms of Drug Distribution

The traditional forms of drug distribution, through community based pharmacies and through hospital in-patient services will be facing new competition. Drug distribution through mail order services and direct physician dispensing has already begun. As hospitals increase their emphasis on outpatient services, hospitals will consider expanding and altering their distribution functions.

The Increasing Use of Self-Administered Testing

More health care will be self-administered or administered by a family member. Self-administered blood tests, pregnancy tests, and cancer tests are current examples of what is on the horizon.

The Emerging Physician Surplus

The number of physicians is continuing to grow at rates three times greater than the general population and is projected to increase more than 50 percent between 1980 and the year 2000.

The incidence of drugs being dispensed by physicians is increasing and expected to continue with the rise in the commercialization of physician practices.

The Rapid Advances in New Technologies

Rapid advances in technology and science will bring about revolutionary changes in diagnosis and delivery of health care. Examples of recent advances include the use of nuclear magnetic imaging devices, lithotriptors, digital subtraction, robotics and monoclonal antibodies.

Many of today's experimental and high cost medical miracles will become routinely performed in specialized centers. New forms of drug therapy will become commonplace in the treatment of problems related to the aging process.

Computerization of the Health Care Industry

Computers will be involved in every aspect of health care delivery, from the business operations, to patient diagnosis and treatment.

Continued on page 8

TRENDS

Continued from page 7

The Increasing Number of HMO Insurance Plans

There have been estimates that by the year 2000, more than 25 percent of the population may be enrolled in HMO plans, a dramatic increase from today's approximately 8 percent. Expanded federal incentives for financing care for the elderly and poor could further accelerate this trend.

Immediate Implications These Trends Have for Pharmacy Education

The trends that have been identified have important and immediate implications for the Pharmacy profession. The School of Pharmacy has considered the implications identified below in the development of its strategic plan and has begun and will continue to address all of the following implications through specific curriculum changes, through new teaching approaches, and through additions to the experiential and "hands on" components of the curriculum:

The Need for Specialization

Hospital and community pharmacists will require a greater degree of sophistication and specialization to deal with further technological advances, and to interact with, or "treat," a generally sicker patient population.

The Need for Computer Expertise

Pharmacy Professionals will experience an increasing need to be well versed in computer technology applications, in both the health care service delivery areas and in the business and management area of pharmacy practice.

The Need for Enhanced Business Skills

Pharmacy Professionals will increasingly find it necessary to have strong marketing and management skills in order to evaluate and appropriately respond to the new markets that will be created for selling and distributing health care products, equipment and services, and for the provision and packaging of these services for individual home use.

The Need for Continuing Education

Pharmacy Professionals will find it necessary to keep abreast of changes in the entire health care delivery system and will need to consider the direct and indirect implications of such changes on pharmacy practice and pharmacy practitioners.

The Need for Effectively Communicating the Rapidly Increasing Quantities of Drug Information

Pharmacy Professionals should and must be highly knowledgeable "drug and medication experts" and become effective "communicators" of their expertise to health care providers and consumers. These skills will require not only a comprehensive knowledge of drug use and drug interactions, but will demand enhanced proficiency in communication skills.

The results of a comprehensive statewide survey, which was undertaken as part of the strategic planning process, helped to highlight and further confirm for the school that the following areas in the School of Pharmacy's program need to be given greater attention:

Programmatic Areas Needing Greater Attention

- Practical Experience
- Problem Solving Skills
- Business and Management Skills
- Communications Skills
- Product Information
- Computer Use and Application

The UNC-CH School of Pharmacy has already begun to make adjustments in the School's programs so that students who will be graduating over the next five years will be prepared for the changes that will be taking place in the health care system.

*From **Planning for Excellence, A Strategic Plan,** The University of North Carolina at Chapel Hill*

REPORT OF THE EMPLOYER/EMPLOYEE RELATIONS COMMITTEE

Presented at the 107th Annual meeting of the North Carolina Pharmaceutical Association, April 22–25, 1987, Charlotte

Minutes of the NCPhA Employer-Employee Relations Committee
Institute of Pharmacy, Chapel Hill
January 7, 1987

Members Present: Charles D. Blanton, Chairman, Stanley A. Biedney, John Mackowiack, Roy B. Smith, Jr., John F. Watts, Al Mebane

I. After discussion, members voted unanimously to recommend that the NCPhA initiate and fund a survey of pharmacists to determine, among other things, salary compensation, fringe benefits, and working conditions.
   A. The Committee specifically wanted questions touching the following areas
      1. Male vs. Female — employment terms
      2. New pharmacist vs. those with 10 or more years experience
      3. Overtime policies
      4. Hospital and institutional pharmacists compensation and fringe benefits
      5. Professional liability insurance

II. Polygraph and Urine Testing
   A. The Committee agreed upon the following
      1. Doubtful accuracy of polygraph
      2. Variance due to testing conditions and administrations of tests
      3. Degrading to professionals such as pharmacists
      4. Should be limited to investigation of problems such as money loss, control substance loss or abuse, or merchandise disappearance.
   B. Therefore, the Committe voted to submit a resolution urging the following
      1. Elimination of pre-employment and routine polygraph testing
      2. Substitution of written profile tests to screen prospective employees
      3. Support of any federal or state legislation to ban these questionable and controversial electronic testing procedures
   C. The Committee expressed concern about urine testing in the following areas
      1. False positives
      2. Laboratory errors
      3. Range of substances to be tested for
      4. Some ethical questions as with polygraph
      5. A watchful stance is recommended to the NCPhA

III. Professional Expenses — should employers pay Association Dues, CE expenses, license renewal, etc? NOTE: Tax Reform Act of 1986 severely limits these items as tax deductions to individual pharmacists.
   A. The Committee wishes to submit a resolution to the annual meeting suggesting that employers provide an optional expense account (with set dollar limit) to be used at employed pharmacist's discretion in meeting these expenses. These to be reimbursed on a case-by-case basis up to dollar limit.

IV. Professional Liability Insurance
   A. Questions were raised about true protection provided to employed pharmacists. It is possible that insurance company can reimburse corporation for liability loss, then sue the individual pharmacist to recoup the loss.
   B. Also concern was expressed about unavailability of personal professional liability insurance in North Carolina.
   C. Recommendations
      1. Incorporate questions about this in proposed survey
      2. Inform pharmacists of availability of coverage through NCPhA master policy.

V. Employment Conditions and Contracts
   A. After discussion for need of defining responsibilities of both employer and

Continued on page 11

RELATIONS COMMITTEE

Continued from page 9

employee, the Committee asked the NCPhA to develop and distribute a *model* pre-employment form (to be adopted for individual or employer use).

B. Also suggest article be published in the *Carolina Journal of Pharmacy* featuring this form and stressing items to be determined at time of employment.

VI. Retirement Plans

A. Since many employed pharmacists who are part of "2 earner" families will no longer be eligible for tax-deductible IRA contributions, the Committee would like to submit a resolution urging employers to offer alternate tax sheltered plans to pharmacist, such as Keogh and 401 K.

Minutes recorded and interpreted by

Charlie Blanton, *Chairman*
Employer/Employee Relations Committee

Committee Members

Charlie D. Blanton, Jr., *Chairman*

Robert S. Beddingfield	Olen Clyde Naylor, Jr.
Stanley A. Biedney	Roy B. Smith, Jr.
Larry D. Cole, Jr.	John F. Watts
Woodson B. Fearing	Lee D. Werley, Jr.

DRUG ABUSE BY PHARMACISTS AND PHARMACY STUDENTS

A study published in the February issue of the *American Journal of Hospital Pharmacy* reports that almost half of 312 pharmacists and two thirds of 287 pharmacy students who responded to a questionnaire on drug use had used controlled substances at some time without prescriptions. The drugs most commonly used were marijuana, stimulants, tranquilizers, and opiates. Authors of the report, all of whom are on the faculty of the Harvard School of Public Health, Boston, conclude that the extent of use was "usually quite small in light of the many years of drug access, and use was often for self-treatment." Nonetheless, they recommend that more drug-abuse prevention programs for pharmacists and pharmacy students are needed.

The research team mailed the survey questionnaire in November 1984 to 510 pharmacists and 470 pharmacy students living in Massachusetts. The 40-item, multiple-choice questionnaire contained questions on demographics, principal work setting or year in school, access to drugs, and drug and alcohol use. Results were derived by using standard methods of statistical analysis.

Pharmacy students used drugs more frequently than did the practitioners, primarily because of greater recreational use among the former group. The purpose of drug use by pharmacists was rather equally divided among self-treatment, recreation, and performance enhancement. Certain demographic risk factors were also found to be associated with recreational drug use; it was highest among young pharmacists, those of American citizenry, and those who rarely or never attended religious services.

Work settings influenced practitioners' drug use. For example, among those pharmacists working in sales or other nontraditional settings, 86 percent reported ever having used a drug; among those working in health maintenance organizations and clinics, 38 percent were either dependent or at risk of abuse. Hospital pharmacists had the lowest percentage in these drug-use categories.

Impairment of pharmacists because of drug or alcohol abuse has recently emerged as an issue for the profession. At least 30 states have implemented programs for impaired pharmacists. Epidemiological evidence of the extent of drug abuse by pharmacists, however, is scant. Based on this initial study, the authors conclude that there is a clear need for continued development of impaired-pharmacist committees and drug-abuse programs for pharmacists.

The report's authors are William W. McAuliffe, Ph.D., Susan L. Santangelo, Judy Gingras, Mary Rohman, Ph.D., Arthur Sobol, M.A., and Elizabeth Magnuson. Information in the report was derived from a larger study of drug-use patterns that also included practicing physicians and medical students. That report, of which McAuliffe was also primary author, was published in the *New England Journal of Medicine* in September 1986. A brief review of this study appears in the News section of the February issue of *AJHP*.

For a copy of the report, "Use and Abuse of Controlled Substances by Pharmacists and Pharmacy Students," contact the American Society of Hospital Pharmacists Public Information Department.

TWO UNC STUDENTS WIN ROGERS AWARD

Program participants, *left to right,* A.H. Mebane, III, Melinda Steele, Ralph Rogers, Jr., Lori Wilkins, Dr. Jean Gagnon.

Melinda Kay Steele and Lori Lee Wilkins, both UNC School of Pharmacy fourth year students, were awarded the Ralph Peele Rogers Memorial Award for excellence in Pharmacy Administration at a dinner held in the Carolina Inn.

The award, made possible by the family of Ralph Rogers, Sr.; Mr. and Mrs. Ralph P. Rogers, Jr. and Mr. and Mrs. J. Clinton Rogers, both of Durham, and Mr. and Mrs. Elizabeth Rogers Millar of Winston, is presented to a fourth year student who exhibits an interest in pharmacy administration and community pharmacy, is outstanding performance in classwork and submits a paper on pharmacy which is judged by the faculty of the UNC Division of Pharmacy Administration.

For the first time in the nine-year history of the award, two students were declared to be winners. Melinda Kay Steele from Shelby and Lori Lee Wilkins from Gastonia, each having over a 3.3 grade point average, were recognized at a dinner held in their honor. Representatives of the faculty and administration of the UNC School of Pharmacy, the NC Pharmaceutical Association, their parents and the Rogers and Millar families in attendance.

Al Mebane, Executive Director of the NCPhA served as Master of Ceremonies with remarks about the award and the selection process given by Dr. Jean Paul Gagnon, Chairman of the Division of Pharmacy Administration. Ralph Rogers, Jr. told of his father's interest in community pharmacy, stories about growing up in a community pharmacy environment and the need for expertise in business which led the family to establish the award.

KAPPA EPSILON

The North Carolina Alumni Chapter of Kappa Epsilon Fraternity will meet Sunday, October 18, 1987, 2:00 pm at the Institute of Pharmacy in Chapel Hill.

Topics include the installation of Alpha Rho Chapter at Campbell University, a review of the 1987 Annual Convention, and Care Packages. Anyone interested is invited to attend. For more information, call (919) 846-5799.

"FINESSE FOR SUCCESS IN A FUTURE PHARMACIST"

by Melinda K. Steele

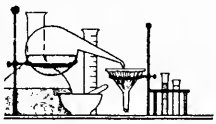
(Application Essay for Division of Pharmacy Administration Awards)

In the vast world of health care, pharmacy has grown to become a large and very vital part of the system. Pharmacy has changed dramatically over the last twenty years and is sure to continue in its fast-paced improvement in providing quality health care to the patient. In order for this growth to occur, the future pharmacist must take on large responsibilities as a professional and bring fresh new ideas into the clinics, hospitals, community pharmacies, and other health care settings. Each pharmacist must set his own goals, both personal and professional, although many times the two are intertwined with each other. I, myself, have set these goals for my career in order to become a successful pharmacist.

Being a fourth year pharmacy student, the goal of education still lies in the forefront of my career. The vast sea of knowledge has begun to unfold its depths as I learn through each semester. The responsibility to society as a pharmacist begins with striving to comprehend and apply this wealth of information to be able to provide the best care possible. Even after graduation, as the data base expands, so should mine through continuing education. We are expected to extend this knowledge, especially drug information, to the people and fellow professionals. After all, we are servants to the public. The most important goal set for myself as a pharmacist is to be the most useful information source possible, particularly in the drug related areas, no matter where I take my career.

The environment in which I plan to practice pharmacy is in the community pharmacy. I enjoy interactions with the public at large and feel I will give the most benefit to the most people in this setting. Not only will I be dealing directly with the patients through consultation and dispensing, but I will also be available to other health professionals for advice whenever the occasion should arise. I would like to start out in a chain pharmacy to learn the ways of the trade. Not only is there exposure to a great many drugs, but the opportunity to start to develop the needed communication skills exists. Working my way up to the position of manager of the pharmacy department in one of these chain pharmacies is another goal set. This position would allow me to utilize my skills to make the pharmacy most productive and efficient yet also to meet the needs of the consumers. Looking further down the career road, the goal of becoming a manager and possibly part owner of an independent pharmacy carrying only health care products and medication has been set.

When looking at the various career goals I have set for myself, they may be generalized by the main goal of being a pharmacist to the utmost of my ability. Of course these goals may change and new ones set as opportunities present themselves. However, the phrase I'll adhere to in my career is an altered cliché: Ask not what pharmacy can do for you, but yet what can *you* do for pharmacy.



"STARTING A CAREER IN PHARMACY"

by Lori Wilkins

(Application Essay for Ralph P. Rogers, Sr. Pharmacy Administration Award)

I am beginning my pharmacy career right here while still in school. By taking a variety of classes in pharmacy school, I am working toward becoming a success in the business world as well as a respected pharmacist to my patients. As far as when I graduate, I hope to find a job in an independent pharmacy, where I would have time to spend with my patients. I have worked extensively in both a chain and independent setting and I have found that indepdendent pharmacists have the time and chance to consult with patients as well as other health professionals, thereby truly practicing their profession.

I also want to promote pharmacy in the community, to let the public know what services we can offer them. As a member of SAPhA I have already started working towards this goal. By sponsoring Hypertension and Diabetes Screening Clinics, the community is conscious of what the pharmacy school as well as the pharmacists can provide to them. As a pharmacist I want to continue these services. They are vital to health care today and I want to strive to make the public aware of them.

GIVING THE CONSUMER A SAY

by Bruce R. Siecker, Ph.D., R.Ph.
and
Beverly A. Gilbert, R.Ph.
Galaxy Enterprises
P.O. Box 1242
Springfield, VA 22151

With so many choices facing the consumer, it is very important that pharmacists know how they and their pharmacy rate with area shoppers.

People have many more choices today in deciding where to get their prescription needs, health and beauty aids, and the various sundries found in the typical community pharmacy. Grocery and mass merchandisers, together with mail-order, physician dispensing, and hospital out-patient services, are all competing for the same consumers. In such an environment, it is very important that pharmacists stress service by continually monitoring their clientele.

Consumers are increasingly segmenting themselves into narrower life-style bands. The Saturday shopper in jeans may be the same one that wears a business suit during the week. What appears to the casual observer to be a neighborhood full of married couples may in reality be singles who are simply sharing housing expenses. Their needs and shopping behavior are often quite different than what might be expected. The challenge for today's pharmacy manager is to identify the nature of current and potential customers in some systematic way as a means of keeping the pharmacy in synch with its environment.

Trying to determine shopper reactions and needs in a busy pharmacy is not easy. Often shoppers are too busy to talk or may feel reticent to express their real feelings directly. They may also need more time to think about their answers. Trying to ask their opinions in the store may disrupt normal service, which is counter-productive to the intended purpose.

If customer service is to be more than a buzzword, it makes sense to learn what customers really want by asking them in a systematic fashion. One way to accomplish this is to use a written, self-addressed, postage-paid questionnaire that shoppers would be asked to complete and mail back to the pharmacy. An effective way to position such a program is to give it a special name, e.g., "Rate Us", "It's Your Turn", or "You Tell Us". Employees should be told of the importance of the effort — "It is our way of learning what the customer really wants; a satisfied customer is easier to serve, which will make your job easier" — and be given suggested ways of presenting the program to shoppers — "Mrs. X, here is our new 'Rate Us' survey form. We really want to learn what you think of us and how we can do a better job for you. Won't you please take a few minutes to fill out the form, when you get home. Then just staple it closed and drop it in a mailbox. We'll even pay the postage. We read and discuss each card sent in and do our best to improve our service to you."

There are many questions that can be asked and different ways to set up such a questionnaire. Here is a sample that can be used as is or as the basis for developing your own. (The reverse side can be used for the return address and a message to the shopper.)

One employee should be given the responsibility — a good candidate is one with a history of problems in understanding why good service is so important in a community pharmacy (as a good object lesson) — of recording and compiling the results on a periodic basis. Customer feedback, honestly considered and acted on, is surely preferable to their simply going somewhere else. Survey results can be used effectively in staff meetings to improve every aspect of a pharmacy's operation, particularly employee attitudes.

In today's highly competitive world, pharmacy employees and managers need constant reminders that consumers have real choices. The best way to assure that they choose your pharmacy is to seek their views continually. If listening is followed by sincere action that maintains a truly market-driven pharmacy, the future of community pharmacy services will be much brighter.

It's Your Turn

Dear Shopper:

At ABC Pharmacy we do our very best to provide high quality products and services that meet *your* needs. But, we want to be even better.

One way to accomplish this is by asking for —and then reviewing — your opinions. Below are several factors that shoppers tell us are important to them. Please circle the number that best describes your opinion about ABC Pharmacy.

Continued on page 15

IT'S YOUR TURN

Continued from page 14

Key: 1=excellent; 2=very good; 3=average; 4=below average; 5=poor

Employee product knowledge
1 2 3 4 5
Employee courtesy
1 2 3 4 5
Employee friendliness
1 2 3 4 5

Quality of prescription services
1 2 3 4 5
Product quality
1 2 3 4 5
Products on hand
1 2 3 4 5

Everyday prices
1 2 3 4 5
Sale prices
1 2 3 4 5
Overall value for money spent
1 2 3 4 5

Complaints handled satisfactorily
1 2 3 4 5

Return policy
1 2 3 4 5
Store hours
1 2 3 4 5

Store cleanliness
1 2 3 4 5
Parking area
1 2 3 4 5
Emergency prescription service
1 2 3 4 5
Delivery service
1 2 3 4 5

Overall rating of ABC Pharmacy
1 2 3 4 5
Compared to other stores
1 2 3 4 5

Comments: Please tell us what else — complaint? compliment? An outstanding employee? — you think we should know or improve.

_____

_____

Thank you very much. Simply fold this form in half and staple; then drop it in a mailbox. Postage paid by ABC Pharmacy.

Rest assured . . . WE DO LISTEN.

* * *

Bobbie S. Barbrey, center, and his wife Nancy display the Syntex Practitioner-Instructor of the Year Award presented by UNC School of Pharmacy Associate Dean George H. Cocolas. Barbrey lives in Raleigh and is a native of Michigan. The award is voted on by the students on rotation.

WORKSHOP ON CONSULTANT PHARMACY SERVICES SET FOR WILMINGTON, September 19

The NCPhA's Academy of Consulting Pharmacy will co-sponsor a workshop on consultant pharmacy services with the UNC Geriatric Education Center. The 2-hour workshop will be held at the Wilmington AHEC facility from 6:30 to 8:30 p.m. on September 19, 1987. Workshop leaders will be Dr. Timothy J. Ives from the UNC School of Pharmacy, Ernest Hargett from NC Division of Facility Services, and Charles Pulliam who is Pharmacy coordinator for the UNC Geriatric Education Center. Pre-registration is required and will be limited to 24 participants because of plans to make it a "working session", according to Pulliam.

Among things to be covered are the preparation of a proposal for consultant pharmacy services, practical and clinically appropriate approaches to chart review, current regulations for consultant pharmacy services to LTC facilities, and a look at common pharmacy-related deficiencies in LTC facilities.

The session has been scheduled to coincide with the Second Annual Pharmacy Practice Seminar which will be held in Wilmington the following day, September 20, 1987. Further information on the Workshop can be obtained by calling NCPhA offices (1-800-852-7343).

Jump On IN

ASSOCIATION EFFECTIVENESS: YOUR ROLE

The effectiveness of your State's Pharmacy Association depends upon many factors such as the elected leaders, a competent staff, adquate financial resources, continuing education programs, legislative representation, and ties with local and national pharmacy associations. None of these factors is more important, however, than is active participation by **YOU,** the individual member. Individual members provide an association with the following resources:

LEADERSHIP—by serving in elected or appointed positions.

DIRECTION—by establishing policies to guide the association's staff and their activities.

FINANCIAL RESOURCES—by paying membership dues.

PROFESSIONAL ENHANCEMENT—by participation in continuing education programs that update or advance professional competence.

POLITICAL CLOUT—by providing personal contact with state legislators.

COLLECTIVE STRENGTH—by personally recruiting new members to assure growth in the Association's membership.

NATIONAL REPRESENTATION—by serving as a delegate, committee member, or officer in one of pharmacy's national associations.

HOECHST-ROUSSEL PRESENTS GIFT TO CAMPBELL PHARMACY SCHOOL

Hoechst-Roussel Pharmaceuticals Inc. recently made a gift to the Campbell University School of Pharmacy. A liquid chromatograph, a liquid scintillation system and a virtis lyophilizer were presented to the Pharmacy School for use in their laboratories.

Dr. Paul W. Hale, Midwest Manager, Scientific & Professional Affairs, Hoechst-Roussel, recently made a visit to the Pharmacy School to make the presentation to the school.

"We are very pleased that Hoechst-Roussel has made this substantial contribution to our School of Pharmacy," said Dr. Ronald Maddox, dean of the School of Pharmacy.

"All of the equipment is standard in a functional research laboratory and will be used frequently. The equipment will complement our teaching efforts and will be accessible to students under the supervision of the faculty," said Dr. Harry Rosenberg, professor of Pharmaceutical Sciences at Campbell. The equipment has a combined value of $17,000.

The liquid chromatograph is designed to separate chemical compounds found in mixtures. At the School of Pharmacy its primary utilization will be in the separation and identification of drugs and their metabolites in body fluids. The liquid scintillation system is used to measure the radioactivity emitted by test compounds. The virtis lyophilizer is designed to freeze-dry aqueous solutions.

POSITION AVAILABLE

The Kansas Pharmacists Association (KPhA) is accepting applications for the position of Executive Director. KPhA is a professional association representing pharmacists in Kansas with an office located in the capital city, Topeka. The Association has its own office building, has a staff of eight (6.5 FTEs), an annual budget exceeding $290,000 and approximately 1,000 members (57% of the practicing pharmacists in Kansas).

Experience in general, association and financial management, as well as lobbying is preferred. The successful candidate must have excellent oral and written communication skills, must be well organized and must be able to work well with association members and staff. A candidate with a pharmacy background is preferred, but not required. Salary is commensurate with education and experience.

Applicants should send a letter of interest, resume and a list of references to Lawrence E. Shaw, Jr., Chairman, Search Committee, P.O. Box 1068, Salina, Kansas 67402-1068.

Dr. Ronald Maddox (left), Dr. Paul Hale (center) and Dr. Tom Wiser (right) are pictured with the liquid chromatograph, a gift of Hoechst-Roussel Pharmaceuticals Inc. to Campbell University School of Pharmacy

CORRESPONDENCE COURSE

ADVISING CONSUMERS ON SOFT CONTACT LENS SOLUTIONS

by J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati, Cincinnati, OH
and
Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University, Ada, OH

Goals

The goals of this lesson are to:

1. discuss solutions and disinfection methods in the care of soft contact lenses;
2. explain how to advise patients on the proper use of the solutions.

Objectives

At the completion of this lesson, the successful participant will be able to:

1. identify solutions intended for the care of soft contact lenses;
2. explain the proper techniques for using these solutions.

Contact lenses, including the basic difference between hard and soft lenses, and solutions used to care for hard contact lenses were discussed in previous lessons. A quick review of these topics will be helpful to better understand soft lens care products.

A basic but important difference between hard and soft contact lenses is that the soft variety is hydrophilic and will absorb water. Most individuals who wear contact lenses report that the soft lenses feel more comfortable in the eye. However, soft lenses also have an affinity for adsorbing smoke, dust, protein, aerosol particles, bacteria, chemicals, and other foreign material. The more hydrated the lenses, the greater is their affinity for colleting deposits. They must, therefore, be thoroughly cleaned, and inserted and removed from the eyes properly.

The best technique for inserting and removing soft contact lenses is to first thoroughly wash the hands with a noncosmetic soap. The hands should then be dried with a lint-free towel. This is especially important for the fingers that will touch the lenses. The soft lens is then removed and cleaned.

Deposits that accumulate on lenses are the most bothersome aspect of caring for soft lenses. Improper cleaning is reported to be the most prevalent cause of eye irritation and injury, and is the leading reason why individuals discontinue wearing soft lenses.

An ideal method for cleaning soft lenses is to place two to three drops of cleaning solution on each lens surface, then gently rub the lens between the thumb and forefinger, or between a fingertip and the palm of the other hand, for twenty to thirty seconds. This emulsifies oily substances and loosens mucoproteins that have collected on the surfaces during wearing. The individual should use care to avoid scratching or cutting the lens with a fingernail because, unlike hard lenses, the soft variety can tear rather easily.

After cleaning, the lenses must be rinsed with sterile saline solution. Tap water should not be used because minerals in tap water can be adsorbed onto the lens. After they are thoroughly rinsed, the lenses must be disinfected by thermal or chemical means. Following this procedure, they are rinsed again with sterile saline solution

in the service of pharmacy

This continuing education for Pharmacy article is provided through a grant from MERRELL DOW PHARMACEUTICALS INC.

and are ready to be reinserted into the eye, or they can be left soaking in saline solution for insertion later.

Cleaning Solutions

The ingredients in most soft contact cleaning solutions are basically the same as those in hard contact lens products. However, their concentrations in soft contact solutions are often lower.

There is a lack of objective comparative data for the various brands of solutions because few studies have been performed. Consumer preference and fitter recommendations determine which solutions within a particular category of soft lens products will be used.

Some manufacturers believe that high viscosity is important for cleaning solutions. Therefore, they include cellulose derivatives in their products to thicken them. Other manufacturers believe that solutions should be less viscous to assure optimal cleaning activity.

In either instance, thorough and complete rinsing of the lenses following use of any cleaning solution is extremely important to maximize removal of all of the chemicals and loosened debris. After cleaning, the individual should hold the lens up to a light. If the lens appears hazy or spotted, the cleaning procedure should be repeated.

There are two basic types of soft lens cleaning solutions, those intended for daily use and those for weekly use. Those just mentioned are used as **daily cleaners.** They consist of nonionic detergents and wetting agents, along with preservatives and buffers. These surface active solutions are effective for removing lipid accumulations. They are not as effective for protein deposits.

Celaning solutions should be used immediately after removing the lenses from the eye. Once protein deposits accumulate on the lens surface, they become extremely difficult to remove.

Other cleaning aids are designed as **weekly cleaners.** They are used to supplement the surface-active cleaners. Milky white, opaque deposits can form on soft lenses. These deposits are composed of protein, a normal component of conjunctival secretions. They precipitate on the surface of the lens and become bound to the plastics. This then leads to decreased visual acuity, eye irritation, and the inability of the wearer to keep the lenses in as long.

Products for weekly use are available either as tablets to be dissolved in water, or as pre-mixed solutions of highly concentrated cleaning agents. The tablets contain papain or pancreatin which are proteolytic enzymes that destroy peptide bonds formed between the protein and the lens, without harming the lens. Lenses should be soaked in the solution for at least four hours, preferably overnight.

Individuals who use weekly cleaning solutions must follow the manufacturer's directions explicitly, including the rinsing off of all traces of the solution. If they fail to follow the directions correctly, the chemicals in the cleaners can adhere to the lens and later cause irritation to the eye as they are released after the lens is reinserted.

Rinsing Solution

The rinsing solution used for soft lenses is sterile saline. There are three basic types of products: preserved solutions, single-use unpreserved pre-mixed solutions, and solutions made from salt tablets.

First, the **already-prepared, preserved saline solution** is used by most soft contact lens wearers because of its convenience. Until recently, all commercially available preserved saline solutions contained thimerosal as the preservative. These solutions were basically interchangeable. However, thimerosal is an organic mercurial that interferes with bacterial cell metabolism, resulting in bacteriostatic action. It is reported to irritate the eyes in approximately 10 to 20 percent of those persons who use it. Individuals so affected can either use the **single-use, unpreserved premixed saline solution** which is more expensive, or prepare their own rinse from salt tablets.

Self-prepared saline solutions made from salt tablets have a cost advantage over commercially prepared products. But problems can occur if the individual does not prepare the solution correctly. Also, they must keep their storage bottle clean at all times.

Oral salt tablets intended to replace sodium which is lost in sweat during physical exercise should not be used to prepare solutions for rinsing contact lenses. These contain other ingredients, in addition to sodium chloride. Also, table salt should never be used to make saline solutions to rinse lenses because it contains iodine and numerous other impurities which can be irritating to the eye. Table salt is not required to

Continued on page 20

CORRESPONDENCE COURSE

Continued from page 19

meet rigid USP standards as sodium chloride intended for medicinal purposes.

Another common problem with preparing saline from salt tablets involves the use of bottled or tap water instead of distilled water. Again, these two types of water contain numerous impurities, some of which can ruin contact lenses. They can also be contaminated with bacteria and may contain particular matter that is injurious to the eye.

Improper preparation of saline solutions may result in an incorrect pH. Changes in the pH can either shrink or expand the size of soft lenses. The same is true if the salt concentration is incorrect, resulting in a hypotonic or hypertonic solution.

The most important question is, "Has the solution been correctly prepared so that it is sterile?" If it isn't sterile, it should not be used to care for contact lenses that will be placed in the eye.

Recently, saline solutions preserved with sorbic acid have been made available in this country. These solutions, while more expensive than solutions self-prepared from salt tablets, are much less expensive than single-use containers of unpreserved saline solution.

Some manufacturers have recently introduced multiple-use, unpreserved saline solutions. If used correctly, these solutions will remain sterile for the few days during which the contents of a single bottle are used. In either instance, these solutions are usually better tolerated by individuals sensitive to thimerosal.

Disinfection Methods and Solutions

There are two basic methods for disinfecting soft lenses: chemical and thermal. Following cleaning and rinsing, soft lenses must be disinfected before being reinserted into the eye. The reason for this is that bacteria, viruses, fungi, and other microorganisms can be adsorbed onto soft contact lens surfaces, possibly resulting in infection.

The term *sterility* is not used because true sterility of soft lenses is not possible. As soon as the lenses are placed in the eye, they become recontaminated.

Figure 1 demonstrates a protocol for the various types of disinfection methods. There is some controversy as to which method is better, but many experts report that they consider **thermal disinfection** to be superior to various chemical means. Thermal disinfection is easier and causes less irritation to the eye.

The most common method for **chemical (cold) disinfection** is to immerse the lenses in a chemical disinfection solution for at least four hours in order to kill any adhering bacteria. There are solutions for both a two-step method (e.g., Normol/Flexsol and Soft Mate), and a one-step method (e.g., Flex Care and Bausch & Lomb Sterile Disinfecting Solution). Personal preference dictates which method a patient will choose.

Some experts believe that the two-step method is better for older patients and other persons with insufficient tear secretion because it adds another step to rinsing off chemicals that can irritate the eye.

A newer method of chemical disinfection utilizing hydrogen peroxide has recently been introduced to this country. It is widely used in Europe and has many proponents who claim better disinfectant activity and less eye iritation.

While the chemical method of disinfection is more expensive as far as purchasing the solution is concerned, it does not require electricity to perform. So, its higher initial cost is tempered somewhat by the fact that there is no additional expenditure for energy. Some experts feel that the chemical method is more likely to prolong the life

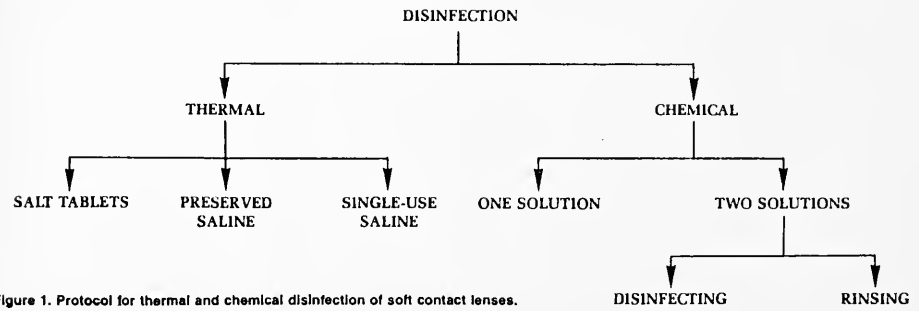


Figure 1. Protocol for thermal and chemical disinfection of soft contact lenses.

of the lens. But others state that it is too irritating and that the thermal method is better.

Consumers should not switch from chemical to heat disinfection method without seeking professional assistance. However, switching from thermal to chemical is possible. The reason for this is that switching from the chemical to thermal disinfection method without first leaching out all of the chemicals from the lens can render them opaque and useless. These chemicals can form hardened layers which may be baked into the lens surface by the heating process. Anyone choosing to make this transition must run the lenses through several soakings in fresh batches of saline solution.

Another method is to use the weekly enzyme tablet cleaner for several days, rinse the lenses in fresh saline six or more times the next day, then rinse again and sterilize. It may be best, however, to have the lens fitter purge the lenses using the special ultrasonic equipment in his office.

Chemical disinfection solutions must be completely rinsed off after each use. They contain thimerosal and either chlorhexidine or hexadecyltriethanol ammonium chloride, all of which can cause irritation to the eye. They will bind to the lens, very little at first, but in increasing quantities as the lens ages.

Thimerosal does not bind with the lens matrix to the extent that it does with debris. Therefore, the cleaner the lens, the less chance for irritation.

Chlorhexidine and hexadecyltriethanol ammonium chloride, however, can bind tightly to lenses and accumulate in high concentration to soft lens polymers. If the lenses are clean, the chemicals are released very slowly and cause few problems. The presence of debris on the lenses enhances their release and, therefore, increases the chance for irritation.

There are also problems associated with **heat disinfection.** First, the storage case must be kept meticulously clean and should be scrubbed with surfactant cleaners at lest once a week. It should then be rinsed with hot tap water and rinsed with saline. The individual should make sure his storage case doesn't leak. If it does, the solution can evaporate during heating and the lens may be ruined.

The heating unit must also be checked regularly. The rubber gaskets may deteriorate because of repeated heating. This could result in evaporation during heating, with the lenses sticking to the unit, thus damaging them. The unit itself may not heat sufficiently so that the lenses are improperly disinfected. Othertimes, the unit may fail to shut off.

At one time, heating units sterilized soft lenses by essentially the same mechanisms as autoclaving, i.e., heating to 220°F or higher and holding the temperature for twenty minutes or longer. One problem with this method was that daily boiling severely shortened the life of the lenses. The newer heating units merely raise the temperature to about 175°F and maintain it for approximately ten minutes. This procedure has the same effectiveness as boiling because it is done under pressure. The complete cycle for heat disinfection generally requires from twenty to thirty minutes. After cooling, the lenses can be removed from the heating unit and inserted.

TABLE 1
Ingredients in Contact Lens Solutions and Their Functions

CHELATING AGENT:
Ethylenediamine tetraacetic acide (EDTA)*

DETERGENTS:
Octylphenoxyethanol (OCT)
Tyloxapol (TYL)

DISINFECTANTS:
Chlorhexidine (CH)
Hydrogen peroxide (H_2O_2)

PRESERVATIVES:
Potassium sorbate (PS)
Sorbic acid (SA)
Thimerosal (TH)

SURFACTANTS:
Bis-2-hydroxyethyl tallow ammonium chloride (BTA)
Polysorbate (Polyoxyethylene) 21 (P21); 80 (P80)
Poloxamer 407 (P407); 188 (P188)
Polyvinyl alcohol (PVA)
Povidone (Polyvinylpyrolidine) (PPP)
Tris-2-hydroxyethyl tallow ammonium chloride (TTA)

VISCOSITY AGENTS:
Hydroxyethylcellulose (HEC)
Polyvinyl alcohol (PVA)
Propylene glycol (PRG)

*The abbreviations within parentheses are to simplify Table 2. They are not the chemical formulae for the compounds listed.

Continued on page 23

CORRESPONDENCE COURSE

Continued from page 21

The individual should not reuse preserved saline in a heating unit. This can lead to grey discoloration due to thimerosal precipitation on the lens. He should never use chemical disinfectant solutions for the thermal procedure because, again, chemicals in those solutions can adhere to and ruin soft lenses.

TABLE 2
Commercially Available Soft Contact Lens Solutions

CLEANING (Daily)	**INGREDIENTS***
Daily Cleaner (B&L)	PVA, TYL, HEC, TH, EDTA
LC-65	?, TH, EDTA
Pliagel	P407, SA, EDTA
Preflex	Same as B&L
Soft Mate Daily	OCT, HEC, TH, EDTA
Soft Mate ps Daily	OCT, HEC, PS, EDTA
CLEANING (Weekly)	
Alcon	Pancreatin
Softlens	Papain
Soft Mate	?, TH, EDTA
DISINFECTING	
Allergan	BTA, TTA, TH, PRG, P80
B&L Disinfecting	CH, TH, EDTA
Flex Care	Same as B&L
Flexsol/Normol	CH, PPP, P80, TH, EDTA
Septicon	H_2O_2, Na stannate, Na nitrate
Soft Care	CH, PPP, OCT, TH, EDTA
Soft Mate Disinfecting	Same as Soft Care
Soft Mate Rinsing	CH, TH, EDTA
All contain NaCl and a borate buffer	
PRESERVED SALINE (NaCl +)	
B&L	TH, EDTA
Boil 'N Soak	Same as B&L Preserved Saline
Hydrocare	TH, EDTA
Lensrins	TH, EDTA
MiraSol	P407, TH, EDTA, SA
Sensitive Eye Saline	SA, EDTA
Soft Lens Rinse	TH, EDTA
Soft Mate Therm	Same as Soft Lens
Soft Mate ps	PS, EDTA
Sorbi-Care	SA, EDTA
LUBRICATING	
Adapettes	PPP, TH, EDTA
B&L Lubricant	PPP, TH, EDTA
Clerz 2	HEC, P407, SA, EDTA
Lens-Wet	PVA, TH, EDTA
Soft Mate Comfort Drops	PVA, HEC, TH, EDTA
Soft Mate ps Comfort Drops	PVA, HEC, PS, EDTA

*See Table 1 for explanation of ingredients.
? = contains unidentified ingredient(s)

Common Consumer Questions

There are several questions that are asked by contact lens wearers regardless of the type of lens worn. Some questions and suggested answers follow.

"My vision is foggy. What should I do?" The individual should clean the lens again. If vision is still impaired, the person should make sure the lenses are in the correct eyes. If the problem is still not corrected, a physician should be contacted. It is possible that he is experiencing hypoxia (insufficient oxygen to the cornea). The same advice is appropriate if the individual sees halos around lights, expecially at night.

"I fell asleep with my contacts in. What should I do?" This is not a problem if the lenses are the soft variety. With hard lenses, however, it can be quite an unpleasant and memorable experience.

The first thing the person should do is blink the eyes often and hard, to try to increase tear secretion. Next, he should flush the eyes with a large quantity of saline, possibly by placing several drops into the eyes. He should continue blinking, and, after cleaning the hands thoroughly, try to remove the lenses. If they can't be removed or if severe pain is noted, the person should immediately go to the fitter's office or to an emergency medical service. These facilities have specially-made suction cup devices which can be used to remove the lenses.

"My eyes hurt when I wear my lenses. What should I do?" First of all, the individual should remove the lenses. If the pain subsides, the lenses should be cleaned and rinsed, and replaced in the eye. If the pain continues, the lenses should again be removed and examined against a light to see if there is anything unusual on them. If not, they should be rinsed again and reinserted. If the eye still hurts, the individual should see the fitter or a physician, or repeat the entire process again.

If pain continues after the lenses are removed, a physician should be consulted. The potential for corneal abrasion is significant. This is not amenable to self-treatment.

Continued on page 24

CORRESPONDENCE COURSE

Continued from page 23

"Can I switch brands of contact lens solutions?" The answer is probably yes, if it is the same type of solution for the same type of lens. The answer is absolutely no, if the label does not specifically state that the solution is intended for the type of lens being worn. Since contact lens solutions are included under the "Device" section of the Pure Food, Drug and Cosmetic Act, they must be tested for safe use for each specific type of lens. Solutions for hard lenses are not indicated for use with soft lenses. They are generally highly concentrated and their ingredients (most specifically benzalkonium chloride) may damage the lenses or injure the eyes.

"Can I switch from a chemical to thermal disinfection system?" It is in the individual's best interest to call the fitter before attempting this transition, to assure that all of the chemicals are leached out of the lenses before they are heated.

"Can I use tap water to dissolve my enzyme tablets?" The answer, absolutely not! These tablets must be dissolved in either distilled water or saline depending on the product. Tap water can inactivate the enzymes.

"How about using tap water for preparing my saline from salt tablets. Is this okay?" Again, the answer is absolutely no.

Summary

General consumer advice for contact lenses and their solutions was summarized in last month's lesson. Wearing contact lenses and using contact lens solutions is relatively safe, and not associated with difficult procedures or dangerous problems. It should be kept in mind that contact lenses are foreign substances that are placed in the eye. The person's present and future vision is at stake. Common sense and good professional judgement should be paramount in any consumer advice on the use of eye preparations.

Because soft contact lenses are hydrophilic, they can readily react with environmental chemicals, cosmetics, and drug products used in and around the eyes. They must be sterilized (disinfected) before reinsertion to reduce the chance for contamination. The pharmacist should assure that these points are understood.

Contact lens wearers should comply with all steps involved in caring for their lenses. Pharmacists should assure that all solutions are stocked at all times. Consumers should be reminded to keep an adequate supply at home, including back-up containers.

Contact lens wearers usually start out with the best intentions for keeping their lenses clean and properly cared for. However, over time, they may become less concerned with protocol. While some persons can afford to be less concerned because their tear secretions contain few proteins and accumulated deposits on their lenses are not excessive, others may experience significant build-up. Individuals should be reminded to properly care for their lenses. This will be made easier if the pharmacist is available to counsel lens wearers on the proper use of the products he provides.

DICKINSON'S PHARMACY

by Jim Dickinson

Writing letters. Pharmacists who write letters get their way, and if only more would do it, more would be done for the profession.

After reporting the salutary effects of your letters to HHS Secretary Don Newman on the question of mandatory Medicaid discounts, I've had other evidence on the power of pharmacy's pens.

"I had almost given up writing any more letters," writes Sutter Creek (Calif.) pharmacist Paul Wesseler, "but I wrote to Don Newman at your suggestion. Thanks for reporting the results. Now I am more ready to fight the MD dispensing issue . . ."

So, apparently, are many more pharmacists. Capitol Hill saw the largest outpouring of grassroots pharmacy energy anyone can remember, after the National Association of Retail Druggists activated a 60,000-piece "legislative alert" mailing on the dispensing physicians issue in April.

The heat was so intense that one congressman reportedly assigned a staffer fulltime to fielding pharmacists' telephone calls.

NARD's strategy was devastatingly simple, if expensive. It followed up its "alert" mailing (which went to non-members as well as to NARD members) with two Western Union Mailgram alerts, one of which triggered state association and local grassroots alert systems on the eve of critical votes by House committees.

Needless to say, both votes went pharmacy's way, largely overcoming American Medical Association opposition to federal restrictions on physician prerogatives. The AMA had earlier joined with NARD and the National Association of Chain Drug Stores in a statement opposing physician dispensing for profit (a position compatible with its traditional posture down the years), but it insists that its members are too honorable to need a law — especially a federal law.

Now, the united forces of pharmacy face some exceedingly dishonest tactics by the drug repackagers who exploit physicians' economic misfortunes in the doctor glut. As these hucksters face their fate, they're turning nasty, openly recommending the elimination of the retail pharmacy marketing level from the drug distribution system.

And they're aiding AMA efforts to defeat federal legislation on the ground that it's a state function to police the practice of medicine. The repackagers would rather fight 50 different fights, with help from the politically extremist and anti-pharmacy Federal Trade Commission in each fight, than lose it all in one Washington fight where the FTC is out of favor.

But it's the awesome power of the pharmacist's pen that will win or lose this fight. Pharmacists have seldom coalesced on an issue as they're coalescing on this one.

Write your Congressman and your two Senators now. This much you can do!

* * *

Showing the way. Drug companies have been everyone's favorite villains for so long now, it comes as a shock to see the industry any other way.

But there in the middle of the Gary Hart fiasco, the Irangate hearings, the PTL scandal, insider trading on Wall Street, and a seemingly endless list of other national shames, everyone's favorite villain (the PMA) took the high road in May.

Hard on the heels of a severe beating it received a few weeks earlier in Congress over drug price increases, the PMA on May 4 went on record as being opposed to sales of investigational drugs.

The very companies that had just been lambasted for "greed on a masssive scale" by House health chairman Henry A. Waxman (D-Cal.), turned their backs on the potentially enormous profits that might be legally made on unapproved drugs such as numerous AIDS and cancer treatments still under development.

The PMA's position puts its members' own *long-term* interests ahead of their short-term interests, setting the industry apart and high above the likes of Gary Hart, Irangate manipulators, inside-traders *et al.*

The investigational-drugs-for-sale issue, advanced to its great discredit by the Food and Drug Administration as a quick fix for bringing AIDS drugs to the terminally ill before they're tested properly, could profit companies in the short term, but cost them dearly in the long-term, PMA realized.

Primarily, if you can make a quick profit without doing expensive, and potentially self-

Continued on page 26

DICKINSON'S PHARMACY

Continued from page 25

defeating research, the system will eventually be skewed away from the long, hard grind of finding truly valuable therapies.

PMA recognized, at least in this instance, that our society already has too much of a tendency to live for today and to let tomorrow take care of itself.

As with physician dispensing also, any time a vested-interest group (whether retail pharmacy or drug innovators) puts the long-term view ahead of the short-term view, chances are the public interests will be advanced.

In both of our examples above, surely this is the case.

This feature is presented on a grant from G.D. Searle & Co. in the interests of promoting the open discussion of professional issues in pharmacy. G.D. Searle & Co., accepts no responsibility for the views expressed herein as they are those of the author and not necessarily those of G.D. Searle & Co.

CORRESPONDENCE COURSE QUIZ

Soft Contact Lens Products

1. Which of the following is the preservative that reportedly causes the LEAST irritation to the eye?
   a. Chlorhexidine
   b. Sorbic acid
   c. Thimerosal
   d. Tyloxapol

2. Unlike daily cleaners, the weekly soft contact cleaning tablet products contain:
   a. cellulose derivatives.
   b. nonionic detergents.
   c. proteolytic enzymes.
   d. wetting agents.

3. All of the following would be appropriate to recommend to a customer requesting a daily cleaner for soft contact lenses EXCEPT:
   a. Clerz 2.
   b. LC-65.
   c. Pliagel.
   d. Preflex.

4. Contact lens wearers who see halos around lights, especially at night, should check with their ophthalmologist because this is a warning sign of which of the following conditions?
   a. Bacterial infection
   b. Conjunctivitis
   c. Corneal hypoxia
   d. Glaucoma

5. The one ingredient that is contained in all soft lens rinsing solutions is:
   a. benzalkonium chloride.
   b. methylcellulose.
   c. sodium chloride.
   d. thimerosal.

6. When compared to hard contact lenses, all of the following statements about the soft variety are true EXCEPT:
   a. softs are hydrophilic, hards are not.
   b. softs are more durable than hards.
   c. softs must be sterilized between wearings, hards to not require this.
   d. softs are more difficult to care for than hards.

7. Papain and pancreatin are contained in soft lens cleaning preparations to remove deposits of which of the following?
   a. Calcium
   b. Carbohydrates
   c. Lipids
   d. Proteins

8. Which of the following is both a surfactant and a viscosity agent?
   a. Hydroxyethylcellulose
   b. Octylphenoxyethanol
   c. Polyvinyl alcohol
   d. Potassium sorbate

9. If a soft contact lens wearer chooses to change the method of disinfection, which of the following is the safest switch without talking to the fitter?
   a. From chemical disinfection to thermal
   b. From thermal disinfection to chemical

10. The concentration of potentially irritating ingredients in soft contact lens solutions is generally:
    a. higher than in hard lens solutions.
    b. lower than in hard lens solutions.

ANSWER FORM on page 29

PHARMACISTS HELP MEDIC ALERT SAVE LIVES

by Robert C. Johnson
Executive Vice President, California Pharmacists Association, and Chairman, Medic Alert National Pharmacy Task Group

The National Pharmacy Task Group, in collaboration with Medic Alert Foundation, unveiled a pharmacist-to-patient education program featuring Medic Alert's service at the American Pharmaceutical Association's 1986 Convention in San Francisco.

The program has experienced an excellent beginning as pharmacists across the United States daily make the decision to incorporate into their patient service the Medic Alert Emergency Information Program.

Through pharmacists' efforts, it is estimated by the end of the first full year, some **14,400** people will be protected by the Medic Alert service representing a 242% increase over 1985.

Based on our **users serveys,** the following will be experienced for each 14,400 people who join Medic Alert:

432 will experience their lives being saved
2880 will receive definite assistance in emergency diagnosis and treatment
1152 will experience having their length of stay in the hospital reduced

It is believed the pharmacist/Medic Alert program will continued this rapid growth because:

1. It does what it is designed to do:
   - Protects our patients health.
   - Expedites efficient emergency medical care.
   - Plays an important role in establishing your pharmacy as a source of professional medical information to your patients.
   - Shows your patients you value their health and well-being.
2. It is the only national recognized emergency data system that provides medical personnel with vital patient information — provides it quickly, accurately, in one place, on time and at no cost to the medical profession.
3. It is the only **nonprofit**, tax-exempt organization devoted solely to providing quality emergency medical information service for people with conditions that could put them at risk in emergency situations.
4. Because the system is comprehensive:
   - It provides for the 37% of all Medic Alert members who have two or more conditions since the emblems are **individually engraved** and can record up to 3 conditions.
   - The Medic Alert **Emblem** (bracelet or necklace) is the TRIGGER that activates the emergency medical information system. Anywhere in the world, anytime of the day or night, medical personnel need only call Medic Alert's **24-hour hotline** and provide a patient's I.D. number engraved on the emblem. Within 30 seconds, information from **computerized emergency medical file** can be provided to assist in treatment. In addition, each member has a **wallet card** and the Foundation initiates an annual update procedure. Members, however, can update information at any time.

During the first year, **Stuart Pharmaceuticals Division,** ICI Americas, Inc. provided a generous grant of $75,000 to help launch this program. Due to the need for the Medic Alert service and the response of pharmacists across the United States, Stuart Pharmaceuticals will provide a **second year grant** to help expand this program.

Those who are in the emergency rooms appreciate this National Pharmacy effort.

A recent study conducted by George Podgorny, M.D., Past President, American College of Emergency Physicians, found there is a potential for over 13,200 emergency room visits every day in the United States that could benefit from the information Medic Alert provides. This led to the following specific statement by George Podgorny, M.D.: "We need readily available medical information for every patient brought into the Emergency Department, but often we must act in the absence of this data. Both the American Medical Association and the American College of Emergency Physicians emphasize the need for emergency medical identification. A ready source of personal emergency information can improve the care we provide, and Medic Alert is the best system currently available. It provides up-front identification on the patient with access to more

Continued on page 29

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Our 24 formulations of insulin—including Humulin and all forms of Iletin® (insulin)—are available through the widest retail distribution of insulin in the United States.

Beyond that, we will continue to provide a wide range of diabetes service and educational materials for use by physicians, pharmacists, and diabetes educators.

Our Medical Division is on call. Our Medical Division staff is only a phone call away. Please contact them if you have any questions about our diabetes care products.

Any change of insulin should be made cautiously and only under medical supervision. Changes in refinement, purity, strength, brand (manufacturer), type (regular, NPH, Lente®, etc), and/or method of manufacture (recombinant DNA versus animal-source insulin) may result in the need for a change in dosage.

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600439

MEDIC ALERT

Continued from page 27

comprehensive data available 24-hours a day worldwide."

From the other end of the United States, Paula Woo who is chairman of the Los Angeles Emergency Medical Services Commission and a trauma nurse coordinator, states, "If more patients had Medic Alert ID we would save precious time and treat them appropriately and with confidence. Otherwise, in the first critical moments of an emergency it's like a shot in the dark every time we provide emergency care."

Pharmacists can initiate this vital program for their patients today — Call Medic Alert at 1-800/ID ALERT or contact your Stuart representative and request your pharmacy starter kit which includes:

1. Front window poster (full color) to announce your pharmacy's involvement in this program.
2. Counter application holder with applications to be permanently placed for convenience of the patient near point of sale.
3. Medic Alert Reference Guides (2)
   — One to be posted in the work area to highlight conditions covered by Medic Alert protection
   — One to be placed at the point of sale for your staff and patients.
4. Stuffers to be inserted into all prescription bags for patients you believe could benefit from Medic Alert protection or to be used as a shelf talker.
5. Response card to be returned indicating participation in the pharmacist's program and ordering additional materials.

Cut Out or Reproduce and Mail

CONTINUING PHARMACEUTICAL EDUCATION

Soft Contact Lens Solutions

- Attach mailing label from The Carolina Journal of Pharmacy or print your name and address and mail to CE Test, NCPhA, P.O. Box 151, Chapel Hill NC 27514
- Completed answer sheets may be returned on a monthly or less frequent basis for grading.
- **This is a member service.** Non-members responses will not be graded nor CPE credit provided.
- NCPhA will maintain a copy of your completed CPE tests and upon successful completion of each program, will issue a certificate for one (1) hour of board-approved CPE.
- If more than two questions are answered incorrectly, the test is failed. You will be given one opportunity to submit a second answer sheet.

Please circle correct answers

1. a b c d	4. a b c d	7. a b c d
2. a b c d	5. a b c d	8. a b c d
3. a b c d	6. a b c d	9. a b c d
		10. a b c d

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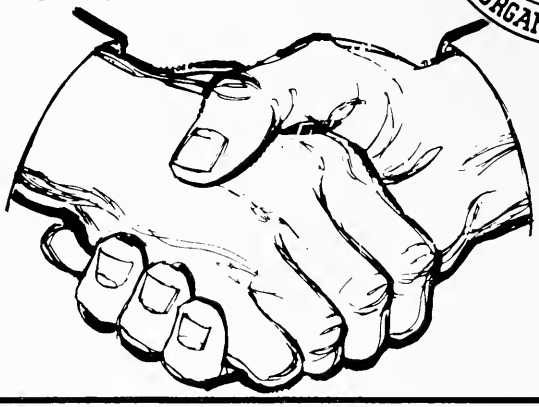

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HOW TO AVOID POISONING YOURS AND THE NEIGHBORS' CHILDREN

by J. Starks

With summer just around the corner, many families become weekend gardeners, sprucing up their lawns and gardens, and planting unusual shrubs and plants to liven up their yards, patios, decks, flower boxes and homes. What many families don't realize is that they may be introducing toxic plants that could be ingested by their own or neighbors' small children.

The ingestion of plants by children is a major cause of poisoning in the United States. Although death from these ingestions is rare, it can be painful and traumatic for the child.

Poisonous plants are generally grouped according to the toxic substances that they contain:

Amygdalin — containing plants produce cyanide poisoning. Examples: seeds of peach, pear, apple, apricot, bitter almond.

Anticholinergic — containing plants produce atropine-like anticholinergic effects. Examples: potato leaves and sprouts, Deadly Nightshade, Jimson Weed.

Cardiac Glycoside — containing plants produce digitalis-like effects on the heart. Examples: Lily of the Valley, Foxglove, Oleander.

Colchicine — containing plants produce severe gastrointestinal symptoms with CNS depression, seizures and bone marrow suppression. Examples: Autumn Crocus, Glory Lily.

Nicotine — containing plants produce acute nicotine poisoning. Examples: Tobacco, Arnica Root, Poison Hemlock, Fool's Parsley.

Oxalate — containing plants, the most commonly ingested group.

Soluble oxalate group produces hypocalcemia, gastroenteritis, and oxalate crystalluria. Examples: American Ivy, Rhubarb Leaves, Garden Sorrel, Virginia Creeper.

Insoluble oxalate group produces pain, swelling and erythema of mucous membranes. Examples: Dieffenbachia, Philodendron, Elephant's Ear, Caladium.

Solanine — containing plants produce severe gastroenteritis, bradycardia, fever, muscle weakness, and renal failure. Examples: Black Nightshade, Jessamine, Jerusalem Cherry.

Stimulant — containing plants produce CNS excitation with seizures. Example: Water Hemlock.

Toxalbumin — containing plants produce severe gastrointestinal burns, shock, hepatic necrosis and renal failure. Examples: Black Locust, Castor Bean, Jequirity Bean.

Gardens and yards may also contain other harmful plants listed below:

Acorns	Devil's Ivy	Philodendron
Arnica Root	Diefenbachia	Poison Hemlock
Asparagus Berries	(dumb cane)	Potato Leaves
and young shoots	Elephant's Ear	& Stems
Autumn Crocus	Fool's Parsley	Pothos Plant
Azalia	Foxglove	Privet Berries
Baneberries	Glory Lily	& Leaves
Begonias	Grape Ivy	Rhubarb Leaves
Black Locust	Holly	Rubber Vine (not
Black Nightshade	Horse Chestnuts	rubber plant)
Bleeding Heart	Iris	Shamrock
Bulbs — many	Ivy	Sorrel
Buttercup	Jerusalem Cherry	Sweet Pea
Caladium	Jessamine	Tobacco
Castor Beans	Jesquirity Bean	Tomato Leaves
Carrot Tops	Jimson Weed	& Stem
Christmas Cherry	Lily of the Valley	Virginia Creeper
Christmas Rose	Mistletoe Berries	Water Hemlock
Crown of Thorns	Mushrooms	Yew Bush
Daphine Berries	Oleander	

What can be done to prevent these poisonings? First, it is a good idea to identify all plants in your home or yard. Some plants are very familiar to you, but others may not be. If there is some question, take a clipping of the plant to a nursery or florist. They can usually identify plants. Ask them for the proper name of the plant.

In the home, label all pots or planters with the proper name of each plant. In the yard, make a list with the location indicated, or draw a map of vegetation in the yard. Place the proper name of all plants on the list or map.

Leave that list in a handy place, in case of emergency. Instruct any babysitter where the list

Continued on page 32

POISONING

Continued from page 31

or map can be found, along with the local poison control center number.

If you have poisonous plants in your home, consider giving them away or placing them in high locations where children don't have access to them. If you have poisonous plants in your yard, replace them with the non-toxic variety.

Because a few vegetables are listed on the toxic plant list, it is a good idea to fence in the garden with chicken wire to prevent children from having easy access if you choose to grow those vegetables.

What to do if a plant poisoning occurs? DON'T PANIC! If you suspect that your child has eaten any amount of a plant or mushroom that might be toxic, take the plant and the child, and give the child milk or water to drink.

CALL THE POISON CONTROL CENTER IMMEDIATELY! Don't wait until the child develops symptoms. Delays in treatment could be very dangerous. Poison control centers will help you determine if other intervention is necessary.

Non-Toxic Plants

African Violet	Creeping Charlie	Piggyback Plant
Air Fern	False Areola	Pine Cone Seeds
Aluminum Plant	Ficus Benjamina	Prayer Plant
Artichoke	Fuchsia	Purple Passion
Artillery Plants	Green Pepper Seeds	Pussywillow
Baby Tears	Hens and Chickens	Pyracantha
Bayberry	Honeysuckle Berries	Schefflera
Beauty Bush	Impatiens	Rose
Begonia, common	Jade Plant	Rubber Plant
Blood Leaf	Kinnikinnick Berries	Sedum
Boston Fern	Lilac	Spider Aralia
Bread Mold	Lipstick Plant	Spider Plant
Chinese Evergreen	Maternity Plant	String of Pearls
Christmas Cactus	Mountain Ash Berries	Wandering Jew
Coleus	Moss	Yucca Plant
Coral Bell	Peperomia	Zebra

In North Carolina, call your local poison control center or the Duke Poison Control Center at 800-672-1697.

NABP SEEKS EXECUTIVE DIRECTOR

The National Association of Boards of Pharmacy announces its search for an Executive Director. In its quest to fill this leadership position in American pharmacy, the Executive Committee has appointed a Search Committee.

The individual selected will serve as the chief executive officer of the Association and be responsible to the Executive Committee for the effective conduct of the affairs of the Association.

The Association is seeking an individual who is a pharmacist with managerial skills and relevant experience with association efforts. The individual should have good speaking and writing skills, good administration and planning talents and personal traits that lend to the favorable image of the Association.

The position also requires an individual with good working knowledge of the pharmaceutical industry and the profession of pharmacy.

The selection process is scheduled as:

September 1, 1987 — Application Deadline

November, 1987 — Search Committee makes recommedations to the Executive Committee

January 1, 1988 — Selected individual begins employment

Interested individuals should contact the Chairman of the Search Committee, Lester Hosto, Secretary/Treasurer of the Association. His address is P. O. Box 55356, Little Rock, AR 72225, telephone (501) 661-2833.

A packet of additional information about the position and application procedures will be mailed to persons interested in applying.

ANNUAL FALL REUNION

Pharmacy Alumni Association October 3, 1987 Beard Hall and Kenan Stadium

9:00 a.m. **Registration and Refreshments**

9:30 a.m. **"The Right To Know; The Right To Lie"**
Jack N. Behrman, Associate Dean, UNC School of Business

10:30 a.m. **Business Meeting**

11:15 a.m. **Lunch (Buffet line in Beard Hall lobby)**

12:30 a.m. **U.N.C. Tar Heels vs. AUBURN Tigers**
Kenan Stadium

The Fall Reunion C.E. Program will interest pharmacists and guests alike. The use of deception and misinformation in business, government, and professional services has been given substantial publicity lately. Dr. Behrman addresses this timely issue, tackling these questions: What is the role of information in our society? For what purposes does anyone have the right to deceive or lie or withhold information? And, if so, where do these rights come from? This C.E. session will consider these questions for such relationships as lawyers — clients, pharmacists — patients, and employers — employees.

Ken Brown, UNC Director of Ticket Operations, tells me that we are limited to 700 tickets this year. Auburn fans have already bought their full allotment. We will not be able to increase our order beyond the 700 limit, so it will be "first come — first serve" for our members and friends. Once again Baxley's will cater our luncheon buffet. With good food, good friends, and good football in Chapel Hill . . . how can you stay away? Please make plans to join us. Register early.

by Charles Pulliam
Executive Director

LOCKAMY ATTENDS LEADERSHIP CONFERENCE

Albert F. Lockamy, Jr., a practicing pharmacist with Revco Drug Stores and incoming 1988–1989 president of the North Carolina Pharmaceutical Association, was among pharmacy association leaders from 49 states, Puerto Rico and Canada who attended a Leadership Training Conference held recently in Kansas City.

The two-day conference, sponsored by Marion Laboratories, Inc., was designed to provide incoming presidents of state pharmacy associations with practical information and instruction in leadership and management techniques to help make their term of office for the coming year a personally satisfying and productive experience. The training was provided by Lawrence-Leiter and Company, an internationally acclaimed management consulting firm based in Kansas City.

Although pharmacy associations from 49 of the 50 states were represented, the presidents-elect of all 50 state associations throughout the United States accepted invitations to attend the Leadership Conference. Also in attendance were the presidents-elect of two Canadian provincial pharmacy associations, the newly elected president of the Candian Hospital Association, and the top officials of the Puerto Rico College of Pharmacy.

Gerald J. Mossinghoff, President
Pharmaceutical Manufacturers Association
1100 15th Street, NW
Washington DC 20005

Dear Mr. Mossinghoff:

The North Carolina Pharmaceutical Association, in convention assembled in Charlotte, North Carolina, April 22 through 25, 1987, passed the following resolution:

Whereas the Pharmaceutical Manufacturers Association finished products index has increased approximately 10% annually over the last five years, and

Whereas this does not compare favorably with other economic data such as the 1986 Consumer Price Index increase of 2%;

Now therefore be it resolved that

The North Carolina Pharmaceutical Association urge pharmaceutical manufacturers to use restraint in price increases, and

Be it further Resolved that

A copy of this Resolution be mailed to all Pharmaceutical Association members.

I hope you will distribute this resolution to all PMA members and it will have the desired effect. Community pharmacists are the members of the drug distribution system who received the most

Continued on page 36

CLASSIFIED ADVERTISING

Classified advertising (single issue insertion) 25 cents a word with a minimum charge of $5.00 per insertion. Payment to acompany order.

Names and addresses will be published unless a box number is requested.

In replying to "blind" ads, address Ad. No., Carolina Journal of Pharmacy, P.O. Box 151, Chapel Hill, NC 27514. Telephone (919) 967-2237.

PROFESSIONAL PHARMACIES: Several small prescription-oriented pharmacies are currently available for individual ownership in North Carolina. These opportunities provide the vehicle to practice pharmacy the way you were taught, while offering an attractive income and more time to be with your family. In some of these cases, financing is also available to qualified candidates. For more information write: Jan Patrick, 10121 Paget Dr., St. Louis MO 63132.

STAFF PHARMACIST WANTED: Position at Kings Mountain Hospital. Modern 102-bed facility with computerized unit dosage. Hospital experience preferred but not necessary. Will consider a May graduate. Contact Jerry McKee at (704) 739-3601 Ext. 472.

We are seeking an ambitious and professional career-minded individual for Pharmacy-manager position in southeastern North Carolina near the coast. Computerized prescriptions, excellent salary, hospitalization and life insurance, paid vacations. Small professional pharmacy located in the center of a medical complex. Contact Box CDD, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

RELIEF PHARMACIST AVAILABLE: Central & Eastern North Carolina. Contact Pharmacy Relief, PO Box 2064, Chapel Hill NC 27515 or call 919-481-1272 evenings.

CLINICAL-STAFF PHARMACIST POSITION: Will be working every 3rd weekend and will have responsibilities in unit dose, IV admixtures, cancer chemotherapy, patient education, nursing inservice, pharmacy newsletter, pharmokinetic dosing, drug use evaluation and other evolving clinical applications. Some advanced training and experience in clinical pharmacy preferred. If interested and qualified please send resume to: Director of Personnel, Community General Hospital, PO Box 789, Thomasville NC 27360. EOE.

MEDICINE SHOPPE FOR SALE: Don't miss this excellent opportunity to be your own boss in a professional atmosphere. The Medicine Shoppe, a prescription oriented pharmacy located in Raeford, NC has been offered for immediate sale. This fine opportunity offers clinic hours and a positive cash flow from Day 1. If you have been considering owning your own pharmacy, this could be an outstanding opportunity for you! Financing available. Contact John Aumiller, Medicine Shoppe Int'l., Inc. at 1-800/325-1397.

Pharmacist with retail experience to manage Rx Department, monitor patient profile and compound mixtures. Professional hours, atmosphere and salary. Call Gary Newton, Fayetteville 800-682-4664 Office hours or 919-484-6214, 24 hours.

PHARMACY FOR SALE: Western North Carolina. Well-established pharmacy in a small town. 27 years same location. $500,000 in sales. Price $170,000. Contact Bullock & Whaley, P.O. Box 3764, Wilmington, NC 28406. (919) 762-2868.

PHARMACIST: Professional Services/ Consultation — Temporary and/or Continual. Contact: L. W. Matthews at (919) 967-0333 or 929-1783. 1608 Smith Level Road, Chapel Hill, NC 27514.

PHARMACIST WANTED: Independent pharmacy in Concord seeks a full time pharmacist. Good salary, excellent benefits. Call Mickey Watts (704) 782-2194.

PHARMACIST WANTED: We are seeking an ambitious, and professional career-minded individual for a pharmacist position in Greensboro, High Point and Winston-Salem, NC. We offer excellent salary, stock ownership, educational subsidy, extensive benefits, retirement plan, 410K tax plan, annual salary merit reviews. "Pure pharmacy setting". If interested call Lew Thompson 1-800-233-7018 or send resume to: The Kroger Company, Attn: Personnel, PO Box 14002, Roanoke VA 24038. EOE.

SUPERVISOR OF PEDIATRIC SATELLITES: North Carolina Baptist Hospital Pharmacy is seeking a highly motivated and professional person to fill a pediatric supervisor's position. This position offers a close working relationship with a progressive pediatric staff and the opportunity to perform and excel in the role of a pediatric drug specialist. Responsibilities include: supervision of a pediatric pharmacy staff; participation in the clinical and distributive services provided by the satellite; and administrative details required for monitoring of clinical and distributive services provided by the staff. Qualified candidates should possess strong interpersonal and communication skills and should have a North Carolina Board license or be eligible for a North Carolina Board of Pharmacy license. Completion of a pediatric residency is a plus. Salary is competitive with excellent benefits. For more information, send resume or call collect: Letha Huffman, North Carolina Baptist Hospital, 300 S. Hawthorne Road, Winston-Salem, NC 27103. (919) 748-4717. EOE.

STAFF PHARMACIST WANTED: Immediate, full-time position available in our 150-bed acute care hospital. Successful candidate must have North Carolina license to practice as a Registered Pharmacist. We offer an excellent compensation package including competitive salary, paid life and health insurance, stock purchase plan and many other great benefits. Qualified professionals may contact Highsmith-Rainey Memorial Hospital, Personnel Department, 150 Robeson Street, Fayetteville, NC 28301. (919) 483-7400. An affiliate of HCA.

PHARMACISTS WANTED: Farmco Drug Centers have present positions available in Rocky Mount, Elizabeth City and Roanoke Rapids, North Carolina. For more information contact James Thompson at (919) 878-8158.

PHARMACIST WANTED: Leading independent in Asheville area, computerized with QS-1. 42 hour week, flexible schedule, competitive salary and benefits. Reply to Box BDE, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

PHARMACIST WANTED: Director of Pharmacy for 64-bed hospital in Southeastern North Carolina. Excellent hours, salary negotiable, and good fringe benefits. Contact Tom Smart at (919) 582-2026.

PHARMACIST WANTED: Pharmacy II position available at Piedmont Correction Center in Salisbury. Rowan County. One year experience. Salary grade; 75. Salary range; 26,892-43,728. Call Sylvia Matthews at (704) 634-1421 Ext. 501 or 507.

PHARMACY FOR SALE: Coastal NC. Sales greater than $400,000.00; 60% prescriptions. 10 miles from the ocean. Contact Bullock & Whaley (919) 762-2868; PO Box 3764, Wilmington NC 28406.

PHARMACIST WANTED: Opportunity for pharmacist interested in progressive independent practice. Opportunities for patient counseling, hypertensive screening, diabetes screening and home health care. Excellent salary and benefits. No nights or Sundays. Contact Box ZZZ, c/o North Carolina Pharmaceutical Association, P.O. Box 151, Chapel Hill, NC 27514.

WANT TO BUY: Old or antique pharmacy fixtures, shelving and possible soda fountain. Please contact Wheeler Carver, Jr. at P.O. Box 1121, Roxboro, NC 27573 or call (919) 599-4515.

Continued on page 36

CLASSIFIEDS

Continued from page 35

PHARMACIST WANTED: Opportunity for pharmacist for independent pharmacy store located in Central Piedmont, NC. Store open 5½ hours per day. No nights, Sundays or holidays. Paid vacations. Reply to Box ABC, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

WANTED UNIT DOSE PACKING MACHINE: Call Terminal Drug Store, S. Harmon, (919) 243-2102, Wilson, NC 27893.

WANTED FULL TIME PHARMACIST. Western part of the State. Two 10 hour days in two different locations. Three consecutive days off, no Sundays, no nights. Both in resort setting. Contact Jack Alexander, (704) 526-2366.

RELIEF PHARMACIST: weekend work in Raleigh area. Excellent working conditions, computerized pharmacy. Call (919) 772-4737 or write Tom Jones Drug, P.O. Box 271, Garner, NC 27529.

PHARMACIST WANTED: Call Norwood at 259-2676.

PHARMACY FOR SALE: Piedmont area pharmacy with annual sales of over $500,000. Annual increase each year. Owner will assist with financing if necessary. Contact Box RK, NCPhA, P.O. Box 151, Chapel Hill 27514.

MOSSINGHOFF

Continued from page 33

criticism from the public for price increases, and even though the public has experienced the above-mentioned increases in its prescription costs, they are not accepting the increases with good will toward PMA or their pharmacists.

Sincerely,
A.H. Mebane, III

BIRTHS

ELIZABETH RENEE CAULEY of Clayton married Donald Russel (Rusty) Rains of Goldsboro at the First Baptist Church of Clayton on June 6. Renee is a 1982 graduate of the University of North Carolina at Chapel Hill School of Pharmacy and is employed as a pharmacist for Kerr Drugs in Clayton. Rusty is a graduate of East Carolina University and is a District Executive for the Boys Scouts of America in Central Wake County. They make their home in Raleigh.

WEDDINGS

Connie P. Cousins (1985) and Dr. John F. Rink, Jr. were married August 8 at Wheat Swamp Christian Church in Kinston. Connie is a pharmacist for Kerr Drugs in Shallotte. The bridegroom is an 1983 University of North Carolina at Chapel Hill graduate and is a dentist in Shallotte.

DEATHS

Irvin J. Pruett

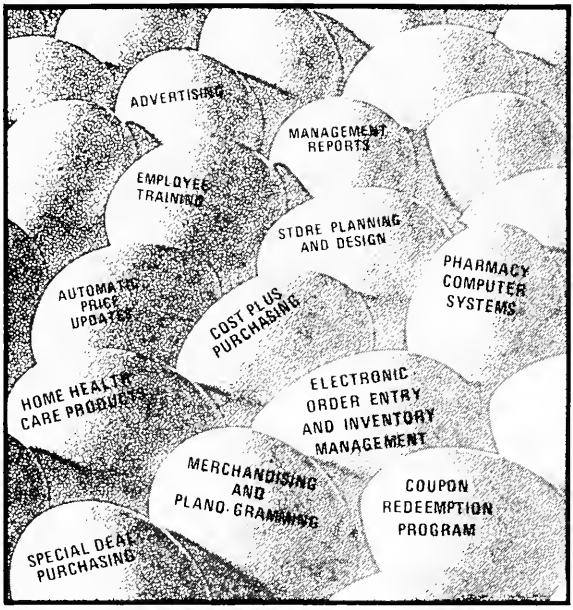
Irvin J. Pruett, Angier, died Sunday, May 3, 1987. He was 66 years old. Pruett was a 1955 graduate of Butler University and was owner of Pruett's Pharmacy in Angier from 1971 to 1983. He retired in 1983 and worked as a relief pharmacist in the area, mainly in Lillington.

Hoyt Carlynn Hedrick

Hoyt C. Hedrick, Monroe, died Friday, March 27, 1987, at the age of 77. Hedrick worked in Lexington and Salisbury before accepting employment with Secrest Pharmacy in Monroe where he worked for over 30 years.

George McLarty

George McLarty, High Point, died December 23, 1986, at the age of 87, from kidney failure. McLarty, a Georgia native, operated McLarty Drug Company in High Point for many years, the last few with his son George. McLarty was voted a Life Membership in the NCPhA in 1986 in recognition of his years of service to his profession in High Point.



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JOURNAL of PHARMACY

AUGUST 1987 VOLUME 67 NUMBER 8

M. Keith Fearing, Jr., immediate past president, NCPhA, left, presents the Mortar-and-Pestle Award to 1987 Pharmacist-of-the-Year John C. Hood, Jr.

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Back Row:
Ponola Bridges (Warehouse); Lynda Helms (Telephone Sales); Nancy Thackrah (Warehouse); Robert Weatherford (Purchasing); Tim Hamrick (Delivery)

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AUGUST 1987 VOLUME 67 NUMBER 8
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CONTENTS

Hood Honored as Pharmacist-of-the-Year 5
State Board of Pharmacy News 7
Newly Licensed Pharmacists 11
CDC Immunobiologic Agents 15
CE Course-OTC Vaginal Contraceptives 19
Dickinson's Pharmacy 29
Local News 31
Lilly Digest Preview-Independent Pharmacy 33
Births and Deaths 30
Classified Advertising 34

ADVERTISERS

Colorcraft 33
Dr. T. C. Smith Co./W.H. King Drug ..... Back Cover
Eli Lilly Company 12
Geer 16
Gene Minton Consulting Services 18
Jefferson-Pilot 2
Justice Drug Division 1
Kendall Drug Company ..... Inside Front Cover
Lawrence Pharmaceuticals 20
Marion Laboratories 28
Owens & Minor, Inc. ..... Inside Back Cover
Savage Laboratories 14
Smith Data Processing (QS/1) 26
Store Fixtures & Planning, Inc. 10
The Upjohn Company 8
Washington National Insurance Company 24

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John and Evalyn Hood, daughter Shields and son John, III.

Program participants, *left to right:* Keith Fearing, Roland Paylor, Rob Bizzell, John Hood, Dan Lilley, John Capps, Julian Upchurch and Rev. David Clift.

HOOD HONORED AS PHARMACIST-OF-THE-YEAR

John C. Hood, Jr. Kinston, was recognized Friday night, August 14, as 1987 North Carolina **Pharmacist of the Year** at the Mortar-and-Pestle Dinner held in Kinston. Neighbors, family, colleagues and friends from across the state participated in the dinner and program which followed, held at Vermillion's Buffet.

Julian E. Upchurch, NCPhA President, presided at the program which featured presentations by friends of Hood replete with anecdotes and stories of growing up in Kinston. The Reverend David S. Clift, Westminster United Mithodist Church, Hood's minister, told of the activities of Hood in church and specifically the gathering of "volunteers" for the early service choir. He commented that one of the terms that might be used about Hood in this respect was "fear". He also noted that Hood was committed to serving in the church, and was always there.

Dan T. Lilley, NC House of Representatives from the Third Destrict, brought official greetings to the out of town guests, commenting about the hospitality and warmth of the people of Kinston and Lenoir County.

Mrs. Peggy Boone, on behalf of the Mayor of Kinston, Mr. O.A. Rich, read a proclamation recognizing the achievements of John Hood. Another special message was delivered by Gordon Vermillion, President of the Lenoir County Chamber of Commerce.

The Master of Ceremonies for the evening was John T. Capps, III, founder of the Bald Headed Men of America Club and nephew of the recipient. He has appeared on many radio and television talk shows and kept the evening on a light and merry path.

Mr. Roland L. Paylor, Jr., Executive Director of the Kinston Housing Authority, told of growing up across the street form the Hoods. John had five sisters and the two families were on the same telephone party line and the two families were quite close. Paylor said he felt part of the Hood family. Mrs. Hood was quite an artist and brought art to Kinston in those days, said Paylor. John Hood, Sr. was also civic minded and the Housing Authority is named for him. John and Evalyn Hood are still active in art and the room was decorated with some original paintings of the Hoods'. Hood and Paylor went off to college together and have remained the best of friends.

Rob Bizzell, a fellow Kinston pharmacist and 2nd Vice President of the North Carolina Pharmaceutical Association told of the professional experiences he had with recipient.

A surprise gift for John Hood, a pair of his father's cuff-links, was given by his sister Betsy Proctor.

Continued on page 6

HOOD

Continued from page 5

Hood was now a competitor and a valued colleague and they worked together to provide quality pharmacy services. Hood was particularly good with patients, said Bizzell, and counseled them well. He noted that the first prescription he dispensed from his pharmacy was filled with a drug borrowed from Hood's store, a practice that continues, according to Hood. Bizzell said he tried to emulate Hood in his prifessional life and daily activities.

J. Marshall Tetterton, President of Peoples Bank, Rocky Mount, told of Hood's high integrity and his love of tennis. He related how Hood won his frist tennis trophy at the age of 16 (disputed later by the recipient). Tetterton stated that John Hood was being honored for the good he has brought out in others, besides his own accomplishments and contributions. Hood has character, courage, intellectual integrity and reason and is a fierce tennis competitor said Tetterton.

A special citation from Rotary International was presented by E. A. Alexander, 773 District Governor, for Hood's work on Polio Plus. Hood is a past District Governor of Rotary and recipient of the coveted Paul Harris Fellow. He is also a past president of the Kinston Rotary Club.

Hood's sister, Betsy Proctor, of Atlantic Beach, gave him a special gift, a set of his father's cuff links he had given up ever having, and she told him that "Mother and Daddy are smiling down on you tonight." John was almost speechless, but he did remind the audience that Betsy was the first "Miss Kinston."

The North Carolina Pharmaceutical Association "Mortar-and-Pestle" Award, emblematic of Pharmacist-of-the-Year, was presented by NCPhA Immediate Past President, M. Keith Fearing, Jr., who gave special recognition to Evalyn Hood. Fearing commented that the NCPhA had just gotten its Devisal of Arms and Kinston was the first US city to get a Devisal of Arms.

Past recipients of the Mortar-and-Pestle Award: *left to right, back row:* Bill Randall, Jack Watts, Jimmy Creech and B.R. Ward. *Front row:* Tom Burgiss, Harold Day, Jean Provo, 1987 recipient John Hood, June West, John Henley, J.C. Jackson and Ralph Rogers.

Hood accepted the award and paid tribute to his wife who made everything possible and been a part of all he had been involved in. John said "If wealth can be measured by friends, then I am a wealthy man. I don't take myself seriously, but I do take my responsibilities seriously." He thanked all the program participants, his employees and friends for coming out on this evening and introduced his family, with special notice of what may be North Carolina's first fifth generation pharmaicst. Most of all, he thanked his parents for teaching him to work with other people.

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Continued on page 9

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The interns tour the corporate museum at the Upjohn Visitor's Center. From left to right:
Allison L. Vordenbaumen, University of Texas at Austin
Mark B. Brieckmann, University of Illinois at Chicago
Heidi M. Bloom, Wayne State University
Judith A. Shingle, University of Kansas

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Continued from page 7

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Harnett Co. Health Dept.
715 N. Main St.
Lillington, NC
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Harnett Co. Health Dept.
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Dunn, NC
#4800, Issued 6/15/87 (LSP)

Nash Co. Health Dept.
1616 West Thomas St.
Rocky Mt., NC
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Regional Migrant Ctr.
Stricklands Crossroads
Nashville, NC
#4802, Issued 6/15/87 (LSP)

Nash Co. Health Dept.
214 South Barnes St.
Nashville, NC
#4803, Issued 6/15/87 (LSP)

Moore Co. Health Dept.
Carthage Clinic
Carthage, NC
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Moore Co. Health Dept.
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Pinehurst, NC
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300 W. Tryon St.
Hillsborough, NC
#4806, Issued 6/15/87 (LSP)

Orange Co. Health Dept.
Carr Mill Mall, Suite 225, 100 N. Greensboro St.
Carrboro, NC
#4807, Issued 6/15/87 (LSP)

Rockingham Co. Health Dept.
Hwy. 65
Wentworth, NC
#4808, Issued 6/15/87 (LSP)

Surry Co. Health Dept.
Hamby Rd.
Dobson, NC
#4809, Issued 6/15/87 (LSP)

Continued on page 10

PERMITS ISSUED

Continued from page 9

Phcy. of Columbus Co. Public Health Dept.
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Whiteville, NC
#4810, Issued 6/15/87 (LSP)

Wake Co. Health Dept.
401 East Whitaker Mill Rd.
Raleigh, NC
#4811, Issued 6/15/87 (LSP)

Wake Co. Health Dept.
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Raleigh, NC
#4812, Issued 6/15/87 (LSP)

Wilkes Co. Health Dept.
West College St.
Wilkesboro, NC
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Queens College Health Ctr.
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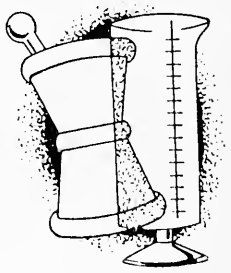
#4814, Issued 6/16/87 (LSP)

Island Phcy., Inc.
Virginia Dare Hwy.
Manteo, NC
#4815, Issued 6/29/87 (T/O)

Valu-Mart Discount Phcy.
127 S. Main St.
Mt. Holly, NC
#4816, Issued 6/29/87 (T/O)



LICENSED BY EXAMINATION — July 22, 1987

Adams, Janet Karen, Marshall
Absher, Pamela Lynn, Charlotte
Barre, William John, Concord
Bird, Ann Abbitt, Oak Ridge
Brooks, Lois Jane, Wilkesboro
Bryant, Joy Laverne, Raleigh
Burnett, John Colbert, Boone
Burrell, James David, Charlotte
Calloway, Andrea Leigh, Pineville
Carr, April Denise, Shelby
Carrington, Shelly Dee, Chapel Hill
Clavin, John Grattan, Charlotte
Clay, Derrik Richard, Charlotte
Clow, Kay Nell, Smithfield
Clyde, Jeanne Cauvel, Winston-Salem
Collins, Robert Vernon, Fayetteville
Collins, Vance Edwin, Jr., Roanoke Rapids
Creech, Cynthia Ione, Selma
Crew, Dorothy Jean, Charlotte
Denny, Sheryl Lynn, Jacksonville
Diamond, Robin Anne, Sunrise, FL
Dixon, William Barnett, Charlotte
East, Lisa Marie, Charlotte
Ellsworth, Patricia Anne, Raleigh
Emery, Juliann, Charlotte
Englebert, Frankie Elizabeth, Troutman
Ezzelle, Jeffrey Howard, Wilmington
Ferguson, Michael Todd, Garner
Ferrell, Stanley Eugene, Raleigh
Fields, Suzanne McDonald, Chapel Hill
Frailly, Dawn Marie, Statesville
Gardner, Stephanie Ferrell, Chapel Hill
Gray, Susan Diane, Charlotte
Greene, Christopher Bancroft, Virginia Beach, VA
Haan, Phillip Wayne, Jacksonville
Hall, Don Belois, Washington
Hanson, Scott James, Stony Point
Haverlock, Deanne Fay, Winston-Salem
Helton, Beverly Diane, Charlotte
Hill, Carol Ann, Cary
Hite, Janalea Sue, Red Springs
Hogue, Susan Lynn, Clyde
Holder, Patricia Jeanette, Wilmington
Hopper, Myra Lisa, Rutherfordton
Houser, Merri Melanie, Cherryville
Hudson, Kimberly Dawn, Belmont
Hussey, Marcia Lynnette, Robbins
Jessup, Laura Anne, Chapel Hill
Johnson, Barbara Harper, Cary
Johnson, Samuel Henry, Jr., Goldsboro
Jones, Allison Anne, Buies Creek
Jones, Thomas Lanier, Cary
Journey, Teresa May, Durham
Karres, Nickolaos Gus, Charlotte
Kheirkhah, Peiman, Pineville
Kirkegaard, Gary John, Omaha, NE
Knight, Mary Eloise, Pinehurst
Koonce, Sterling Grady, Chapel Hill
Kothapalli, Suguna, Siler City
Ledoux, Barbara Anne, Winston-Salem
Lewis, Patricia Lula, Garner
Lindsay, Myra Hawkins, Carrboro
Lineberger, Randy Dale, McAdenville
Lyerly, Cynthia Gaye, Salisbury
Lynch, Maurice Oliver, Enfield
Marshall, Daniel Burrell, New Bern
Martin, Thomas Alan, Shelby
Meares, James Hubert, Jr., Fair Bluff
Monds, Robert Howard, Whiteville
Moore, Ellen Bowman, Kernersville
Moorman, Mary Katherine, Charlotte
Moose, William Whitaker, Concord
Morgan, Ginger Lynn, High Point
Morrison, Ann Byrd, Fayetteville
Narron, Bradley Franklin, Southport
Nobles, James Harold, Winterville
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Overton, Lydia Elizabeth, Troy
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Pfeffer, Jill, Charlotte
Pike, Cynthia Deann, Winston-Salem
Plyler, Wesley Scott, Salisbury
Preston, Susan Marie, Wilmington
Pullium, Michelle Lynne, Knightdale
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Ratcliff, Leighann Mechel, Monroe
Rayfield, Krista Dawn, Bessemer City
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Rota, Sharon, Asheville
Sawyer, Cynthia Faye, Moyock
Schoppert, Susan Tracy, Charlotte
Shah, Rajesh Sureshchandra, Rockingham
Shehan, Sheila Elaine, Forest City
Shields, Mary Anna, New Bern
Sigmon, Marsha Anne, Denton
Sillmon, Sandra Diane, Durham
Sims, Karen Patricia, Durham
Skoe, Anne Helene, Park Rapids, MN
Skoe, Steven James, Park Rapids, MN
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Continued on page 13

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NEW PHARMACISTS

Continued from page 11

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Terrell, Deneen Alicia, Raleigh
Tester, Stephen Duane, Vilas
Torda, Stephen Joseph, III, Winter Park, FL
Towne, Cassandra Mary, Chapel Hill
Turlington, Caro Lynn, Benson
Ujhelyi, Michael Robert, Deerfield
Vanhooke, Janeen LaVay, Hillsborough
Ward, David Brooks, Shallotte
Watson, John Williams, Tabor City
Watson, Marti Elizabeth, Little Rock, AR
West, Amy Carol, Fuquay-Varina
West, Kimberly Margaret, Greensboro
White, John Richard, Fayetteville
Wiedenmayer, Karin Anne, Chapel Hill
Williams, Christine Guy, Chapel Hill
Williams, Susan Renee, Franklin
Willyard, Darrell Lee, Garner
Woolard, Lisa Dale, Wilmington
Wynn, Kimberly Anne, Raleigh
Yiottis, Tessie, Charlotte
Younkins, Glenn David, Oxford

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NATIONAL OBSERVANCES

Listed below is a list of national observances related to health promotion. These observances offer a natural opportunity to schedule programs related to specific health areas.

September	National Sickle Cell Month
September	National Emergency Care Month
September	National Sight Saving Month
September 13	National Grandparents Day
September 13–19	National Rehabilitation Week
September 20–26	National Farm Safety Week
September 20–26	National Adult Day Care Center Week
October	Family Health Month
October	National Spinal Health Month
October	National Lupus Awareness Month
October	National Diabetes Research Month
October	National Family Sexuality Education Month
October	Talk About Prescriptions Month
October 1	World Vegetarian Day
October 4–10	National Running and Fitness Week
October 4–10	National Employ the Handicapped Week
October 4–10	National Fire Prevention Week
October 5	Child Health Day
October 15	White Cane Safety Day
October 16	World Food Day
October 18–24	National Infection Control Week
October 25–31	National Safety on the Streets Week
November	National Alzheimer's Disease Awareness Month
November	National Diabetes Month
November	National Epilepsy Month
November 6	World Community Day
November 15–21	American Education Week
November 19	Great American Smokeout
November 23–28	National Family Caregivers Week
December 10	Human Rights Day
December 13–19	National Drunk and Drugged Driver Awareness Week

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FOR YOUR INFORMATION: CDC IMMUNOBIOLOGIC AGENTS

by James R. Talley, M.S.
School of Pharmacy
Northeast Louisiana University
Monroe, Louisiana

Various immunobiologic agents are available to physicians from the US Centers for Disease Control (CDC) and Immunobiologics Service. The agents supplied to physicians are furnished free of cost to patients. The physician must provide information about the infection, specific laboratory data, and limited patient data (name, age, sex, and weight) and agree to register as a Clinical Investigator by completing FDA Form FD-1573.

Several of these agents are considered "Emergency Life Saving" products and are stored and dispensed from CDC Atlanta or from one of nine Quarantine Stations located at airports in Boston, Chicago, Honolulu, Los Angeles, Miami, New York, San Francisco, Seattle, and Washington DC.

For product information or the product may be obtained by contacting:

Centers for Disease Control
Drug & Immunobiologics Service
1600 Clifton Rd, Bldg 1, Rm 1259
Atlanta, GA 30333

Business Hours Monday–Friday
8:00 a.m. to 4:30 p.m. (EST)
(404) 329-3670

Nights, Weekends, or Holidays
(Emergency Requests Only)
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Vaccines

Botulinum Toxoid Pentavalent Vaccine (against types A, B, C, D, and E, strains of *Clostridium botulinum*)
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Japanese Encephalitis (JE) Vaccine
Venezuelan Equine Encephalitis (VEE) Vaccine
Western Equine Encephalitis (WEE) Vaccine
Smallpox Vaccine
Tularemia Vaccine

Immune Globulins

Vaccinia Immune Globulin (VIG)
Western Equine Encephalitis (WEE) Immune Globulin

Immune Plasmas

African Hemorrhagic Fever (Ebola Disease) Immune Plasma
Eastern Equine Encephalitis (EEE) Immune Plasma
Herpes Simian B (Monkey B) Immune Plasma
Lassa Fever Immune Plasma
Marburg (Green Monkey Disease) Immune Plasma
St. Louis Encephalitis (SLE) Immune Plasma
Venezuelan Equine Encephalitis (VEE) Immune Plasma

IMMUNIZATION SCHEDULES

As pharmacists, we are frequently asked questions about immunizations and childhood diseases. The following information is provided as a starting reference source. More specific and detailed information may be obtained from your local Public Health Office.

Immunization Schedule for Normal Infants and Children

AGE	IMMUNIZATION
2 months	DTP, TOPV
4 months	DTP, TOPV
6 months	DTP, TOPV (1)
15 months	DTP (2), TOPV (1), MMR (3)
4–6 years	DTP (4), TOPV (4)
14–16 years of age and every ten years thereafter	TD (5)

1 Third dose of TOPV is recommended where polio is epidemic, otherwise this dose is optional
2 Give DTP and/or TOPV only after a minimum of 6 months have elapsed since

Continued on page 17

IMMUNIZATION

Continued from page 15

3rd dose. The MMR, however, should not be delayed.

3 Give MMR anytime child comes to clinic after 13 months of age. Give 2nd injection to any child vaccinated before 12 months of age.

4 Give after 4th birthday but before or at the time of entering school. If child has reached sixth birthday, give Td instead of DTP.

5 Booster dose may be given earlier (i.e., 10–13 years of age) in situations such as organized school programs.

Immunization Schedule for Children Not Immunized in Infancy

15 months (6) through 5 years and over

	Under 6 years	6 years & over
First Visit	DTP, TOPV, MMR (6)	Td, TOPV, MMR
2 months later	DTP, TOPV	Td, TOPV
2 months later	DTP, TOPV (1)	.....
6–12 months later	DTP (6), TOPV (7)	Td, TOPV
14–16 yrs. of age	Td	Td
Thereafter, repeat Td every 10 years for both schedules		

6 MMR is not routinely given before 13 months of age.

7 If child completes these immunizations prior to 4 years of age a supplemental dose of each is recommended after 4 years of age prior to school entry.

DTP = Diptheria and Tetanus toxoids combined with Pertussis Vaccine
TOPV = Trivalent Oral Polio Vaccine
Td = Tetanus and Diphtheria Toxoids, Adult type
MMR = Measles, Mumps, Rubella combined

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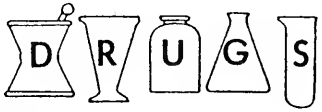
The United State Pharmacopeial Convention, Inc. (USPC), is the organization which sets the official standards of strength, quality, purity, packaging, and labeling for drugs and other articles used in medical practice in the United States. It is the publisher of the United States Pharmacopeia (USP) and the National Formulary (NF) which are recognized as official compendia by Federal and State Food, Drug and Cosmetic Acts, and the standards contained therein are legally enforceable by the U.S. Food and Drug Administration. Standards are developed by elected volunteer experts in academia, industry and government.

The USPC is an independent, nonprofit organization composed of representatives from accredited colleges of medicine and pharmacy in the U.S., state medical and pharmaceutical associates; many national associations concerned with medicines, such as the American Medical Association, the American Nurses Association, the American Dental Association, and the American Pharmaceutical Association; and various departments of the federal government, including the Food and Drug Administration. It was established over 160 years ago, and is the only national body that represents the professions of both pharmacy and medicine.

In addition to setting the official drug standards for the United States, USPC maintains a comprehensive data base of drug-use information for patients and physicians, pharmacists and other health care professionals: USP DI. USP DI is a mandatory reference for pharmacies in many states. It is the data base used for the patient education leaflet programs of the American Medical Association, the National Association of Retail Druggists, the American Academy of Family Physicians, several state pharmacy associations and clinics. It is the most widely used patient education data base in America today.

The USPC also operates the Drug Product and Medical Device. Problem Reporting Systems for health professionals to use in identifying and correcting problems associated with health-care products. Reports received at USP are forwarded to the Food and Drug Administration and industry officials for corrective action.

For further information, contact Alice E. Kimball, Director of Professional Affairs, The United States Pharmacopeial Convention, Inc., 12601 Twinbrook Parkway, Rockville, MD 20852, (301/881-0666).



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CONTINUING PHARMACEUTICAL EDUCATION

Vaginal Contraceptives

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- **This is a member service.** Non-members responses will not be graded nor CPE credit provided.
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Please circle correct answers

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2. a b c d	5. a b c d	8. a b c d
3. a b c d	6 a b c d	9. a b c d
		10. a b c d

Evaluation: Excellent Good Fair Poor

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CORRESPONDENCE COURSE

ADVISING CONSUMERS ON OTC VAGINAL CONTRACEPTIVES

by Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University, Ada, OH
and
J. Richard Wuest, Pharm.D., R.Ph.
Professor of Clinical Pharmacy
University of Cincinnati, Cincinnati, OH

Goals

The goals of this lesson are to:

1. explain the mechanism of action and utility of commonly used spermicidal agents;
2. present the conclusions of an FDA advisory panel on OTC spermicidal products.
3. describe the reported relationship between the Today contraceptive sponge and carcinogenesis, and toxic shock syndrome;
4. discuss consumer advice about spermicidal products.

Objectives

At the completion of this lesson, the successful participant will be able to:

1. categorize each of the ingredients in OTC spermicidal products as to their safety and efficacy;
2. list the various types of vaginal contraceptive products and list their advantages and disadvantages;
3. compare OTC spermicidal contraceptives for efficacy with other methods of birth control;
4. summarize directions for correctly using the contraceptive sponge.

The human race is reported to be increasing by the rate of nearly 150 persons per minute, or 77 million persons per year. If this rate continues, by the year 2040 the world population will be 8 billion people, almost double the current 4.6 billion figure.

Regardless of whether an American woman is concerned about the total world population or her own family size, she desires control over her body and when she chooses to be pregnant. Therefore, OTC vaginal contraceptives are an integral component of family health care. Their availability to any person at any time is extremely important.

Consumers may choose from a variety of OTC or physician-prescribed contraceptives (Table 1). Each has advantages and disadvantages. Spermicidal agents applied within the vagina are the topic of this month's lesson.

History

The introduction of substances into the vagina is the oldest recorded means of contraception, first reported in the 19th century B.C. Early Egyptians mixed honey natron (sodium carbonate) and crocodile dung to form a vaginal contraceptive paste. Oil of cedar and frankincense mixed in olive oil were in vogue in the 4th century B.C. Peppermint oil in honey, cedar gum, alum, and pieces of sea sponge were reportedly inserted into the vagina in the first and second centuries A.D. for contraceptive purposes.

Continued on page 21

CORRESPONDENCE COURSE

Continued from page 19

In the 18th century, Casanova recommended squeezing a lemon and inserting it over the cervical opening. This cup-shaped lemon rind provided a physical barrier to sperm movement into the cervix. The citric acid also conferred spermicidal action.

The first commercial vaginal product was a suppository containing quinine sulfate in cocoa butter. This was manufactured in London in 1855. By the turn of the century, it was available in many countries. This was followed in the 1920's and 1930's with suppositories and foaming tablets containing ingredients such as mercury, quinine, lactic acid, boric acid, or burnt alum. With the discovery that several surfactants were effective spermicides, their use was popularized in the 1950's.

The use of vaginal contraceptives declined during the 1960's and early 1970's when oral contraceptive steroids made their debut. Later, intrauterine devices (IUD's) became popular. For awhile it seemed that this national trend away from OTC creams and jellies, and toward effective but potentially dangerous devices requiring physician supervision would continue.

Now, however, there is growing concern over the safety or oral contraceptives and IUD's, which are contraindicated for many women. Women are looking for alternate, safe means for birth control. Therefore, a resurgence of interest in OTC vaginal contraceptives has occurred. Except for sterilization, many people believe that OTC spermicides are the safest and most effective contraceptives.

Vaginal Contraceptives

OTC contraceptives (spermicides) are agents intended to be placed within the vagina. They consist of jellies, creams, foams, suppositories, foaming tablets, and sponges impregnated with spermicides.

These items provide contraceptive action in two ways. First, they physically prevent sperm movement through the cervical opening into the uterus and fallopian tubes. Secondly, they provide direct spermicidal or sperm-immobilizing activity before sperm can move into the upper genital tract.

An ideal spermicide meets the criteria outlined in Table 2. Currently available OTC products come close to meeting these requirements.

The FDA Advisory Panel on OTC Contraceptives and Other Vaginal Drug Products has reviewed all available data on spermicidal products. The results of this review and a categorization of spermicidal ingredients are summarized in Table 3.

Surfactants

Surfactants (a contraction of the term "surface active agent") have been used as contraceptives since the 1950's. Unlike many of the earlier compounds, surfactants were effective and they did not irritate the vaginal lining or penile membrane. Many surfactant substances, including cationic, anionic, and nonionic chemicals, have been tested over the years. The nonionic substances have surfaced as the most effective contraceptives.

Nonionic surfactants (i.e., those which do not dissociate into positively or negatively charged ions) act directly on the lipid membrane of sperm. Their surface tension lowering capacity enhances their activity. This alters the sperm's membrane permeability characteristics and causes osmotic imbalance. In turn, the sperm's ability to absorb fructose, required for their metabolism, is reduced. This leads to a loss of motility and death of the sperm.

The two ingredients in current use in this country, **nonoxynol 9** and **octoxynol 9** are alkylphenyl polyoxyethylene nonionic surfactants. Octoxynol has a slightly different chemical structure than nonoxynol. However, both ingredients are equally safe and effective.

Menfegol, an agent used in foaming tablets elsewhere in the world, has been categorized as safe and effective by the OTC advisory panel. However, it has not been marketed in the U.S. at the time of publication of this lesson.

Effectiveness

Various studies have shown that between 1 and 30 percent of spermicidal users will become pregnant during a year of use. However, this should not be construed as an index of ineffectiveness of the products. The major reason for failure is improper use of the contraceptive rather than the particular spermicide product.

Many factors influence a product's effectiveness. These include proper placement, time required for melting to release the drug, and the duration of effectiveness. But the most important factor is compliance, i.e., the user following the directions correctly.

Continued on page 22

CORRESPONDENCE COURSE

Continued from page 21

It is reported that foams are best. They are followed by foaming suppositories, creams, and jellies, in that order. Suppositories are convenient and easy to use, but may take 10 to 15 minutes to melt. One study showed that Encare suppositories were still intact 15 minutes after insertion in 9 of 20 women.

Safety

Surfactants have a long history of safe use. They have no known effects on the human embryo and no long-term adverse effects on the woman.

Recently, the potential for causing adverse effects to the user and the fetus have been questioned. It is known that these agents can be absorbed into the blood.

Several mechanisms for possible spermicide-induced congenital damage have been proposed. Some investigators believe that spermicides could injure sperm resulting in defective fertilization. This doesn't seem likely since the drugs work by destroying sperm cell membranes and rendering a sperm incapable of reacting with an ovum. Other researchers feel spermicides could damage the ovum before conception. If the spermicide were used after conception and it was absorbed, the embryo could be damaged on transfer from the mother through the placenta.

TABLE 1
Comparative Effectiveness of Various Contraceptive Methods*

Method	Pregnancies Per 100 Woman - Years
Oral contraceptives	< 1 - 3
Intrauterine devices	< 1 - 6
Diaphragm with cream or gel	2 - 20
Vaginal sponge	2 - 20
Aerosol foams	2 - 29
Condoms	3 - 36
Spermicidal cream or gel	4 - 36
Rhythm - calendar method	< 1 - 47
Rhythm - temperature method	1 - 20

*Modified from Kastrup, EK et. al. (Eds.): *Facts and Comparisons,* St. Louis, MO, F&C Division of JB Lippincott Co., 1984.

TABLE 2
Properties of an Ideal Spermicide

- Act rapidly and effectively; either kill *all* sperm on contact, or render them incapable of fertilization
- Systemically nontoxic, and nonirritating to the vaginal wall and penile membrane; be free of adverse long-term toxicity
- No effect on development of embryo or fetus, or development of nursing infant
- Inexpensive and readily available
- Aesthetic and easy to use
- Suitable for multiple uses per application

TABLE 3
OTC Spermicidal Ingredients

Ingredient	Category
Dodecaethyleneglycol monolaurate	III*
Laureth l0s	III*
Menfegol	I
Methoxypolyoxyethyleneglycol 550 laurate and nonoxynol 9	III*
Nonoxynol 9	I
Octoxynol 9	I
Phenylmercuric acetate and phenylmercuric nitrate	II**
Other ingredients containing mercury	II**

*Safe; effectiveness remains unestablished
**Unsafe for OTC use

In one report based on 763 live-born infants of mothers who had used a vaginal spermicide within 10 months of conception, the rate of congenital birth defects was 2.2 percent compared to 1.0 percent in a group of 3,900 women who did not use a spermicide product. Furthermore, it was reported that spontaneous abortion occurred nearly twice as often in pregnant women who had used vaginal spermicides compared to women who did not.

While there was a positive correlation reported, many still believe that the data were inconclusive. They state that the women reported to have used the spermicide were *presumed* to have used it during a period prior to conception. They further argue that the study was retrospective in design and time of exposure to the substance, and that proper use of the spermicide could not be accurately assessed.

Other more recent studies have shown that spermicide use is not associated with a higher birth defect rate or spontaneous abortion risk. The current rate of all serious birth defects

diagnosed at the time of birth in the U.S. is 2 to 3 percent. To date, there have been few well-controlled clinical studies to prove or disprove a direct relationship. At this point in time, there does not appear to be a definite correlation between spermicidal use and biochemical/physiological changes in humans.

Category II (Unsafe) Ingredients

Phenylmercuric acetate was the only mercury-containing ingredient submitted to the OTC advisory panel for review. Phenylmercuric acetate *per se* is associated with a low incidence of systemic toxicity following absorption from the vaginal mucosa. Nevertheless, the panel cited information on mercury salts in general.

It is well known that mercury salts are absorbed vaginally and distributed systemically. This could be injurious to both the mother and developing fetus. It also enters the milk.

Both the human fetus and neonate are especially vulnerable to mercury toxicity. The damage is primarily associated with neurological and renal toxicity. In cases of contraceptive failure involving the use of mercury-containing vaginal contraceptives, overt symptoms of toxicity have not been noted to date in infants. There have been no specific systemic studies to assess potential long-term neurotoxicity or intellectual deficiency.

However, the panel determined that all mercury-containing ingredients could be expected to induce similar toxic reactions. Thus, it placed all mercury-based vaginal contraceptives in Category II (i.e., banned from future sale).

Contraceptive Sponge

Even though sponges have been used as contraceptives for centuries, the Today contraceptives sponge is the first one approved by FDA. It is a disposable, hydrophilic polyurethane mushroom-shaped device that contains one gram of nonoxynol 9. The device reportedly works in the following three ways.

1. It releases spermicide.
2. It blocks the cervical opening to penetration by sperm.
3. It absorbs seminal fluid.

The sponge possesses several distinct advantages over other OTC vaginal contraceptives. But it must be inserted properly to be effective. Most users experience no difficulty. However, because of its softness and shape, a few users report that it is more difficult to insert, remove, or check for proper fit than a diaphragm. If the removal strap is turned the wrong way, for example, it is quite difficult to remove.

Effectiveness

The product is still too new to establish long-term effectiveness data. Studies to date report a 10 to 27 percent pregnancy rate for users of the sponge compared with 8 to 12 percent failure with the diaphragm.

The sponge can be inserted up to 24 hours prior to intercourse. It provides continuous protection for a number of acts of intercourse. It is not necessary to leave the sponge in place for a 24-hour period, but it must not be removed before 6 hours after the last intercourse.

Adverse Effects

A few users have reported localized irritation, itching and rash with the use of the contraceptive sponge. However, less than 2 percent discontinue use because of these reactions. Occasionally the sponge will absorb vaginal lubricating fluids making intercourse painful. Rarely, it may be dislodged from the vagina.

Leaving the sponge in place longer than necessary can cause offensive odors from vaginal discharge or seminal fluid. Also, extended contact of the sponge with vaginal membranes may be a major factor in the development of toxic shock syndrome which has recently been associated with the product.

Toxic shock syndrome (TSS) is the result of a bacterial infection from *Staphylococcus aureus.* This microbe is one of many normally present in the vagina which constitutes part of its normal microflora. When the vaginal epithelium is irritated (as a result from numerous stimuli), the microbial balance may shift allowing increased colonization of pathogens.

When foreign objects (e.g., contraceptive sponges, tampons) are inserted into the vagina, there is an increasing chance for irritation to the vaginal epithelium. If *S. aureus* colonizes there, TSS may develop. Symptoms result from a toxin that is secreted by the colonizing bacteria and absorbed across the vaginal wall into the blood.

The development of TSS is minimized if the sponge is used correctly. In most of the women who have reportedly developed TSS after using the sponge, it has been shown that they did not follow directions properly. For example, one used the sponge too soon after childbirth. Others

Continued on page 25

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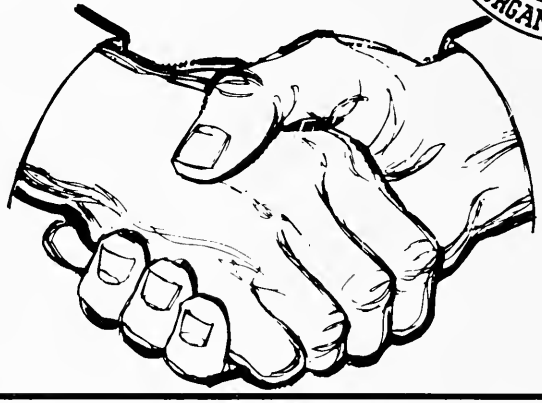

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CORRESPONDENCE COURSE

Continued from page 23

left the device in place longer than the recommended time (up to 5 days). One person inserted the sponge improperly, and while attempting to withdraw it, tore it into pieces. These pieces probably remained past the recommended period and irritated the vaginal mucosa.

The sponge itself does not cause TSS, nor does it predispose women to greater risk than would be expected from a tampon placed in the vagina. However, any woman who develops symptoms of TSS while using the sponge should contact a physician immediately. The symptoms include:

1. rapidly developing high fever (usually 102°F or more);
2. vomiting or diarrhea;
3. sudden drop in blood pressure (noted by dizziness);
4. generalized rash.

Odors may occur any time a foreign material is placed in the vagina and interacts with or collects vaginal fluids or semen. However, an odor that is stronger than normal or has a distinctly different smell may indicate the presence of infection.

Two or possibly three carcinogens are reported to be present in the sponge in trace concentrations. These are normal by-products associated with manufacturing techniques of both nonoxynol 9 and the sponge material. However, the concentrations of each of these are well below toxic levels. Furthermore, nonoxynol 9 has been used for decades without reports of cancer occurring.

One gram of nonoxynol 9 appears to be safe. Tests have shown that only about 200 mg of spermicide is released during a 24-hour period of use. Most spermicidal cream or gel products contain between 75 and 140 mg. per application.

Patient Advice

Since vaginal contraceptives are available without prescription, they are often used without medical guidance. The effectiveness of the product is directly related to the accuracy with which it is used. Compliance is the most important factor in successful product use.

Spermicides reportedly have certain advantages over other contraceptive products. They are safe and cause no serious local reactions or proven systemic effects. They are simple to use and ideal for persons who have intercourse infrequently.

On the other hand, they must be inserted at least 5 to 15 minutes, but no longer than one hour, before intercourse. Some individuals feel this removes the spontaneity from intercourse. The optimum time for insertion depends on the particular product and dosage form. Except for the sponge, a new application is necessary for each intercourse.

Applicators for foam products must be inserted deep into the vagina before releasing the product. Deposited too shallow, the product may drain out. Or, it may be too far away from where sperm will be deposited to be effective. Some foam products use a 5 ml applicator while others use a 10 ml applicator. This should not confuse the user. The smaller device requires two applications of product per use.

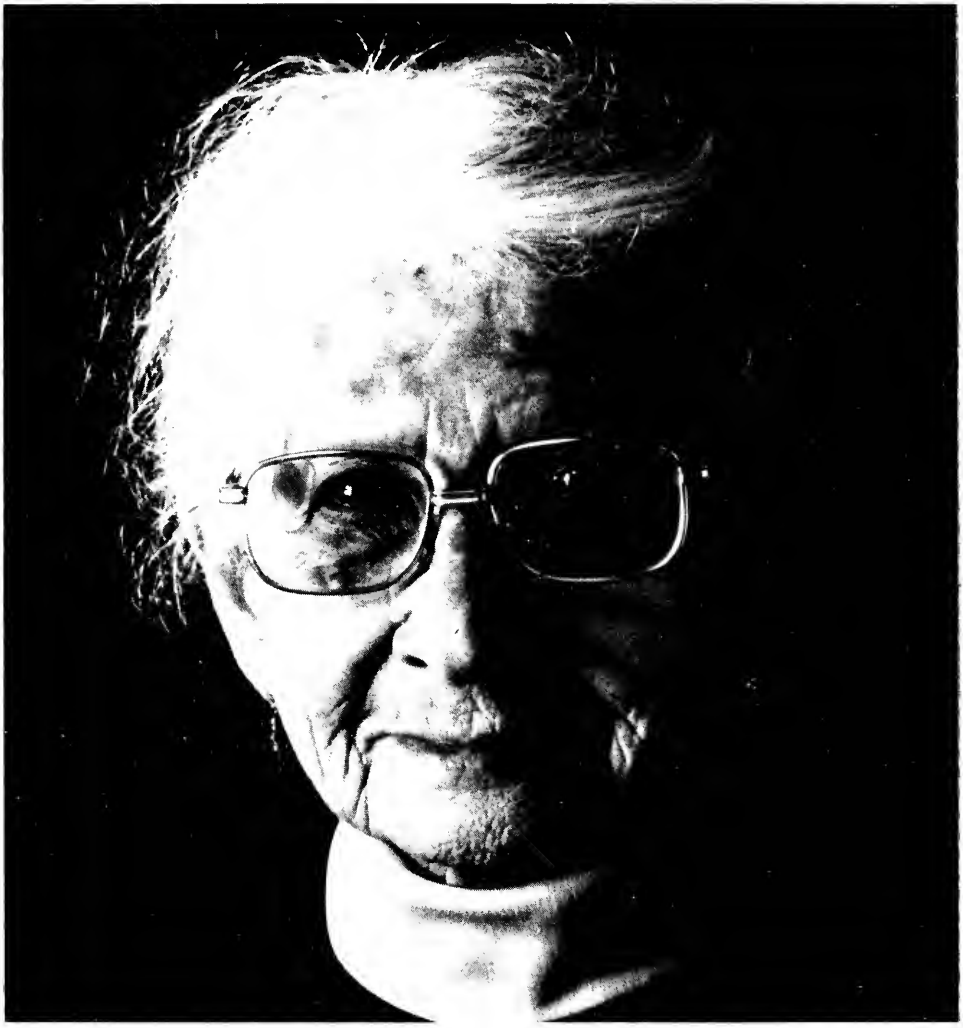
Because products are formulated into different bases, each may cause various degrees of irritation or burning. If one product irritates, another one having either different or the same spermicidal ingredient may be selected. Table 4 lists representative OTC products.

TABLE 4
Representative OTC Contraceptives That Meet The FDA Advisory Panel's Criteria of Safety and Effectiveness

Product	Form	Nonoxynol	Octoxynol
Because	Foam	X	
Conceptol Birth Control	Cream	X	
Conceptol Disposable	Jelly	X	
Delfen	Foam	X	
Emko	Foam	X	
Encare	Suppository	X	
Gynol II	Jelly	X	
Intercept Inserts	Suppository	X	
Koromex	Cream		X
Koromex	Foam	X	
Koromex	Jelly		X
Koromex II-A	Jelly	X	
Ortho-Gynol	Jelly		X
Ramses	Jelly	X	
Ramses Extra	Condom	X	
Semicid	Suppository	X	
Shur-Seal Gel	Jelly	X	
Today	Sponge	X	

Some recent reports have suggested that nonoxynol 9 and octoxynol 9 are effective antibacterials and antivirals. Preliminary studies have confirmed that the agents can kill the

Continued on page 27



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organisms that cause gonorrhea, genital herpes, and trichomoniasis. Consumers who ask about this potential activity should be told that the reports are as yet unproven. And, they should be reminded that if the chance for exposure to one of these causative organisms is great, then the spermicidal agents alone should not be relied upon for protection.

There is no evidence to prove that douching is an effective contraceptive. If a spermicide is being used, douching should be delayed for at least 6 hours after coitus because this could flush out the active spermicidal ingredient.

What's Ahead?

Researchers are actively searching for longer-acting forms of spermicidal products. One substance in clinical trial is gossypol. This has long been used in China as an oral contraceptive for men. It appears to have intravaginal spermicidal action as well.

Another substance currently under investigation in animal trials works by immobilizing sperm. It is reported to be 25 to 50 times more potent than nonoxynol 9.

One quite interesting study recently highlighted a possible spermicidal action of propranolol, a beta-adrenergic blocker. In this South American trial, nearly 200 women inserted propranol vaginal tablets each evening, regardless of when coitus occurred. The failure rate for the medication was recorded as 3.9 per 100 woman-years. The study also reported that intravaginally applied propranolol was effective for up to 10 hours. The mechanism of possible contraceptive action remains unknown.

Research will no doubt continue to develop newer contraceptives that are perhaps more effective than those currently available. Meanwhile, OTC spermicidal products can be recommended with confidence. If they are used correctly, they are both safe and effective.

CORRESPONDENCE COURSE QUIZ

Vaginal Contraceptives

1. The most effective OTC vaginal contraceptives are the:
   a. amphoteric surfactants.
   b. anionic surfactants.
   c. cationic surfactants.
   d. nonionic surfactants.
2. The OTC vaginal contraceptive dosage form that is reported to be most effective is the:
   a. cream.
   b. foam.
   c. jelly.
   d. suppository.
3. Surfactant spermicides act in all the following ways EXCEPT:
   a. altering membrane permeability.
   b. causing osmotic imbalance.
   c. increasing surface tension.
   d. reducing sperm motility.
4. Which of the following ingredients is contained in the greatest number of OTC vaginal contraceptives?
   a. Nonoxynol 9
   b. Octoxynol 9
5. Which of the following products can be relied on to be effective even if it is used 12 hours prior to intercourse?
   a. Conceptol
   b. Delfen
   c. Emko
   d. Today
6. The use of surfactants as effective spermicidal agents was popularized in which of the following decades?
   a. 1910's
   b. 1930's
   c. 1950's
   d. 1970's
7. The agent that was classified as safe and effective for use as a vaginal contraceptive in a foaming tablet dosage form is:
   a. menfegol.
   b. laureth 10S.
   c. phenylmercuric nitrate.
   d. sodium bicarbonate.
8. Toxic shock syndrome is the result of an infection caused by:
   a. *Herpes simplex.*
   b. *Neisseria gonorrhea.*
   c. *Pseudomonas aeruginosa.*
   d. *Staphylococcus aureus.*
9. Surfactant OTC vaginal contraceptives act by reducing the ability of sperm to absorb:
   a. glucose.
   b. fructose.
   c. mannitol.
   d. sorbitol.
10. All of the following are vaginal suppository dosage forms EXCEPT:
    a. Because.
    b. Encare.
    c. Intercept.
    d. Semicid.

Answer sheet on p 18

DICKINSON'S PHARMACY

by Jim Dickinson

Verbal or oral? The very practice of pharmacy as we have come to know it could depend on the legal answer to that question. Another way of putting it might be: Is there any legally recognizable value in pharmacist-patient dialog at the time of dispensing?

If you think "verbal" and "oral" communication are synonymous terms, you agree with most people and with the Ohio State Board of Pharmacy before the country's largest mail-order company had the state make it change its mind.

You will be surprised to learn that some lawyers, and most dictionaries, think "verbal" can mean "written" — which, in the case of pharmacist-advice laws, is a loophole big enough to sail a supertanker full of under-regulated mail-order prescriptions through.

And, since huge mail-order prescription factories have fewer regulatory restrictions than yours does, that's an advantage to be reckoned with.

In a case being watched by every state pharmacy board in the country, Ohio pharmacists have put the issue squarely on the line. Their state association is suing their state board, four state retirement programs and Medco/National Rxs over the state's reluctance to enforce Ohio laws — including one mandating "verbal" communication with patients — against Medco, which has two large facilities in the economically-depressed state.

The case, to be tried this fall, has been whittled down in pre-trial legal maneuvering to a single federal-state constitutional issue, referencing the filling of out-of-state prescriptions. How the "verbal-means-oral" issue got started from it is a strange tale.

It seems that after the case was well under way, the board agreed to adopt the requested "verbal-means-oral" definition and to start enforcing it last year. But that never happened. After the issue had been formally dropped from the lawsuit, Medco gained the ear of the state attorney-general's office, causing the board to flip-flop.

The relevant Ohio law that's not being enforced says "the pharmacist shall verbally notify the recipient that a generic substitution has been made." Another section requires the pharmacist to inform the recipient about the price difference and to offer an opportunity to decline the generic.

Medco has big plans to expand its base in friendly Ohio (state motto: "The Heart of It All"). To do so, it needs state laws unfriendly to its interests to yield on the theory that they might violate the U.S. Constitution's interstate commerce clause (even though that actually *defers* to state health-and-safety statutes).

By its cooperative and polite manner with state boards everywhere it operates, Medco seems to have impressed everyone with its superior operation ("Medco is fantastic!" Florida board exec Rod Presnell told me July 7). But, as detailed in a previous column, Medco is said by its employees to have an unacceptably high rate of prescription mixups because of high-speed dispensing, and to pay pharmacists salaries that are far higher than they can obtain elsewhere — thus going a long way toward assuring their silence on said mixups.

In the spirit of its generous help to state boards (which always seem strapped for resources), Medco/National early this year researched 13 different dictionaries and found that the most-preferred definition of "verbal" in each allowed for "spoken or written."

My *American Heritage Dictionary* 1979 edition, though, gives its first meaning of "verbal" as, "Of, pertaining to, or associated with words," its second as, "Concerned with words rather than the facts or ideas they represent," and its third as, "Expressed or transmitted in speech; unwritten." It adds as a footnote on usage, however: "*Verbal* (adjective) is less precise than *oral* in expressing the sense of 'by word of mouth.' *Verbal* can also refer to what is written; *oral* cannot."

With the concurring help of Ohio assistant attorney-general Yvette McGee (who told me she thinks mail-order prescriptions are proconsumer because they save elderly folk from having to "trudge" to their local pharmacy), Medco and its research persuaded the board to change its mind.

Consisting only of non-lawyers, the board learned from a personal briefing by McGee and from a legalistic 11-page Medco letter that "verbal" can indeed mean "written," and that the spirit of state law — if not the actual letter of it — means that before you take away somebody's property rights (e.g., Medco's income and all those Medco jobs and taxes in Ohio), you board members must publish notice-and-comment and go through open public rulemaking procedures.

Continued on page 30

DICKINSON'S PHARMACY

Continued from page 29

Which is a lot of trouble, and not in the best interests of the State of Ohio — as distinct from the interests of patients who live outside Ohio. Whether the healthy, young, career-path lawyers and judges, having shrunk those interests down to a point of constitutional law will realize it or not at the trial in September, the case inevitably challenges the worth of pharmacy's counseling role.

Is there any important value in *oral* advice at the time of dispensing? If not, why even call it "verbal"? Advice is advice, in any form, as is a notification.

As for the underlying case itself, does the vastness of a Medco justify fewer rules than smaller pharmacies have to follow? And what is pharmacy, anyway? Simple commodity-shipping to avoid "trudging"?

If this is important to you, the Ohio State Pharmaceutical Association is running out of legal funds; mail checks to its P.L.A.N. Trust, 250 East Broad Street, Suite 1250, Columbus, OH 43215.

BIRTHS

Congratulations to Mike and LONI GARCIA, Lumberton, on the birth of Emily Camille, July 7, 1987, at Southeastern General Hospital. Emily weighed 7 pounds, 15 ounces and Loni, NCPhA Third Vice President, and Mike are doing well.

DEATHS

Fenton H. Harris

Fenton H. Harris, Jacksonville, died June 26, 1986, at the age of 58. Harris worked at Harfen Corporation in Jacksonville until his retirement. A native of Pennsylvania, Harris was a 1956 graduate of Howard University School of Pharmacy.

William Lacy Harper, Sr.

William L. Harper, Hendersonville, died Monday, August 17, 1987, at his home. He was 86 years old. Harper was born in Montgomery County and was a graduate of the UNC School of Pharmacy. He operated Rose Pharmacy in Hendersonville for 34 years. His daughter, Becky Elliot is a pharmacist in Ft. Meyers, Florida, and one son, John is also a graduate of the UNC School of Pharmacy and School of Medicine.

1987 Officers of the Woman's Auxiliary, NCPhA.
Left to right: **Dollie Corwin, Corresponding Secretary; Jean Morse, Advisor; Frances Jones, Recording Secretary; Peggy Jackson, Parliamentarian; Betsy Mebane, Coordinator; Eloise Watts, Treasurer; Rose Boyd, First Vice President; Mary Lou Davis, President; Gladys Jones, Second Vice President; Jewell Oxendine, Advisor.** ***Not pictured:*** **Rebecca Work, Historian.**

LOCAL NEWS

WINSTON-SALEM PHARMACIST RECEIVES NORTH CAROLINA PHARMACY AWARD

Lori C. Tutterow

Lori C. Tutterow has been named the Distinguished Young Pharmacist of the Year in North Carolina. The award was conferred on the 27-year-old Winston-Salem pharmacist at the recent annual meeting of the North Carolina Pharmaceutical Association.

Tutterow is a pharmacist at Revco-Oldtown in Winston-Salem. She earned her bachelor's degree in pharmacy at the University of North Carolina-Chapel Hill.

The award, sponsored by Marion Laboratories, Inc., a Kansas City, Mo., pharmaceutical company, is presented annually to a young pharmacist in each state for individual excellence and outstanding contributions in state pharmacy association activities, community affairs and in professional practice.

MOORE RECEIVES AWARD

In recent ceremonies, CDR Steven R. Moore, U.S.P.H.S., was awarded the Public Health Service Outstanding Service Medal. The third highest medal awarded by the Commissioned Corps of the Public Health Service, the citation read, "For outstanding leadership in carrying out the mission of the PHS and accomplishments in furthering the Surgeon General's Initiative — PHS/Administration on Aging Initiative — Health Promotion and Disease Prevention Among the Elderly"

Moore is affiliated with the Food and Drug Administration, but currently detailed in the National Institute on Aging at NIH.

OWENS & MINOR, INC. ANNOUNCES ACQUISITION

Owens & Minor, Inc. announces it has signed a letter of intent to acquire the stock of Bellamy Drug Company of Wilmington, North Carolina and King Drug Company of Florence, South Carolina. The transaction is expected to be completed by July 31, 1987. The combined sales of Bellamy Drug and King Drug were approximately $22.5 million for their fiscal year ended April 30, 1987.

Owens & Minor, Inc. currently operates wholesale drug distribution centers in Richmond and Norfolk, Virginia; Wilson, North Carolina; and Miami and Orlando, Florida. The Company also operates 17 medical/surgical distribution centers in the mid-Atlantic, southeast, south central, and southwestern part of the United States.

According to G. Gilmer Minor, III, President and CEO, "this is a positive strategic move because it strengthens our market share in eastern North Carolina and gives us a pharmaceutical presence in South Carolina. This transaction is also in line with our strategy of expanding our drug distribution capabilities in the Sun Belt. Present management is excellent and will stay in place."

The bi-monthly meeting of the Randolph County Pharmaceutical Society was held Sunday evening, August 23, 1987 at Randolph Hospital in Asheboro. Vice-President Charles F. Owen was instated as new President since the current President, Neill Wilson would be leaving Randolph County. Jack Duggins of Asheboro was then elected Vice-President. Guests included Dr. Larry Simpson and DR. Wiliam Hendricks. A short business session was held, then an open forum discussion was conducted with both physicians and pharmacists expressing views over topics important to Health Care.

Kim Farrington
Sec./Treas.

Lilly Digest Preliminary Report — 1987

Averages per Pharmacy	1986 (Preliminary Sample) (997 Pharmacies)	Percent of Sales	1986 (Full Sample) (1,378 Pharmacies)	Percent of Sales	Amount and Percent of Change
Sales					
Prescription	$418,601	63.3%	$369,595	62.2%	+$49,006—13.3%
Other	243,009	36.7%	224,323	37.8%	+$18,686— 8.3%
Total	$661,610	100.0%	$593,918	100.0%	+$67,692—11.4%
Cost of goods sold	449,278	67.9%	400,255	67.4%	+$49,023—12.2%
Gross margin	$212,332	32.1%	$193,663	32.6%	+$18,669— 9.6%
Expenses					
Proprietor's salary	$ 38,505	5.8%	$ 35,196	5.9%	+$ 3,309— 9.4%
Employees' wages	67,356	10.2%	60,316	10.2%	+$ 7,040—11.7%
Rent	15,439	2.3%	14,166	2.4%	+$ 1,273— 9.0%
Miscellaneous operating costs	72,832	11.0%	67,422	11.3%	+$ 5,401— 8.0%
Total expenses	$194,123	29.3%	$177,100	29.8%	+$17,023— 9.6%
Net profit (before taxes)	$ 18,209	2.8%	$ 16,563	2.8%	+$ 1,646— 9.9%
Total income (includes proprietor's salary)	$ 56,714	8.6%	$ 51,759	8.7%	+$ 4,955— 9.6%
Inventory at cost					
Prescription	$ 43,415	10.4%	$ 38,939	10.5%	+$ 4,476—11.5%
Other	50,648	20.8%	49,375	22.0%	+$ 1,273— 2.6%
Total	$ 94,063	14.2%	$ 88,314	14.9%	+$ 5,749— 6.5%
Annual rate of turnover of inventory	4.8 times		4.6 times		
Prescriptions dispensed					
New	14,730	50.1%	14,086	49.7%	+ 644— 4.6%
Renewed	14,697	49.9%	14,261	50.3%	+ 436— 3.1%
Total	29,427	100.0%	28,347	100.0%	+ 1,080— 3.8%
Average prescription charge	$14.23		$13.04		+$ 1.19— 9.1%
Floor area and	2,886 sq.ft.		2,673 sq.ft.		+ 214— 8.0%
sales per square foot*	$229.25		$219.98		+$ 9.27— 4.2%
Pharmacy hours open	61		62		

*Based on averages of pharmacies that reported all data.

A PREVIEW OF INDEPENDENT COMMUNITY PHARMACY — 1987

This preliminary *Lilly Digest* report is based on the 1986 operating statistics of 997 independent community pharmacies. Although the cost of goods sold increased, it was offset by a reduced total expense figure, which resulted in net profit remaining unchanged from the previous year at 2.8% of sales. Comparison of *Lilly Digest* figures for 1985 with 1986 income and expense figures shows that . . .

> Sales totaled over $661,000, an 11% gain of almost $68,000 over 1985's figure. This rate of increase is somewhat higher than the average annual growth of 10.5% observed during the past decade. Prescription sales increased over 13% from 1985 figure and significantly outpaced the 8% increase noted in other sales. Prescription sales accounted for 63.3% of the average pharmacy's volume.
>
> Gross margin declined to 32.1% of sales (down from 32.6% in 1985), the lowest gross margin level since 1942. Total expenses decreased to 29.3% of sales — down from 29.8% the previous year. Net profit before taxes was 2.8% of sales, unchanged from the prior year.

Although total expenses fell percentagewise, there was an increase in dollars of over $17,000, or 9.6% higher than the 1985 figure. Proprietor's salary was higher in dollars (up about $3,300) but decreased slightly to 5.8% of sales. Similarly, employees' wages rose dollarwise but remained unchanged at 10.2% of total volume. The percentage figures for employees' wages for 1986 as well as 1985 were the lowest since 1954.

Rent declined slightly to 2.3% of sales, but was almost $1,300, or 9% higher for the year. Miscellaneous operating costs rose just over $5,400, an 8% increase. However, during 1986 these miscellaneous costs comprised a smaller share (11%) of the sales dollar. This was the result of a percentagewise decline, in advertising, delivery, and interest expenses, which more than offset the increase in insurance and miscellaneous expenses.

Net profit before taxes showed an increase of over $1,600 — up almost 10% from 1985. In dollars, total income (proprietor's salary plus net profit before taxes) increased 9.6% but declined slightly as a percent of sales from 8.7 to 8.6%.

Prescription and nonprescription inventories required more dollars during 1986; however, both declined as a percent of sales — from 10.5 to 10.4% and from 22.0 to 20.8% respectively. The sales productivity of the prescription inventory moved up to $9.64 per stock dollar (15 cents higher than in 1985), whereas the productivity of other merchandise rose to $4.80, up 26 cents from the previous year.

The average number of new prescriptions increased by 644 to 50.1% of total prescriptions dispensed (up 4.6% from 1985). Renewed prescriptions were higher by 436 (up 3.1%) over the previous year's figure and accounted for 49.9% of total prescriptions dispensed. A record high of 29,427 prescriptions were dispensed during 1986 (up almost 4%). The average prescription charge was $14.23 during 1986, an increase of $1.19, over the 1985 figure of $13.04.

Merchandise selling space in the average independent community pharmacy was over 2,800 square feet during 1986. Sales per square foot of floor area advanced $9.27 from the year earlier to $229.25. The hours of operation in the typical *Lilly Digest* pharmacy declined slightly during 1986 to 61 hours per week.

The annual *Lilly Digest* will be completed and distributed during September of this year.

* * *

CLASSIFIED ADVERTISING

Classified advertising (single issue insertion) 25 cents a word with a minimum charge of $5.00 per insertion. Payment to acompany order.

Names and addresses will be published unless a box number is requested.

In replying to "blind" ads, address Ad. No., Carolina Journal of Pharmacy, P.O. Box 151, Chapel Hill, NC 27514. Telephone (919) 967-2237.

PROFESSIONAL PHARMACIES: Several small prescription-oriented pharmacies are currently available for individual ownership in North Carolina. These opportunities provide the vehicle to practice pharmacy the way you were taught, while offering an attractive income and more time to be with your family. In some of these cases, financing is also available to qualified candidates. For more information write: Jan Patrick, 10121 Paget Dr., St. Louis MO 63132.

PHARMACY FOR SALE: Coastal NC. Sales greater than $400,000.00; 60% prescriptions. 10 miles from the ocean. Contact Bullock & Whaley (919) 762-2868; PO Box 3764, Wilmington NC 28406.

CLINICAL-STAFF PHARMACIST POSITION: Will be working every 3rd weekend and will have responsibilities in unit dose, IV admixtures, cancer chemotherapy, patient education, nursing inservice, pharmacy newsletter, pharmokinetic dosing, drug use evaluation and other evolving clinical applications. Some advanced training and experience in clinical pharmacy preferred. If interested and qualified please send resume to: Director of Personnel, Community General Hospital, PO Box 789, Thomasville NC 27360. EOE.

Pharmacist looking for both retail and hospital relief work in Fayetteville, Lumberton and Piedmont area. Has 18 years of experience. If you are in need of such a person please contact Box DAK, c/o NCPhA, PO Box 151, Chapel Hill NC 27514.

PHARMACISTS WANTED: Farmco Drug Centers have present positions available in Rocky Mount, Elizabeth City and Roanoke Rapids, North Carolina. For more information contact James Thompson at (919) 878-8158.

PHARMACIST WANTED: Opportunity for pharmacist interested in progressive independent practice. Opportunities for patient counseling, hypertensive screening, diabetes screening and home health care. Excellent salary and benefits. No nights or Sundays. Contact Box ZZZ, c/o North Carolina Pharmaceutical Association, PO Box 151, Chapel Hill NC 27514.

Pharmacist with retail experience to manage Rx Department, monitor patient profile and compound mixtures. Professional hours, atmosphere and salary. Call Gary Newton, Fayetteville 800-682-4664 Office hours or 919-484-6214, 24 hours.

PHARMACIST WANTED: Leading independent in Asheville area, computerized with QS-1. 42 hour week, flexible schedule, competitive salary and benefits. Reply to Box BDE, c/o NCPhA, PO Box 151, Chapel Hill NC 27514.

PHARMACIST WANTED: Director of Pharmacy for 64-bed hospital in Southeastern North Carolina. Excellent hours, salary negotiable, and good fringe benefits. Contact Tom Smart at (919) 582-2026.

Owners want to retire. Old established store 30 miles from Raleigh in a small town with one doctor. $250,000 in sales, with an inventory of $50,000. Sales price of $65,000, includes fixtures and equipment. 85% Rx business. Reply to Box POK, c/o NCPhA, PO Box 151, Chapel Hill NC 27514.

PHARMACIST WANTED: Independent pharmacy in Concord seeks a full time pharmacist. Good salary, excellent benefits. Call Mickey Watts (704) 782-2194.

PHARMACY FOR SALE: Western North Carolina. Well-established pharmacy in a small town. 27 years same location. $500,000 in sales. Price $170,000. Contact Bullock & Whaley, PO Box 3764, Wilmington NC 28406. (919) 762-2868.

PHARMACISTS WANTED: Greensboro and Greensboro market area. Contact David Cox, Revco Drug Stores, at (919) 766-6252.

STAFF PHARMACIST WANTED: Staff position with long term care nursing home at Pharm-Save located in Hookerton (near Greenville). Contact Dan Hardy at 1-800-682-0062.

WANTED UNIT DOSE PACKING MACHINE: Call Terminal Drug Store, S. Harmon, (919) 243-2102, Wilson NC 27893.

WANT TO BUY: Old or antique pharmacy fixtures, shelving and possible soda fountain. Please contact Wheeler Carver, Jr. at PO Box 1121, Roxboro NC 27573 or call (919) 599-4515.

PHARMACIST WANTED: Call Norwood at 259-2676.

SUPERVISOR OF PEDIATRIC SATELLITES: North Carolina Baptist Hospital Pharmacy is seeking a highly motivated and professional person to fill a pediatric supervisor's position. This position offers a close working relationship with a progressive pediatric staff and the opportunity to perform and excel in the role of a pediatric drug specialist. Responsibilities include: supervision of a pediatric pharmacy staff; participation in the clinical and distributive services provided by the satellite; and administrative details required for monitoring of clinical and distributive services provided by the staff. Qualified candidates should possess strong interpersonal and communication skills and should have a North Carolina Board license or be eligible for a North Carolina Board of Pharmacy license. Completion of a pediatric residency is a plus. Salary is competitive with excellent benefits. For more information, send resume or call collect: Letha Huffman, North Carolina Baptist Hospital, 300 S. Hawthorne Road, Winston-Salem NC 27103. (919) 748-4717. EOE.

We are seeking an ambitious and professional career-minded individual for Pharmacy-manager position in southeastern North Carolina near the coast. Computerized prescriptions, excellent salary, hospitalization and life insurance, paid vacations. Small professional pharmacy located in the center of a medical complex. Contact Box CDD, c/o NCPhA, PO Box 151, Chapel Hill NC 27514.

CLINICAL-STAFF PHARMACIST POSITION: located on the beautiful N.C. coast in Morehead City. Some advanced training and experience in clinical pharmacy preferred. Will have responsibilities in unit dose, IV-Ad mixtures, chemotherapy, patient education, nursing inservice, pharmacy newsletter, pharmakinetic dosing, drug evaluation and other evolving clinical applications. If interested and qualified please send resume to Director of Personnel, Carteret General Hospital, PO Drawer 1619, Morehead City NC 28557 or call Beth Beswick (919) 247-1547. EOE.

STAFF PHARMACIST WANTED: Immediate, full-time position available in our 150-bed acute care hospital. Successful candidate must have North Carolina license to practice as a Registered Pharmacist. We offer an excellent compensation package including competitive salary, paid life and health insurance, stock purchase plan and many other great benefits. Qualified professionals may contact Highsmith-Rainey Memorial Hospital, Personnel Department, 150 Robeson Street, Fayetteville NC 28301. (919) 483-7400. An affiliate of HCA.

Continued on page 36

CLASSIFIEDS

Continued from page 35

PHARMACIST WANTED: We are seeking an ambitious, and professional career-minded individual for a pharmacist position in Greensboro, High Point and Winston-Salem NC. We offer excellent salary, stock ownership, educational subsidy, extensive benefits, retirement plan, 401K tax plan, annual salary merit reviews. "Pure pharmacy setting". If interested call Lew Thompson 1-800-233-7018 or send resume to: The Kroger Company, Attn: Personnel, PO Box 14002, Roanoke VA 24038. EOE.

PHARMACIST: Professional Services/ Consultation — Temporary and/or Continual. Contact: L. W. Matthews at (919) 967-0333 or 929-1783. 1608 Smith Level Road, Chapel Hill NC 27514.

STAFF PHARMACIST WANTED: Position at Kings Mountain Hospital. Modern 102-bed facility with computerized unit dosage. Hospital experience preferred but not necessary. Will consider a May graduate. Contact Jerry McKee at (704) 739-3601 Ext. 472.

PHARMACIST WANTED: Opportunity for pharmacist for independent pharmacy store located in Central Piedmont, NC. Store open 5½ day week. No nights, Sundays or holidays. Paid vacations. Reply to Box ABC, c/o NCPhA, PO Box 151, Chapel Hill NC 27514.

COLUMBUS STORE FIXTURES FOR SALE. Complete Prescription Department, 40 foot wall shelving, and 30 foot greeting card fixtures. Contact Bud O'Neal, Work: 919-943-2462, Home: 919-943-3751.

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August 10, 1987

Mr. A. H. Mebane, III
Executive Director
North Carolina Pharmaceutical Association
P.O. Box 151
Chapel Hill, North Carolina 27514

Dear Mr. Mebane:

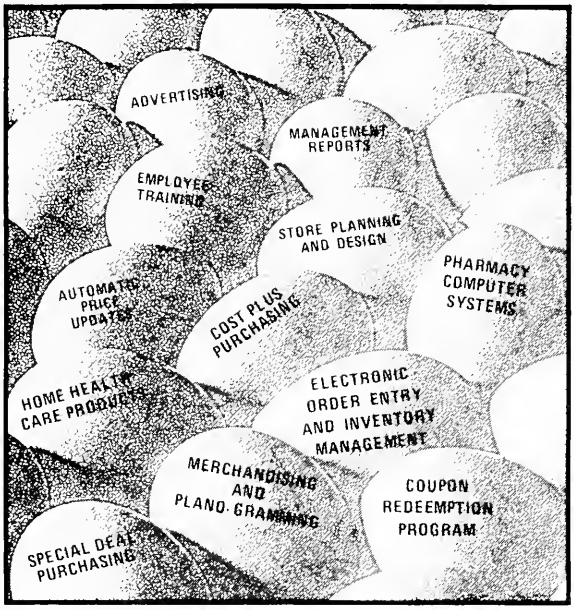
As requested in your letter of July 15, I have forwarded copies of your letter to all of the members of the Pharmacy Liaison Committee of the PMA Board of Directors.

For your information and that of the leadership of your Association, I am enclosing several copies of the pamphlet, "Pharmaceutical Research and Development/Prescription Drug Prices." This pamphlet places in context the prices of prescription drugs compared with all other items, and how those prices relate to the enormous investment PMA companies make every year in research and development.

I hope the enclosed pamphlet will be of interest to you and your membership.

Sincerely,
Gerald J. Mossinghoff, President
Pharmaceutical Manufacturers Association

cc: To the Members of the
Pharmacy Liaison Committee,
PMA Board of Directors



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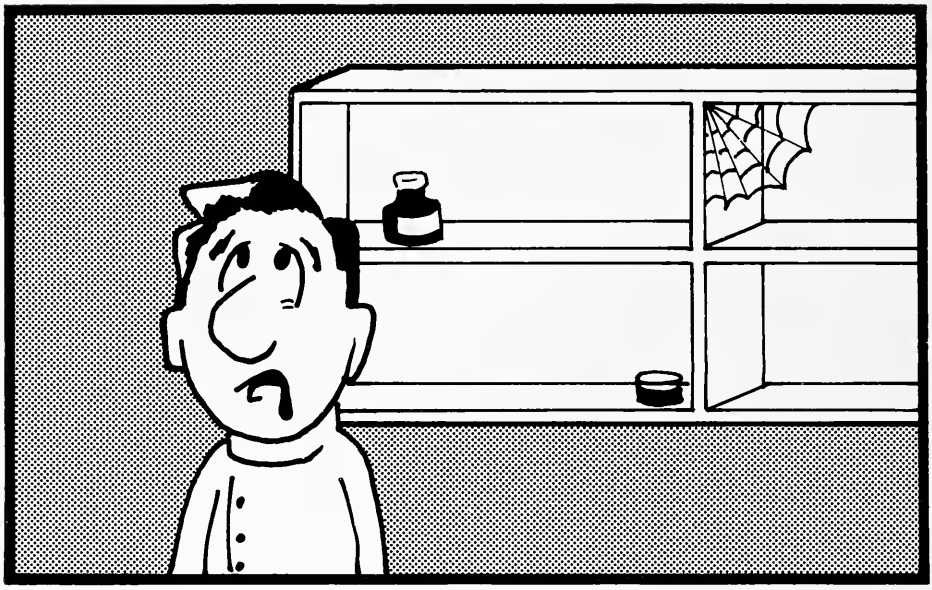

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CONTENTS

NCPhA Service and Performance Survey 4
War Against Drugs 11
Campbell Student Body Report 13
Campbell School of Pharmacy Report 15
State Board of Pharmacy 17
TMA Convention and Annual Meeting Report 19
Current Pressures on Hospital Pharmacy 23
Lilly Hospital Pharmacy Operations Survey 25
Dickinson's Pharmacy 27
Personal Notes 32
Classified Advertising 30
34

ADVERTISERS

Burroughs Assets Management Company 29
Colorcraft 27
Dr. T.C. Smith Co./W.H. King Drug ..... Back Cover
Eli Lilly and Company 6
Geer Drug 10
Jefferson Pilot 2
Justice Drug Company 1
Kendall Drug Company ..... Inside Front Cover
Marion Laboratories 22
Owens & Minor, Inc. ..... Inside Back Cover
Return Goods Policy Manual 8
Spear Associates ..... 16 & 28
The Upjohn Company 26
Washington National Insurance Company 14

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MEMBERS AND NON-MEMBERS SPEAK OUT ON SERVICE IMPORTANCE AND NCPhA PERFORMANCE

The majority of North Carolina pharmacists believe that overall, the Association is doing an average (non-members) to good (members) job at providing standard state association services. Members and non-members also agree that there are certain services that are not being performed at a level which equals the importance they attach to those services.

These results and others were revealed in a study conducted for the Association by Jan Hirsch Phillips, Ph.D. at the University of North Carolina School of Pharmacy. The purpose of the study was to determine if the Association was expending adequate resources and energy on the types of services that members and non-members believed to be most important for a state association to provide.

Methods

The opinions of 200 members and 200 non-members were solicited during the fall of 1986. Questionnaires were randomly enclosed in the Association's regular membership renewal package to members and the regular membership solicitation mailing to non-member N.C. pharmacists. Response to the questionnaire was commendable as 74% of the member sample and 55% of the non-member sample took the time to complete and return the questionnaire.

The goal of the questionnaire was twofold. First, pharmacists were asked to indicate the level of importance they placed upon each of a selected list of services. (Table 1) Importance ratings ranged from 1 which indicated the service was "Strongly Unimportant" to 5 which indicated that the service was "Strongly Important". Secondly, pharmacists were asked to indicate how well they believed NCPhA had performed each of the listed services. (Table 2) Performance ratings ranged from 1 which indicated that NCPhA has performed the service poorly to 5 which indicated that NCPhA performance of the service has been excellent.

Comparisons were then made between how important pharmacists (members and non-members) believed a service was and how well they thought the Association performed the service. Disparity between importance and performance ratings for services is indicative of a "mis-match" between the emphasis of Association leadership and the priorities of Association constituents (current and prospective members).

Table 1

Importance Ratings[1]
Members and Non-members

Service	Members		Non-members	
	Mean Rating	S.D.[2]	Mean Rating	S.D.[2]
Monthly Journal and News Bulletin[+]	4.7	0.64	4.3	0.99
Federal and State Lobbying	4.7	0.72	4.5	0.87
Liaison with Government, Regulatory, Third Party and other Professional Organizations	4.7	0.64	4.0	1.09
Continuing Education Programs	4.6	0.87	4.6	0.93
Assist Local Assns. with C.E.	4.5	0.79	4.4	1.07
Professional Liability Insurance	4.4	0.88	4.3	1.02
Third Party Plan Information[+]	4.4	1.07	4.0	1.16
Job Placement Service	4.2	0.97	4.2	1.00
Insurance Plans (Health, Life Store Owners & Income Replacement)	4.1	1.03	4.0	1.27
Annual Convention[+]	4.1	0.92	3.4	1.37
Outlines for Community Presentations	4.0	0.87	3.8	1.17
Consultant Pharmacist Section	3.8	0.97	3.6	1.06
Women's Auxiliary[+]	3.1	0.16	2.2	0.17
Collection Service	3.1	1.35	2.8	1.56
Traveling Members Auxiliary[+]	3.1	1.43	2.2	1.38

[1]Importance Ratings were collected on a five-point Likert scale ranging from 1 = Strongly Unimportant to 5 = Strongly Important

[2]S.D. = Standard Deviation — a measure of diversity of response.

[+]Significant difference between mean importance rating for members and mean importance rating for non-members. ($\alpha = .05$, $p < .05$)

Member Opinions

Members indicated that the performance of many services by NCPhA was not at a level which equaled the importance they attached to the respective services. The services for which members rated importance much higher than NCPhA performance were:

(greatest difference between importance and performance rating listed first)
* Federal and state lobbying efforts
* Liaison with government, regulatory, third party, and other professional organizations
* Provision of third party plan information
* Monthly journal and news bulletin
* Continuing education programs
* Professional liability insurance
* Assist local associations with continuing education

The disparity in importance and performance ratings indicates that the Association may want to realign its efforts related to the above services more closely with member needs and wants. Simultaneous improvements or alterations in all of these services is obviously not feasible. Therefore, the services which members rated as most important to them should initially be addressed by the Association.

The provision of a monthly journal and news bulletin was one of the three services which received the highest importance rating from members. Improvements in the journal or bulletins could be easily implemented and experimented with. Member feedback regarding changes could also be readily obtained. The two other services that shared the top member importance rating were lobbying (federal and state) and the Association's function as a liaison with government and other organizations. These were also the services for which the greatest disparity between importance and NCPhA performance ratings were reported. Low performance ratings for these services could be indicative of a low level of member awareness of the specific lobbying and liaison activities. However, another possible explanation with greater ramifications for the NCPhA leadership could be that members do not believe the Association's lobbying and liaison efforts are aligned with their interests.

The second and third most important services to members were providing C.E. programs and assisting local associations in providing their own C.E. programs. The disparity between importance and performance ratings indicates that improvement of these services could represent additional opporunities to better serve current members. The specific reasons for low NCPhA performance ratings releated to C.E. were not addressed in this study. Solutions to lessen the disparity between importance and ratings could range from improving promotion and/or organization of C.E. assistance to local associations to updating or changing the content of NCPhA C.E. programs.

The pendulum also swung in the opposite direction. There were three services for which members rated importance much lower than NCPhA's performance level of the services. These services were:

* Collection service
* Traveling members' auxiliary
* Woman's auxiliary

These services most likely appeal to some small segments of the member population. However, the Association should not rely on these services to contribute to overall member satisfaction. Resources directed toward providing these services may be better utilized if the services were expanded to appeal to broad segments of the member population. For example, the woman's auxiliary could be restructured to provide support for male and female spouses.

Non-Member Opinions

As with members, non-members indicated that some of the listed services were not being performed at a level which equaled the importance they attached to them. The services for which non-members rated importance much higher than NCPhA performance were:

(greatest difference between importance and performance rating listed first)
* Federal and state lobbying
* Job placement service
* Continuing education programs
* Third party plan information
* Professional liability insurance
* Assist local associations with continuing education
* Outlines for community presentations
* Liaison with government, regulatory, third party and other professional organizations

Except for the ordering, this list is similar to that reported for members. However, as would be expected, the number of services for which a disparity between performance and importance ratings was reported was greater for non-members than for members. Those services which non-members rated as most importance to them represent the most promising opportunities for the Association to increase its membership.

Continued on page 7

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NCPhA PERFORMANCE

Continued from page 5

Table 2

NCPhA Performance Ratings[1] Members and Non-members

Service	Members Mean Rating	Members S.D.[2]	Non-members Mean Rating	Non-members S.D.[2]
Monthly Journal and News Bulletin[+]	4.3	0.85	3.9	0.81
Assist Local Assns. with C.E.	4.2	0.84	3.8	0.94
Continuing Education Programs	4.2	0.83	3.8	0.82
Annual Convention[+]	4.0	0.79	3.7	0.76
Woman's Auxiliary[+]	4.0	0.89	3.0	1.21
Professional Liaibility Insurance	4.0	0.09	3.6	0.14
Insurance Plans (Health, Life Store Owners & Income Replacement)	3.9	0.76	3.7	0.64
Job Placement Service	3.9	0.77	3.1	0.98
Liaison with Government, Regulatory, Third Party and other Professional Organizations[+]	3.8	0.86	3.4	0.78
Third Party Plan Information[+]	3.7	0.99	3.2	0.93
Traveling Members Auxiliary[+]	3.7	0.84	3.1	0.84
Consultant Pharmacist Section	3.7	0.74	3.4	0.50
Outlines for Community Presentations	3.7	0.87	3.4	0.72
Federal and State Lobbying	3.6	0.96	3.4	0.88
Collection Service	3.3	1.09	3.4	0.64

[1]Performance Ratings were collected on a five-point Likert scale ranging from 1 = Poor to 5 = Excellent

[2]S.D. = Standard Deviation — a measure of diversity of response.

[+]Significant difference between mean importance rating for members and mean importance rating for non-members. (α = .05, $p \leq .05$)

Non-members indicated that the provision of C.E. programs was the most important service an association could offer. Improving either non-member awareness of NCPhA C.E. programs or if necessary improving specific C.E. programs could attract new members. Since members, who presumably have more actual experience with NCPhA C.E. programs, also indicated a substantial disparity between importance and performance ratings for C.E. programs, the problem may not be limited to a lack of non-member awareness but perhaps Association C.E. programs need to be altered or updated. Similar reasoning suggests that a change in, rather than increased awareness of, the Association's methods of assisting local associations in the provisions of their own C.E. programs may be appropriate.

As with members, non-members rated lobbying (state and federal) high on their list of important services but gave the Association a relatively low performance rating (largest disparity between importance and performance ratings for non-members.) Improvement in perceived lobbying efforts offers an opportunity for the Association to attract new members. However, as with members, lack of awareness of specific lobbying activities and results could explain the observed disparity or non-members may believe the Association's lobbying efforts are not aligned with their interests. Thus, further exploration of the problem is needed before corrective measures are implemented.

Non-members also indicated that the Association's provision of a professional liability insurance program was at a level less than the level of importance they attached to that service. Either the Association has not adequately publicized the availability and/or benefits of the program to non-members or the provisions of the program are not aligned with the needs of many non-members. Promotion and/or augmentation of the Association's job placement service also appears to represent an opportunity for attracting new members.

Reasons for Not Joining NCPhA

Pharmacists were asked to indicate which of a list of ten reasons for not joining NCPhA applied to them. Members were asked to respond as well as non-members because some reasons could have been relevant to members due to either a sporadic membership history or recently acquired membership status. The top three reasons for not joining NCPhA given by non-members and members were:

* "It costs too much to join"
* "I don't have time to get involved"
* "I can't get off work to go to the meetings"

Summary results of this question are presented in Table 3. Member responses presumably apply to a previous or anticipated period of non-membership.

Continued on page 9

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NCPhA PERFORMANCE

Continued from page 7

Table 3

Reasons for Not Joining NCPhA

Reason	Non-Members %[1]	Members %
"It costs too much to join."	51	20
"I don't ahve time to get involved."	42	15
"I can't get off work to go to the meetings."	33	25
"I'm not interested in joining another association."	29	7
"I tried it but didn't feel like it was worth it."	28	12
"NCPhA offers no services for my type of practice."	22	8
"I didn't graduate from UNC."	14	11
"NCPhA is for owners, not employees."	12	12
"Nobody has asked me to join."	12	5
"NCPhA doesn't care about my part of the state."	8	6

[1]% percentage of respondents who agreed the reason applied to them.

Reasons cited by non-members are of particular interest. Some of the reasons for not joining the NCPhA cited by non-members are not easy for the Association to address, e.g. "I can't get off work", "I don't have time to get involved." However, the reason most frequently given by non-member respondents was that it costs too much to join. (This was also the second most frequently cited reason for members.) A substantial number of non-member respondents also indicated they had tried NCPhA membership but didn't feel it was worth it. The Association leadership may be able to increase the perceived value of NCPhA membership for non-members by investing time, effort and resources into improving the services non-members deem most important. By increasing the perceived value per dollar ratio, the actual dollar investment may not appear as unreasonable to non-members.

Summary

The purpose of this study was to determine if the Association was expending adequate resources and energy on the types of services members and non-members believed to be most important for a state pharmacy association to provide. Overall, the Association's provision of standard state association services was rated as average (by non-members) to good (by members). However, many services were not being provided at a level that equaled the importance attached to the services by members and non-members. The "mismatch" of Association performance level and member/non-member perceived importance for many services indicates realignment of Association goals and objectives may be appropriate.

The major limitation of this study is that only the currently perceived realm of possibility was examined. Given the changing health care environment and trend in pharmacist characteristics (younger and employee pharmacists), the Association may need to consider redefining its role. Is the Association's primary responsibility to provide services so that its members can better cope and adapt to changes within the pharmacy environment? Or, is the Association's primary responsibility to be a driving force in the creation of an environment that will serve the needs of the pharmacy profession?

North Carolina pharmacists may have needs and wants which were not addressed in this survey or perhaps they have needs or wants which they do not readily recognize or are not able to affect as individuals. A portion of the Association's role may be to anticipate the services which will be needed by N.C. pharamcists, collectively, in the future. Should the Association advocate adequate compensation or working conditions for all N.C. pharmacists? Should the Association spearhead the development of programs to accommodate two worker households, e.g. day care facilities, flexible scheduling? Policy questions such as these coupled with the results of this study should provide common ground for further exploration and discussion between Association leadership and the pharmacists of North Carolina regarding future directions for the North Carolina Pharmaceutical Association.

Controlled Substances Samples

The Drug Enforcement Administration has restated its rules require all dispensers of controlled substances, including samples, to keep detailed records. DEA says "Complete and accurate records of all controlled substances given to the patient must be maintained regardless of their origin. Samples of controlled substances are not excluded from this requirement." *(Paraphrased from Rx Ipsa Loquitur, Volume 14 Number 7.)*

IN THE WAR AGAINST DRUGS, WHAT CAN WE DO?

Everywhere you turn, you hear about the problem of drug abuse in our country. Nancy Reagan, in a speech delivered to the World Affairs council in June of 1986, said that "there's a drug and alcohol epidemic in this country and no one is safe from its consequences." And an epidemic it is.

A Billion Dollar Industry

Americans spend $50 billion a year on marijuana, smoking 31 tons of the substance each day. The use of cocaine among high school students has risen to 5.8%, an all-time high. An amazing 35% of high school seniors use stimulants. Of these, 1% use them daily. Ninety-three percent report trying alcohol, and 5.8% report being daily users. The ratio of seniors who report drinking five or more drinks in the prior two-week interval is at a shocking 41%. The use of heroin has remained steady with 1.2% reporting experience with the drug. Nine percent report experience with opiates other than heroin. However, these statistics can be misleading, considering that 15% of today's students leave school before their senior year.

It usually starts with cigarettes, which serve as the first break from parental guidance. After cigarettes, alcohol is usually the next step on the experimentation field. From there, an astonishing 95% experiment with marijuana. Then, it seems, the sky's the limit as they begin to abuse the "street drugs" — cocaine, LSD, and various prescription drugs. According to the National Institute on Drug Abuse (NIDA), "of kids who smoke cigarettes, 81% will try marijuana, and of those who try marijuana, 60% will then try other drugs."

The most staggering problem is cocaine. Americans spend $39 billion annually on the substance. It is estimated that 22 million Americans have tried the drug. Of these, at least 10 million use the drug monthly. An incredible one million suffer from chronic addiction. The members of the "baby boom generation," the now so-called "yuppies," comprise the largest group of users.

Americans feed $80 billion into the illicit drug market each year, not including alcohol. Amazingly, this amount is four times the combined OTC and prescription drug markets.

Pharmacists Against Drug Abuse

Many pharmacists are getting involved in the war on drug abuse. They are meeting with parents, youth, and members of their community to combat the problem. The pharmacist is the most accessible health professional. This accessibility, combined with extensive education, puts the pharmacist in a perfect position to serve as a drug abuse counselor.

One way in which you can get involved is with the Pharmacists Against Drug Abuse Foundation (PADA). Founded in 1982, PADA is an organization of pharmacists working hard to fight drug abuse.

The organization was an inspiration of Jack B. O'Brien, then president of McNeil Pharmaceutical, following a meeting at the White House with approximately 200 business executives whom Mrs. Reagan wanted to inform about the seriousness of the drug abuse problem in this nation. Shocked by what he learned at that meeting, Mr. O'Brien promised Mrs. Reagan that his company would establish a drug abuse program. He assigned Herbert W. Browne the responsibility of developing such a program with the suggestion that community pharmacists should be a key ingredient.

While meeting with the National Federation of Parents for Drug-Free Youth (NFP) and the Parent Resources Institute for Drug Education (PRIDE), an idea was proposed. If an educational program could be devised that would make drug abuse information widely available to parents, and if these parents would unite in the community to develop programs to curtail drug abuse, the program should be successful. The result: Pharmacists Against Drug Abuse.

Pharmacists — The Active Ingredient

Pharmacists are getting involved for many reasons. First, they have a vast knowledge about drugs and their pharmacological effects on the body. Second, they are accessible, since fifty to seventy thousand people walk through the doors of a pharmacy each day. Third, pharmacists care about the communities they serve and about maintaining a safe pharmacy environment. When drug supply on the street runs low, drug

Continued on page 12

WAR AGAINST DRUGS

Continued from page 11

addicts must turn to the pharmacies. This phenomenon translates into an increase in theft and endangers the lives of pharmacists.

What does PADA do? PADA provides education for pharmacists through a 50-page booklet entitled "A Pharmacist's Guide to Drug Abuse." The booklet contains information about many street drugs, including marijuana, cocaine, LSD, and PCP, and about tobacco, alcohol, and abuse of prescription drugs.

Pharmacists may obtain a brochure entitled "The Kinds of Drugs Kids Are Getting Into" free of charge from their local wholesalers. This educational brochure is for parents and comes with an easel for display on the pharmacist's counter. Window signs and pocket-savers that say "This is a place where parents can learn about drug abuse" may also be obtained.

PADA also hosts training sessions to aid pharmacists in anti-drug abuse speeches in their communities. Participants receive speaker kits, containing slides and two sample speeches, one for parents and one for young people.

Since its launch on November 15, 1982, approximately 15 million brochures have been distributed. PADA has hosted over thirty training sessions in as many cities. Herb Browne, president of the Pharmacists Against Drug Abuse Foundation, says that attendance at the sessions averages over 100 pharmacists. This computes to over 4000 pharmacists who have benefited from the sessions. Literally hundreds of speeches are now given each month by pharmacists to parents groups, civic and religious organizations, students, etc. But there is still much to be done.

The PADA program has also been launched in foreign countries. In 1985 the program was launched in Italy and is still growing today. Other PADA programs have been launched in South Africa, Ireland, England, and Canada, with more planned in other countries.

To Find Out More

On October 24 at the American Pharmaceutical Association Midyear Regional meeting in Birmingham, AL, PADA will present a one and one-half hour program to pharmacists and students to help them get involved. Here you can learn what pharmacists all across the country are doing to curb the abuse of drugs. The program will feature speakers who will present an overview of drug abuse and discuss specific agents. Pharmacists can also receive continuing education credit for the session.

Now is the time to do your part in the battle against drug abuse.

SUPPORT GROUP ORGANIZED

A new mutual support group for pharmacists recovering from chemical dependence or other impairments, International Pharmacists Anonymous (IPA), has been formed. The new group held its organizational meeting during the American Medical Association's 8th National Conference on Impaired Health Professionals in Chicago and its first membership meeting during the American Association of Colleges of Pharmacy-National Association of Boards of Pharmacy District II meeting in Niagara Falls, NY.

IPA membership is open to any pharmacist or pharmacy student who belongs to or is seriously considering joining any of the traditional "12-step" programs (such as Alcoholics Anonymous, Narcotics Anonymous, and others), regardless of current license status. There are no dues or fees and inquiries are strictly confidential. IPA is not affiliated with any professional disciplinary or regulatory body or other organization.

IPA goals are "to share experience, strength and hope with phramacists and their families in recovery, to offer fellowship and peer support, and to provide a resource for colleagues in need of help." Experience will be shared concerning available treatment, possible consequences if a problem is acknowledged, and the different options available. A caller need not be identified in order to obtain information.

The current anonymous "listkeeper" of IPA states that there are already more than one hundred members, at least ten of them women. Over 30 states are represented and members are from varied backgrounds. Some are students, others faculty members at colleges of pharmacy. Many work for chain pharmacy organizations, some are pharmacy owners, and others have left pharmacy altogether. While the majority have had alcohol problems, many others have had difficulty with other drugs and at least one primarily with gambling.

An IPA national meeting is being planned for 1988, and other future meetings are being planned to be held in conjunction with other pharmacy or addiction conferences.

For information on membership in IPA, contact: Nan Davis, Pharmacist, St. Elizabeth Hospital, 225 Williamson St., Elizabeth, NJ 07207; (201) 527-5021. Ms. Davis may also be contacted at home: 36 Cedar Grove Rd., Annandale, NJ 08801; (201) 730-9072 or (201) 735-2789 (recording).

REPORT OF THE STUDENT BRANCH
Campbell University
School of Pharmacy

by Joseph S. Moose
President SAPhA 1986–1987
Campbell University

The Campbell University School of Pharmacy Chapter of NCPhA was just an idea this time last year. We wanted to start our chapter out with a strong foundation — and we did. Out of fifty four students, we recruited fifty four members. 100% membership is something very few, if any, pharmacy school in the nation can boast and I'm proud to be one of the fifty four.

After the majority of the students signed up, elections were held for the offices of President and Vice President. Michael Williams was elected Vice President. Mike as well as Dean Maddox played an instrumental role in getting the membership to the 100% mark and I thank them both for doing such a grand job.

Now that the foundation was layed with two officers and a strong membership, all we needed was an advisor. That position was filled by a new and welcomed member to the Campbell family, Dr. Tom Wiser. Dr. Wiser was very active in the Maryland Pharmaceutical Association at the University of Maryland School of Pharmacy where he taught prior to Campbell. Although he hasn't been with us that long, he has showered us with ideas and projects.

One project in the making is an education/question and answer drug abuse program with the Buies Creek School System.

Some of the functions that the organization has accomplished in the short period of time that we have been together are: two awards have been set up for "Outstanding Service to the Profession of Pharmacy" and "Outstanding Professor." These awards are to be given yearly and their recipients are voted on by the members.

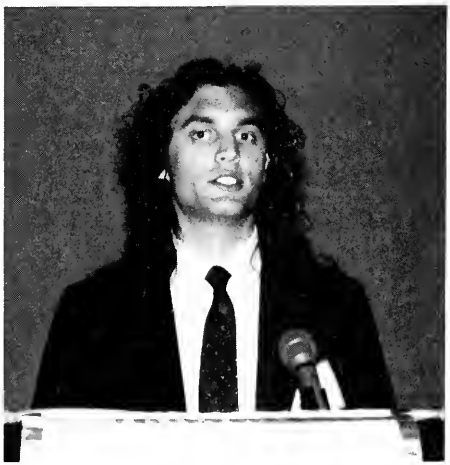
We helped solicit funds for Kappa Epsilon, the first professional pharmacy fraternity at Campbell. As well as the awards and KE, we also had a social with the law school, the only other professional school at Campbell. It gave both schools a chance to get out of the books and relax for an evening.

The School of Pharmacy held Parents Day where all the pharmacy students parents were invited to Buies Creek to see just what their children have gotten themselves into. They got a chance to meet the faculty and SAPhA members gave tours of the pharmacy school, facilities and campus.

Dr. Wiser and six students represented Campbell in Chicago at the National APhA Convention. National officers were elected and proposals were voted on but the biggest educational experience came from meeting with other chapters in our region as well as nationally and discussing projects and ideas. Overall, I believe we left a very good impression in the eyes of other SAPhA/APhA members as well as the good citizens of Chicago.

To sum it up, I know the Campbell Chapter isn't that large in number, but what we lack in size we more than make up for with our zeal and attitude toward the profession. Our great rapport with faculty and other students makes for an entertaining and educational experience that will benefit the profession in just a few years.

I would like to personally thank Mr. & Mrs. Mebane, Dean Maddox, Dr. Wiser and Mrs. Wallace for everything they have done. I feel like I should thank Dr. Teat but I'm not really sure what, if anything, he's done. Finally, I would like to thank Vice President Mike Williams for being there with the rope to pull me out of the hole when it gets too deep. Thanks.



Joe Moose, President

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CAMPBELL UNIVERSITY SCHOOL OF PHARMACY REPORT TO NORTH CAROLINA PHARMACEUTICAL ASSOCIATION

April 23, 1987

by Ronald W. Maddox, Dean

Faculty

The faculty of the school of pharmacy currently consists of nine faculty members from a variety of academic institutions and backgrounds. Additions to our faculty since last year include Drs. Thomas Wiser, Robert Greenwood, Alan Richards, and Edward Soltis.

Dr. Thomas Wiser, who is Chairman of the Department of Pharmacy Practice, graduated from the University of Minnesota where he received a B.S. in Pharmacy and Pharm.D. Prior to joining Campbell, Dr. Wiser was on the faculty at the University of Maryland School of Pharmacy where he was involved in teaching and clinical practice. Dr. Wiser has the responsibility for the development of our practice faculty and clerkship program.

Dr. Robert Greenwood is a graduate of the University of North Carolina, Chapel Hill, with a B.S. in Pharmacy and Ph.D. in Pharmaceutics. Prior to joining our faculty, Dr. Greenwood was Assistant Professor of Pharmacokinetics and Biopharmaceutics, College of Pharmacy, University of Oklahoma. Dr. Greenwood will teach biopharmaceutics and pharmacokinetics.

Dr. Edward Soltis graduated from Butler University with a B.S. in Pharmacy and from the University of Florida with a Ph.D. in Pharmaceutical Sciences. Dr. Soltis will teach pathophysiology.

Dr. Alan Richards graduated from Brigham Young University with a B.S. in Physiology and M.S. in Anatomy. He received his Ph.D. in Microbiology from Texas A&M. Dr. Richards will teach in the areas of microbiology and immunology.

The school of pharmacy has eight additional faculty positions funded in its 1987–88 budget. Faculty will be employed in the following disciplines: pharmacology, drug information, pharmacy administration, geriatrics, internal medicine, pharmaceutics, medicinal chemistry, and toxicology.

Ronald W. Maddox, Dean

Enrollment

Our charter class entered in the fall semester of 1986. This class consisted of *54* students selected from 120 applications. We feel these students were well qualified academically to enter pharmacy school as their over-all grade point average was a 3.2 and 28% had a B.S. degree. It is also noteworthy that 90% of our students are North Carolina residents.

Our pre-pharmacy program continues to grow. We currently have 55 students on campus enrolled in pre-pharmacy as compared with 20 last year.

Drug Information

Renovation has been completed for the Campbell University Drug Information Center that will be located in the university library. We are currently advertising for a faculty member that will serve as Director of the Drug Information Center. The Center is projected to be operational this fall.

Continued on page 16

CAMPBELL UNIVERSITY

Continued from page 15

Research

A faculty research laboratory has been completely renovated with the installation of new laboratory benches and fume hood. The acquisition of laboratory equipment is proceeding as planned. The animal care facility is awaiting arrival of the cage washer for completion of renovation. The faculty has submitted five research grant applications to national funding agencies. Research activity will commence at the conclusion of spring semester classes.

Continuing Education

We were approved as a provider of Continuing Education by the American Council on Pharmaceutical Education at their January 1987 meeting. Dr. Daniel Teat, our director of continuing education, is developing programs to help meet continuing education needs in North Carolina.

Advancement

The school of pharmacy has received support from various individuals and pharmaceutical companies. During our first year of operation, we have received donations of equipment and funds totaling over $250,000. The following companies have made major contributions: DuPont Pharmaceutical Company, Glaxo Pharmaceutical Company, Burroughs Wellcome Pharmaceutical Company, and Hoechst-Roussel.

In summary, the first year of operation of the Campbell University School of Pharmacy has gone smoothly. We have had tremendous university support, an excellent student response, and exceptional professional acceptance. On behalf of the faculty and students of Campbell University School of Pharmacy, we are proud to be part of the pharmacy community in North Carolina.

STATE BOARD OF PHARMACY

PHARMACY PERMITS ISSUED

July 6, 1987

Eckerd Drugs
3925 New Bern Ave.
Raleigh, NC
Robert Ennis Parrish, ph-mgr.

Kerr Drugs
Village S/C
3020 Hope Mills Rd., Suite 274
Hope Mills, NC
Robert M. Wood, ph-mgr.

Kroger Pharmacy
401 Jonestown Rd.
Winston-Salem, NC
Andrew Brown, ph-mgr.

Rite Aid Discount Pharmacy (T/O)
389 Raleigh Rd.
Henderson, NC
Janice M. Moon, ph-mgr.

July 20, 1987

Tiger Drugs #4
4508 South Main, Hwy. 311
Archdale, NC
Clyde Dean Bryson, ph-mgr.

July 21, 1987

Wal-Mart Pharmacy
40 Pinecrest Plaza
Southern Pines, NC
Jerry Rhoades, ph-mgr.

Wal-Mart Pharmacy
845-R Blowing Rock Blvd.
Lenoir, NC
Judith Goodman, ph-mgr.

Cleveland Co. Health Dept. (LSP)
Kings Mountain Satelite, 706 W. King St.
Kings Mountain, NC
Jerry R. McKee, ph-mgr.

Drug World Phcy. #3 (T/O)
331 W. Main
Taylorsville, NC
Alvin D. Woody, ph-mgr.

July 22, 1987

Drug Emporium
3501 North Blvd.
Raleigh, NC
Joseph Paul Graham, ph-mgr.

August 3, 1987

Rite Aid Discount Pharmacy
Hills-Jones S/C, East 5th. St.
Tabor City, NC
Daniel Burden, ph-mgr.

Revco Discount Drug Center
7665 Cliffdale Rd.
Fayetteville, NC
James F. Reale, ph-mgr.

Revco Discount Drug Center
NEC NC Hwy. 226 & Henry St.
Spruce Pine, NC
Cherrie Owens, ph-mgr.

Continued on page 18

PHARMACY PERMITS

Continued from page 17

August 12, 1987

The Medicine Shoppe (T/O)
2919 Central Ave.
Charlotte, NC
David Jamison, ph-mgr.

August 17, 1987

Kerr Drugs
Sunset Crossing
5220 Sunset Rd.
Charlotte, NC
Jerry Bridgers, ph-mgr.

Kerr Drugs
Steele Creek Commons
9118 York Rd.
Charlotte, NC
Michael Best, ph-mgr.

Revco Discount Drug Center
3140 East 10th St.
Greenville, NC
Jeffrey D. Strickland, ph-mgr.

Dare Co. Health Dept. (LSP)
Manteo, NC
Roy Odell Phillips, ph-mgr.

Wake Co. Health Dept. (LSP)
121 Fuquay Ave.
Fuquay-Varina, NC
Danny J. Cress, ph-mgr.

Wake Co. Health Dept. (LSP)
110 Pearl St.
Garner, NC
Danny J. Cress, ph-mgr.

August 17, 1987

Wake Co. Health Dept. (LSP)
Brooks & Ownes St.
Wake Forest, NC
Danny J. Cress, ph-mgr.

Wake Co. Health Dept. (LSP)
201 East Vance St.
Zebulon, NC
Danny J. Cress, ph-mgr.

August 18, 1987

Women's Healthcare, Inc. (LSP)
1012 South Kings Dr., Suite 306
Charlotte, NC
Vic Pendergrass, ph-mgr.

Urgent Care Plus (LSP)
518 Owen Dr.
Fayetteville, NC
Thomas B. Reaves, ph-mgr.

August 21, 1987

Kerr Drug
Hoods Crossroads
3611 Matthews-Mint Hill Rd.
Matthews, NC
Patricia Griffeth, ph-mgr.

August 25, 1987

Morven Pharmacy (T/O)
Main St.
Morven, NC
Thomas W. Hough, Jr., ph-mgr.

Eckerd Drugs (T/O)
6829 Newell-Hickory Grove Rd.
Charlotte, NC
Ann Walker, ph-mgr.

Eckerd Drugs (T/O)
2001 East 7th St.
Charlotte, NC
Allen M. Charney, ph-mgr.

Medical Urgent Care Center
of Raleigh (LSP) (T/O)
8312 Creedmoor Rd.
Raleigh, NC
Robert Darrell Jenkins, Jr., ph-mgr.

September 8, 1987

Fair Bluff Discount Drug
142 E. Main St.
Fair Bluff, NC
James Hubert Meares, Jr., ph-mgr.

Kmart Pharmacy
Canova Ctr.
508-K 10th. St. N.W.
Conover, NC
Michael C. Rhodus, ph-mgr.

Beddingfield Drug Co. (T/O)
325 E. Main St.
Clayton, NC
Richard T. Crowder, ph-mgr.

Link Bros. Pharmacy (T/O)
118 S. Scales St.
Reidsville, NC
Oscar N. McCollum, ph-mgr.

TRAVELING MEMBER'S AUXILIARY OF NORTH CAROLINA PHARMACEUTICAL ASSOCIATION 1987–1988

ADAMS MARK HOTEL
April 23, 1987
Charlotte, N.C.

BREAKFAST MEETING OF THE BOARD OF GOVERNORS AND OFFICERS OF T.M.A.

The meeting was called to order by Doug Sanders in the absence of President John T. Black who was ill.

The minutes of the last meeting was read by L.M. McCombs. A motion was made by Tom Sanders and seconded by Len Phillipps that they be passed as read.

Treasurers Report by L.M. McCombs —

Savings	$2848.06
Note	2500.00
Checking	2098.00
Total	$7446.36

All were pleased with the financial report.

Printing of Roster for 1987–88: Cost in the Carolina Journal of Pharmacy for 1985 was $1100.00, for 1986 it was $973.00. A discussion was held as to the cost of the old card method which was mailed to each drug store and hospital. A motion was made by Rusty Hamrick and seconded by Len Phillipps that Tom Sanders and Mac McCombs investigate the cost and printing of the old card method (not to exceed $1500.00 in cost) and report back to the office. The motion passed.

Treasurer Audit: Steve Collins was appointed by Doug Sanders to audit the T.M.A. books.

Search for a 2nd Vice President: Rusty Hamrick, Roy Moss, and Steve Collins was asked to look for a 2nd Vice President and report at the annual meeting the next day. Tom Terry III (Owens Minor) and William V. O'Quinn (N.C. Mutual) were mentioned.

Golf Report: Owens-Illinois will pay the green fee, Burroughs Wellcome will pay for cards, and Justice Drug will pay for drinks and sandwiches.

Life Members: The following requested by letter for Life Membership in the T.M.A. —

C. Rush Hamrick (Kendall Drug Co.)
Hartwell M. Smith (Kendall Drug)

A motion was made by Tom Sanders and seconded by Steve Collins to grant life membership to these two. The motion passed.

There being no further business, the meeting adjourned.

— L.M. McCombs, Secretary/Treasurer

THURSDAY MORNING BREAKFAST MEETING OF T.M.A. FOUNDATION

CHAIRMAN: Tom Sanders, Presiding

The minutes of the last years meeting were read by L.M. McCombs. On a motion by Steve Collins and seconded by Roy Moss, they were accepted as read.

Financial Report by Zack Lyon: Cash on hand is $17,410.80. After the report Mr. Lyon asked to be relieved of handling the finances of the Foundation Fund. Mr. Lyon nominated Steve Collins to take his place. After a brief discussion, Mr. Collins agreed to accept the office. This was seconded by Roy Moss, and the motion passed.

Audit: Mr. Sanders asked Rusty Hamrick and Len Phillipps to audit Mr. Lyons books. They accepted.

Loan Money to Chapel Hill: After a brief discussion concerning the amount of money sent to Chapel Hill ($9,500) for loans to students, a motion was made by Rusty Hamrick that we send $2,000 more to Chapel Hill. ($1,500 to Chapel Hill and $500 to Campbell College. All money to be handled by Mr. Al Mebane.) The motion was seconded by Ralph Rogers, Jr. and passed.

Mr. Sanders made a motion that the new Secretary (Steve Collins) contact all wholesalers and ask for money to support the T.M.A. Foundation. It was seconded by McCombs, and passed.

Continued on page 20

AUXILIARY

Continued from page 19

Nominating Committee: Steve Collins and Roy Moss. Mr. Collins nominated the following Board of Directors for 1987–88. The motion was made by Rusty Hamrick, and seconded by Bobby McDaniels, and passed.

Replacement on Board of Directors: Doug Sanders to replace W.H. Andrews. The Directors for 1987–88 are as follows:

3-Years	1-Year
Rush Hamrick, Jr.	John Black (Emeritus)
Tom Sanders	Frank Fife
Stephen L. Collins	Len Phillips, Jr.
Doug Sanders	Ralph Rogers, Jr.

2-Years
E. Delacy Luke
Tom Terry, III
Bobby McDaniel
Roy Moss

Officers for 1987–88 presented by Nominating Committee as follows:

CHAIRMAN:	Tom Sanders
SEC.-TREAS:	Steve Collins
ASST.SEC. Treas.	L.M. McCombs

A motion was made by Len Phillipps to accept the officers as nominated, and seconded by Ralph Rogers, Jr. The motion passed.

There being no further business, the meeting was adjourned.

— L. M. McCombs

TRAVELING MEMBER'S AUXILIARY

11:00 A.M. — FRIDAY MORNING 73rd ANNUAL MEETING OF T.M.A.

The meeting was called to order by First Vice President Doug Sanders, due to the absence of John T. Black, who was ill. The invocation was given by C. Rush Hamrick, Jr.

Greetings from Womans Auxiliary: by Mrs. Jesse E. Oxendine. Her words of praise and encouragement was welcomed by all members of the T.M.A. present.

Minutes of Last Meeting: On a motion by Steve Collins, and seconded by Horace Lewis, the minutes were omitted as they were read and passed at the Thursday morning meeting of the officers and Board of Directors. The motion passed.

Rite of Roses: The Rite of Roses was conducted by C. Rush Hamrick, Jr. and Rusty Hamrick, III. It was very impressive and in memory of the following:

Thomas B. Waugh, 7/9/86
Justice Drug Co.
James M. Darlington, 10/10/86
O'Hanlon Watson Drug Co.
David F. McGowan, 3/07/87
Eli Lilly & Co.
Wilbur Leon Hickman, 2/25/87
Eli Lilly & Co.

A moment of silence was observed in their memory.

Treasurer's Report:

Savings	$2848.06
Note	2500.00
Checking	2098.00
Total	$7446.36

Audit: The books were audited by Steve Collins who reported that same were in order as reported.

Golf Report: Given by Junior Little (Owens Illinois). Fifty-One Men and two Women played golf. Little stated that he hoped more women would play next year.

Tennis Report: Given by Sam Stuart (Jefferson Pilot) reported that 12 played tennis (9 men and 3 women).

Dance Report: by Mac McCombs. All seemed to enjoy the dance. The music was great, and hope we can afford them in Asheville next year.

Foundation Report: by Tom Sanders. The total Foundation Fund is $29,000.00, including money in bank and loan fund. Mr. Sanders ask for more contributions to the fund from all members and wholesalers and drug stores. Mr. Sanders made a motion that we send $2,000 to Chapel Hill. $1500.00 for Chapel Hill and $500.00 for Campbell College. It was seconded by Zack Lyon, and the motion passed.

Foundation Treasury Report: by Zack Lyon. Total money on hand (Savings, Notes, etc.) is $17,410.80. In the officers and Board meeting Thursday, Mr. Lyon stated that some younger blood should start handling the Foundation Funds. Mr. Steve Collins was elected as Secretary-Treasurer of the Foundation Fund. (4-23-87)

Foundation Fund Audit: by Len Phillipps. Mr. Phillipps stated that after hours and hours of checking he found the books in order.

Foundation Fund Officers for Year 1987–88:

Chairman: Tom Sanders
Sec.-Treas: Steve Collins
Asst. Sec.Treas: L.M. McCombs

Life Membership: by L.M. McCombs. Recommended (after letter of request) for Life Membership:

C. Rush Hamrick, Jr. (Kendall Drug Co.)
Hartwell M. Smith (Kendall Drug Co.)

The motion was seconded by William E. Harris, and passed.

New Members: by Roy Moss. Mr. Moss asked that all members of T.M.A. should try to get some new members as our membership seems to be decreasing. All members present agreed with Mr. Moss.

Change time of T.M.A. Annual Meeting from 11:00 A.M. to 9:00 A.M., by Mr. Steve Collins: Mr. Collins made several good reasons for changing the time of our annual meeting. Many reasons came from the floor not to change the time. No action was taken at this time.

Steve Collins Report on Al Mebane granddaughter, Sarah Clampet. Born and lived about 30 hours. Mr. Collins made a motion that the T.M.A. send $100.00 to the loan fund in memory of Sarah Clampet. Seconded by Rusty Hamrick, III. The motion also asked members (individuals) to contribute to this fund. This money to be sent to Chapel Hill at a later date. The officers to meet and decide exactly how the memorial be written, and also to wait on donations from members. The motion passed.

New Business: L.M. McCombs stated that $2,000.00 of the $2,500.00 Note could be turned over to the Foundation Fund. The note matures 7/3/87. It all depends upon how many members we have at that time.

Presidents Plaque: Doug Sanders asked Roy Moss if he would take the President's Plaque to President John T. Black (who is ill). Mr. Moss said he would be happy to do so.

Nominating Committee Report: by Rusty Hamrick, III. Mr. Hamrick nominated the following for office in the T.M.A. for 1987–88:

PRESIDENT:
Doug Sanders (W.H. King Drug)
1st VICE PRES:
E. Delacy Luke (The Upjohn Co.)
2nd VICE PRES:
Tom Terry (Owens Minor Drug Co.)
SEC.-TREAS:
L.M. McCombs (Eli Lilly — Retired)

The motion was seconded by Zack Lyon and Len Phillipps, and passed.

Installation of Officers: by C. Rush Hamrick, Jr. T.M.A. Officers for the year 1987–88 were installed by C. Rush Hamrick, Jr.

There being no further business, the meeting was adjourned.

L.M. McCombs, Secretary & Treasurer

Doug Sanders (left) receives the T.M.A. President's gavel from Roy Moss.

YOU WANT GREATER RECOGNITION FOR PHARMACY.

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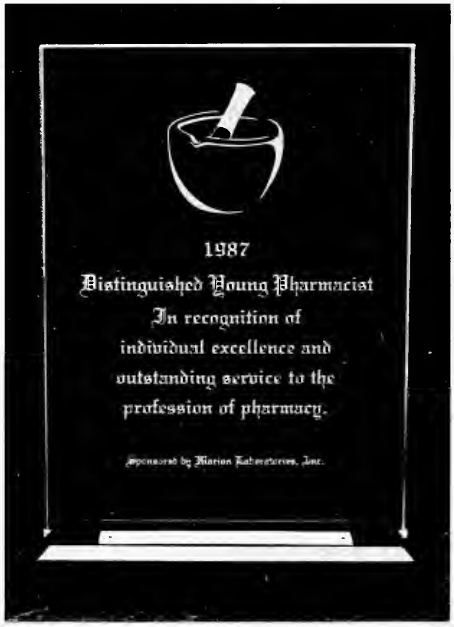
The future of pharmacy will be shaped by the many bright, well-trained young pharmacists entering the work force today. Their high standards of practice will carry the profession well into the next century.

At Marion, we believe in recognizing the best of these young pharmacists and their accomplishments as an example for others to follow. That's why we sponsor our "Distinguished Young Pharmacist Award," presented annually to a young pharmacist in each state for individual excellence and outstanding contributions in state pharmacy association activities, community affairs, and in professional practice.

In Colorado, this year's Distinguished Young Pharmacist Award goes to Bradley D. Haas of Denver. Congratulations!

We're confident that this year's distinguished young pharmacists will become the leaders who shape pharmacy's future well into the next century. And that's a future Marion believes is worth looking forward to!



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CURRENT PRESSURES ON HOSPITALS AND HOSPITAL PHARMACY

by James R. Talley, M.S.
School of Pharmacy
Northeast Louisiana University
Monroe, Louisiana

Current cost-containment for health care was initiated by the implementation of Medicare prospective pricing in 1984. The pressure continues for hospitals to further reduce costs and be more efficient in treating patients. The results are that length of patient stays have declined whereas the intensity of care has increased. Thus, the average hospital occupancy rate, the number of patient days, and hospital admissions have decreased.

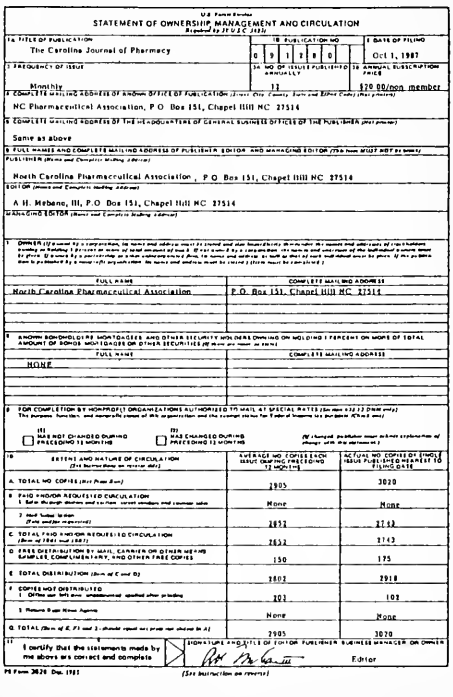
In 1985, peer review organizations (PROs) were implemented which focused on unnecessary Medicare hospital use. These aspects of cost containment for Medicare patients has created similar pressure for cost containment in the private sector of health care. It is possible that private use-review programs may have an even more profound effect than Medicare prospective pricing and PROs on hospital admissions, patient days, and average occupancy.

A number of insurance companies and employers are promoting the concept of private use-review programs. These programs include preadmission review, second-surgical-opinions, continued-stay review, and case-management services. Companies engaged in preadmission and concurrent review are predicting reductions of 15–20% for the number of hospital patient days.

These factors are resulting in a decreased use of hospital inpatient services. One report stated that in 1985, hospital outpatient visits increased by 4.7%, inpatient admissions decreased by 4.4% and average hospital occupancy attained a new low of 64%. This decrease in the use of hospital inpatient services has resulted in a decline of revenue for hospitals. In an attempt to off-set this decline in revenue, hospitals are engaging in alternative-care (home-care) services and for-profit subsidiary corporations. These include home infusion therapy programs, durable medical equipment, and joint ventures with physicians.

This decrease in the length of patient stays has resulted in an increase in the intensity of care provided patients. These aspects are directly affecting pharmacy services in hospitals because aggressive drug therapy is resulting in an increased use of injectable dosage forms. Thus, the increased costs of using parenteral products results in a disproportionate decrease in costs for pharmacy services. Unfortunately, hospital administrators may exert even greater pressure on pharmacy managers to obtain a proportionate decrease in pharmacy managers to obtain a proportionate decrease in pharmacy expenses as compared to other departments. A task which is almost impossible. Thus, pharmacy managers are being forced to reevaluate pharmacy services. This reevaluation may equate to a decrease in pharmacy services to patients.

The pressure on pharmacy to reduce costs is tremendous. Hopefully, the pharmacy profession will create innovative cost-reduction programs which will **not** sacrifice patient care. Our goal must remain, "to deliver the **highest** level of patient care at the **least** possible cost."



STATEMENT OF OWNERSHIP MANAGEMENT AND CIRCULATION

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North Carolina Pharmaceutical Association, P.O. Box 151, Chapel Hill NC 27514
EDITOR (Name and Complete Mailing Address)
A.H. Mebane, III, P.O. Box 151, Chapel Hill NC 27514
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PS Form 3526 Dec. 1985 (See instruction on reverse)

Table 1
Average Hospital Pharmacy

	1986 (2,167 Hospitals)	1985 (1,651 Hospitals)	Percent of Change
Bed capacity	235	244	–3.8%
Class	private nonprofit	private nonprofit	
Profile	General	General	
Census (beds occupied)	59%	60%	
Admissions	8,416	8,566	–1.8%
Patient days	50,607	53,436	
Length of patient stay	6.0 days	6.2 days	
Hours central pharmacy open/week	97	100	–3.1%
Pharmacist hours/week	294 (7.3 FTE)	309 (7.7 FTE)	–5.1%
Technician hours/week	268 (6.7 FTE)	276 (6.9 FTE)	–3.0%
Support personnel hours/week	115 (2.9 FTE)	114 (2.9 FTE)	+0.9%
Inventory	$120,397	$121,198	–0.7%
	$ 2.38/patient day	$ 2.27/patient day	+4.8%
	$ 512/bed	$ 497/bed	+3.0%
	$ 868/occupied bed	$ 828/occupied bed	+4.8%
	$14.31/admission	$14.15/admission	+1.1%
Purchases	$1,053,737	$1,032,831	+2.0%
	$ 20.82/patient day	$ 19.33/patient day	+7.7%
	$ 4,484/bed	$ 4,233/bed	+5.9%
	$ 7,600/occupied bed	$ 7,055/occupied bed	+7.7%
	$125.21/admission	$120.57/admission	+3.8%
Inventory turnover rate	8.7 times	8.5 times	
Floor area (central pharmacy)	1712 sq ft	1799 sq ft	
Services offered by over 60% of pharmacies:			
Monitoring patient profiles	94.4%	Monitoring patient profiles	96.5%
Monitoring drug interactions	91.2%	Monitoring drug interactions	92.6%
Providing drug information services	74.6%	Providing drug information services	82.5%
Drug therapy consultation	67.9%	Drug therapy consultation	71.2%

A PREVIEW OF 1986 HOSPITAL PHARMACY OPERATIONS

This preview of 1986 hospital pharmacy operations was abstracted from the 1987 edition of the *Lilly Hospital Pharmacy Survey.* The new Survey is based on information received from 2,167 hospital pharmacies and is the tenth consecutive edition prepared by Eli Lilly and Company.

Table 1 shows that in 1986 the average hospital had 235 beds — down almost 4% from the previous year. Census again declined during 1986. Census has fallen consistently since 1982, and is almost 15 percentage points below the average annual census rate of close to 73% observed during the 1975 through 1981 period. Admissions during 1986 were about 2% lower than the previous year.

The average length of hospital stay declined from 6.2 days last year to 6.0 days in 1986, the shortest period of patient stay ever recorded in the Lilly *Survey.* The largest segment of hospitals reporting to the *Survey* continues to be private, nonprofit, general hospitals.

The number of hours the central pharmacy was open as well as the hours worked by pharmacists and technicians declined slightly during 1986, although support personnel hours remained virtually unchanged. The total hours worked by the overall pharmacy department staff fell over 3%, while the central pharmacy was open 3% fewer hours. Three hours of pharmacist time were required for each hour the central pharmacy was open during 1986 — slightly less than that recorded last year. The ratio of hours worked by technicians to hours open was unchanged at 2.8. Hours worked by support personnel for each hour open increased slightly from 1.1 to 1.2 during 1986.

For the third time in as many years, the dollar value of inventory declined when compared with the previous year's figure. In addition, purchases were 2% higher, with the result that the estimated inventory turnover rate increased from 8.5 to 8.7 times. However, on a pre-occupied-bed basis, inventory and purchases figures were about 5% to 8% higher respectively than in 1985.

Comparison of inventory and purchases based on patient days shows that inventory during 1986 equaled $2.38 per patient day — up 11 cents — or almost 5% higher than the year earlier. Purchases were $20.82 per patient day, an increase of close to 8%. Because inflation is not taken into account, its influence on inventory and purchases cannot be isolated. Therefore, these figures do not necessarily reflect increased use of pharmaceuticals and related items by hospital patients.

The floor area of the central pharmacy declined about 5% during 1986. This may be explained, in part, by the slight shift in distribution of the overall sample over the two years. It appears that smaller-sized hospitals accounted for a larger share of the total sample during 1986.

The ranking for the top four pharmacy department services was the same for 1986 as for 1985. These services were offered by over 60% of responding hospital pharmacies. However, there was a decline in the percentage of hospitals reporting these staff activities during 1986 when compared with 1985 figures.

Review of a decade of selected operating statistics from past editions of the *Lilly Hospital Pharmacy Survey* reveals the following trends:

- Since 1982, central pharmacy hours open per week increased at a slower rate than during the 1978–1982 period. Had the earlier trend continued, the 1986 average hospital pharmacy would have been open over 100 hours per week.
- The average number of occupied beds declined dramatically since 1981, reversing a significant uptrend. Had the earlier trend continued, one third more beds would have been occupied during 1986.
- Inventory and purchases per occupied bed showed steady, moderate growth of about 8% per year during the past decade.
- Pharmacist and technician hours worked per week per occupied bed increased steadily but moderately since 1978. However, pharmacist hours showed a slightly faster rate of growth than technician hours.

The 1987 issue of the *Survey* will be distributed to hospital pharmacy directors and others interested in hospital pharmacy during August, 1987.

Meet the newest chapter in our history of excellence.

For ten weeks, they skimmed the pages of a century's experience in the pharmaceutical industry. And they learned, about manufacturing, about research, quality control and marketing. But they didn't stop there. As members of Upjohn's 14th annual National Pharmaceutical Council-Student American Pharmaceutical Association (NPC-Student APhA) Internship Program, they went on to begin a chapter of their own. And quite frankly, we were impressed.

Through their eyes, we got an exciting glimpse into the future. And renewed assurance that pharmacy's next chapter will be promising indeed.

Upjohn

The interns tour the corporate museum at the Upjohn Visitor's Center. From left to right:
Allison L. Vordenbaumen, University of Texas at Austin
Mark B. Boeckmann, University of Illinois at Chicago
Hedi M. Bloom, Wayne State University
Judith A. Shinogle, University of Kansas

DICKINSON'S PHARMACY

by Jim Dickinson

Pharmacy according to Medco. At the outset of this latest of many Dickinson writings on mail-order pharmacy, let me make it clear that I am not opposed to mail-order — I am just skeptical. Mail-order worries me because there is no pharmacist-patient relationship, and I believe in those, even though some pharmacists are rotten at them.

My worries — and the worries of a growing number of legislators at both the state and federal levels — are heightened by the testimony in August at a Senate Governmental Affairs subcommittee hearing chaired by Senator Jim Sasser (D-TN), and by what came in my mail shortly afterward.

Medco Containment Services, Inc., owner of National Rx Services, was the focus of the hearing, which dealt with complaints by a panel of three former employees (all registered pharmacists), and with a complaint by a former patient who was dispensed Coumadin instead of Corgard.

Basically, the former Medco pharmacists, all of whom resigned voluntarily out of conscience, complained about Medco's high-volume quota system (54 Rxs per hour, six-plus hours per day), the 15-cents-per-Rx monthly bonus paid for Rxs averages exceeding 50-per-hour, the high levels of misfills by technicians (5% of all Rxs), and their inability to reassure themselves that the speed of the filling line could not cause *them* in their last-check responsibility to mail out death instead of therapy.

The pace of Medco's production line was "suicidal," they complained.

Mrs. Winifred Own, of Virginia Beach, Virginia, testified that after her close call (she referred the different-looking tablets to her neighborhood pharmacist), she had quit her federal employee benefit Blue Cross/Blue Shield mail-order option, to pay full price at the local pharmacy. "I'm not ready to die yet," she told the *Washington Post.*

Medco was highly indignant about all these dreadful slurs. Its chairman, Martin Wygod, challenged the anonymity that the subcommittee had given to his former employees (they testified from behind a screen), and questioned their motives ("Are they disgruntled former employees? Are they now affiliated with Medco's competitors in the retail market? Do they have a financial interest in undermining Medco's reputation?")

As the agent who brought these pharmacists to the subcommittee, I am the one who initially guaranteed them anonymity — and the subcommittee staff agreed with me, after being introduced them. These pharmacists had seen enough of the unwholesomely cozy relationship between their state pharmacy board and their Medco bosses to be terrified for their licenses.

And, indeed, one state pharmacy board exec who has a major Medco facility in his state told me that, at least so far as he was concerned, "Medco is wonderful." The company is so cooperative, unlike independent pharmacists who often resent being inspected, and give inspectors a hard time.

And another board exec was alleged by a Medco pharmacist to have refused to conduct a snap inspection based on her long, anonymous complaints because (a) the board doesn't act on anonymous complaints, and (b) anyway, he would have to alert Medco to the inspection first, for "security reasons."

Continued on page 28

DICKINSON'S PHARMACY

Continued from page 27

Is it any wonder my anonymous witnesses were slightly paranoid? As for who was paying them to tell lies about innocent Medco, one of my informants, offered $100 by me to critique Mr. Wygod's subcommittee testimony (which I sent her), completed the chore and wrote: "I wish to donate my $100 back to the cause at hand."

(Let me make an open invitation to all pharmacists at this point. If you know of a similar public safety hazard in pharmacy to the one described here, write me at P.O. Box 848, Morgantown, WV 26507-0848, or call on your nickel 304-291-6690, and I will provide the same anonymity guarantees as I did for the Medco pharmacists.)

To wrap up, the critiques my Medco pharmacists made of Mr. Wygod's written testimony have been (anonymously) turned over to Senator Sasser's committee. They describe that testimony as filled with falsehoods, and I believe there will be another hearing, to force testimony from the company *under oath.*

Other mail-order companies testified at the hearing, too. They told a more believable story. For example, instead of 54 Rxs/hour quotas and bonuses, and technician RX mixups, Thrift Drug's Express Pharmacy Service testified that it is striving for a modest 30 Rxs/hour "goal" and every one of its RXs is checked by at least two registered pharmacists.

If mail-order pharmacy can be practiced soundly (as the Veterans Administration and AARP seem to), I think this may be a way to do it. I have asked Thrift to let me bring my ex-Medco pharmacists in for a look.

I'll keep you posted. It's public health, safety and service that we're all interested in.

This feature is presented on a grant from G.D. Searle & Co., in the interests of promoting the open discussion of professional issues in pharmacy. G.D. Searle & Co. accepts no responsibility for the views expressed herein as they are those of the author and not necessarily those of G.D. Searle & Co.

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A pictorial United States Postal Service commemorative postmark will be affixed to all mail posted at the joint Japan-United States Congress of Pharmaceutical Sciences to be held in Honolulu, Hawaii, December 2-7, 1987. The Congress is being hosted by the American Pharmaceutical Association and the Pharmaceutical Society of Japan; over 1,500 U.S. and 1,500 Japanese pharmaceutical scientists are expected to attend.

The postal cancellation pictures a distillation retort serving as the circular postmark with the words JUC PHARM SCI STATION / (DATE) / HONOLULU, HI 96815. The acronym for Congress — JUC PHARM SCI — appears in both English and Japanese and the flask pictures the JUC PHARM SCI logo.

The U.S. Postal Service JUC PHARM SCI Station will be located at the Sheraton Waikiki Hotel in Honolulu on the following days and times:

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In replying to "blind" ads, address Ad. No., Carolina Journal of Pharmacy, P.O. Box 151, Chapel Hill, NC 27514. Telephone (919) 967-2237.

PHARMACIST WANTED: Director of Pharmacy for 64-bed hospital in Southeastern North Carolina. Excellent hours, salary negotiable, and good fringe benefits. Contact Tom Smart at (919) 582-2026.

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CLINICAL-STAFF PHARMACIST POSITION: Will be working every 3rd weekend and will have responsibilities in unit dose, IV admixtures, cancer chemotherapy, patient education, nursing inservice, pharmacy newsletter, pharmokinetic dosing, drug use evaluation and other evolving clinical applications. Some advanced training and experience in clinical pharmacy preferred. If interested and qualified please send resume to: Director of Personnel, Community General Hospital, P.O. Box 789, Thomasville, NC 27360. EOE.

STAFF PHARMACIST WANTED: Position at Kings Mountain Hospital. Modern 102-bed facility with computerized unit dosage. Hospital experience preferred but not necessary. Will consider a May graduate. Contact Jerry McKee at (704) 739-3601 Ext. 472.

We are seeking an ambitious and professional career-minded individual for Pharmacy-manager position in southeastern North Carolina near the coast. Computerized prescriptions, exellent salary, hospitalization and life insurance, paid vacations. Small professional pharmacy located in the center of a medical complex. Contact: Box CDD, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

Pharmacist looking for both retail and hospital relief work in Fayetteville, Lumberton and Piedmont area. Has 18 years of experience. If you are in need of such a person please contact Box DAK, c/o P.O. Box 151, Chapel Hill, NC 27514.

PHARMACIST WANTED: Drug Emporium, Greensboro, NC now hiring pharmacist. Excellent starting salary. Complete benefit package, plus bonuses included. Call Kent Huffman for details at (919) 282-3993.

PHARMACIST WANTED: We are seeking an ambitious, and professional career-minded individual for a pharmacist position in Greensboro, High Point and Winston-Salem, NC. We offer excellent salary, stock ownership, educational subsidy, extensive benefits, retirement plan, 401K tax plan, annual salary merit reviews. "Pure pharmacy setting". If interested call Lew Thompson 1-800-233-7018 or send resume to: The Kroger Company, Attn: Personnel, PO Box 14002, Roanoke, VA 24038. EOE.

Pharmacists Wanted: Farmco Drug Centers have present positions available in Rocky Mount, Elizabeth City and Roanoke Rapids, North Carolina. For more information contact James Thompson at (919) 878-8158.

PHARMACIST WANTED: Pharmacy II position available at Piedmont Correction Center in Salisbury. Rowan County. One year experience. Salary grade; 75. Salary range; 26,892-43,728. Call Sylvia Matthews at (704) 637-1421 Ext. 501 or 507.

PHARMACIST WANTED: Opportunity for pharmacist for independent pharmacy store located in Central Piedmont, NC. Store open 5½ day week. No nights, Sundays or holidays. Paid vacations. Reply to Box ABC, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

Pharmacists Wanted: Greensboro and Greensboro market area. Contact David Cox, Revco Drug Stores, at (919) 766-6252.

RELIEF PHARMACIST AVAILABLE: Central & Eastern North Carolina. Contact Pharmacy Relief, PO Box 2064, Chapel Hill, NC 27515 or call 919-481-1272 evenings.

Pharmacist with retail experience to manage Rx Department, monitor patient profile and compound mixtures. Professional hours, atmosphere and salary. Call Gary Newton, Fayetteville 800-682-4664 Office hours or 919-484-6214, 24 hours.

Pharmacy for Sale: Piedmont area pharmacy with annual sales of over $500,000. Annual increase each year. Owner will assist with financing if necessary. Contact Box RK, NCPhA, P.O. Box 151, Chapel Hill 27514.

Want to Buy: Profitable Drugstore on Contract. Prefer Eastern/Central North Carolina. Would consider other areas of the state and other types of financing with low money down. Reply to Box PDQ, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

WANT TO BUY: Old or antique pharmacy fixtures, shelving and possibly soda fountain. Please contact Wheeler Carver, Jr. at P.O. Box 1121, Roxboro, NC 27573 or call (919) 599-4515.

Pharmacist Wanted: Excellent opportunity to work in independent professional pharmacy (80% Rxs) in large medical complex in Sandhills. No nights or Sundays. Excellent salary & benefits. Box 1119, Pinehurst, N.C. 28374. 919-295-2222 (day or night).

The Department of Pharmacy Services at Sampson County Memorial Hospital has opportunities available for hospital pharmacy practice. This 145 bed JCAH approved hospital is located within 1 hour drive of the coast. Good working conditions with Nursing and Medical Staff. Excellent starting salary, plus comprehensive benefit package. Activities include complete computerization, unit dose, IV admixture, patient profile and inventory control. Patient care services include: antibiotic monitoring, TPN, Aminoglycoside dosing and support for continuing education. Contact: Patricia Britt, director, Personnel or Jenny Strickland, Director Pharmacy at (919) 592-8511.

Owners want to retire. Old established store 30 miles from Raleigh in a small town with one doctor. $250,000 in sales, with an inventory of $50,000. Sales price of $65,000, includes fixtures and equipment. 85% Rx business. Reply to Box POK, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

Columbus Store Fixtures for Sale. Complete Prescription Department and 30 foot greeting card fixtures. Contact Bud O'Neal. Work: 919-943-2462, Home: 919-943-3751.

PHARMACIST NEEDED: Pharmacist for Community Pharmacy located in Carrboro. Approximately 45 hours a week with alternate weekends off. Must be willing to live in Chapel Hill or Carrboro telephone area. Send resume to Vaughn Independent Pharmacy, 503 W. Main Street, Carrboro, NC 27510 or call 919-967-3766.

Experienced relief pharmacist wanted 1-2 days a week in independent retail store in Kinston. Computer experience helpful. Call Dan Eudy at 523-3172.

Wanted full time pharmacist. Western part of the State. Two 10 hour days in two different locations. Three consecutive days off, no Sundays, no nights. Both in resort setting. Contact Jack Alexander, (704) 526-2366.

(Continued on page 32)

PERSONAL NOTES

WHITE WINS SCHERING'S SECOND MAJOR SWEEPSTAKES

John White, the owner of John White Pharmacy in Fayetteville, NC, will join 39 other pharmacists and their guests on a week-long trip to Bavaria in November for winning the "Very Important Pharmacist II" sweepstakes promotion sponsored by Schering Corporation.

To become a winner, White, a pharmacist for 25 years, correctly answered the question, "What do most pharmacists recommend for athlete's foot?" which was posed to him by an unidentified bonded security agent acting as a customer. The correct answer, Tinactin, based on a recent survey of American pharmacists, is one of Schering Corporation's leading over-the-counter medications.

John White Pharmacy was one of nearly 53,000 pharmacies in this country to receive a sweepstakes entry form from Schering Corporation in April.

Every pharmacist who correctly answers questions about leading OTC brands on their sweepstakes entry form was eligible to receive a visit from an unidentified agent posing as a customer. The shopper surprised eligible pharmacists, who were all randomly selected, with one of the five questions they had correctly answered on their entry form.

Thirty-two winners of Schering's "Very Important Pharmacist II" Sweepstakes promotion have already been chosen, and another eight will beselected before the trip in November. The promotion is designed to thank pharmacists for recognizing the quality and effectiveness of Schering's leading OTC products. This is the second year that Schering is rewarding pharmacists' knowledge of these number-one OTC remedies with a week-long vacation. Last year, winning pharmacists enjoyed a luxurious week in London.

John White, a member of the North Carolina Pharmaceutical Association and the American Pharmaceutical Association, has owned his own pharmacy for nine years. His wife Peggy will accompany him on the trip to Bavaria where they plan to see the sights and tour the famed Bavarian castles. The Whites are the parents of two children who are also practicing pharmacists.

WEDDINGS

LISA JOYCE KROENUNG and Richard Clyde Wagoner were married Saturday, August 15 at Mount Pleasant Baptist Church by the Rev. John D. Attaway.

The bride is a graduate of the School of Pharmacy, University of North Carolina at Chapel Hill. She is employed as pharmacist-manager at Revco in Glen Raven. The groom serves in the U.S. Navy as a boiler technician, 2nd Class Petty Officer. The couple will reside in Burlington.

DEATHS

LEONARD ERASTUS REEVES, JR.

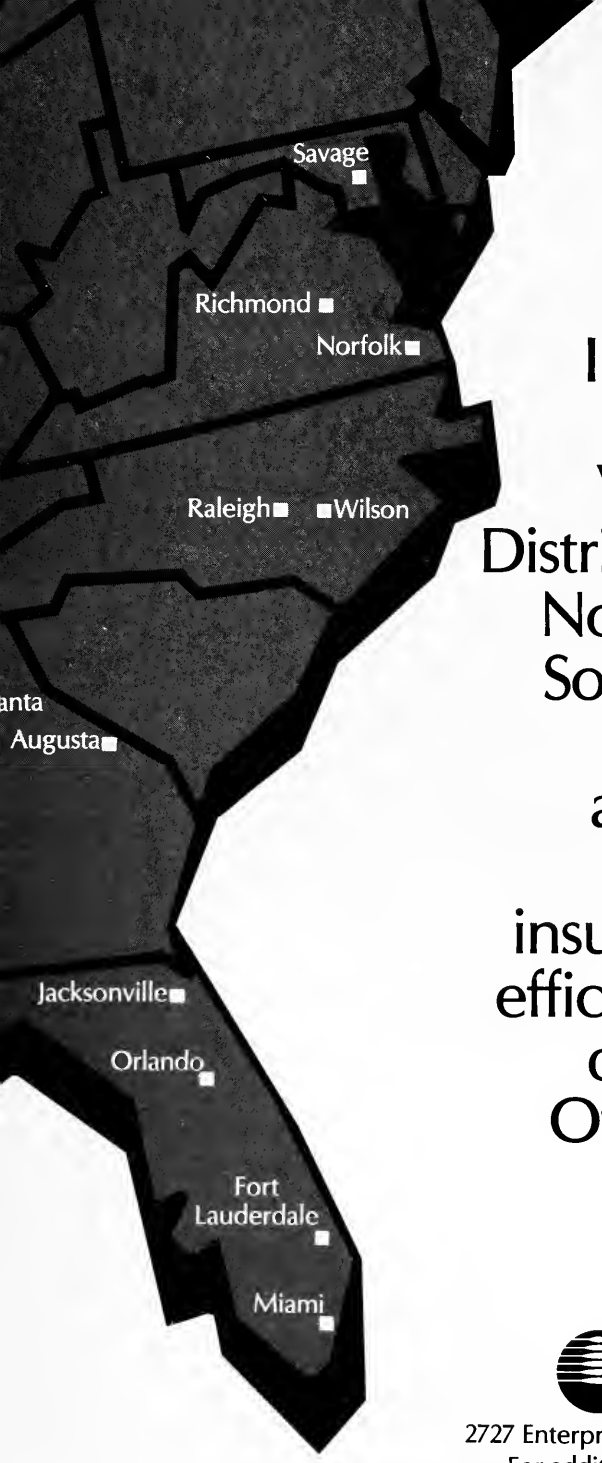
L.E. Reeves, Jr., Fayetteville, died Friday, August 7, 1987 at the age of 79. He was retired and was the former owner of Reaves Drug Stores of Fayetteville. He was a 1930 graduate of the UNC School of Pharmacy and was licensed by examination in 1930. Born in Waxhaw, Reeves was associated with stores in Asheville, Mt. Airy, Fayetteville and Raeford, before moving to California in 1945 for employment with Owl Drug Chain. He returned to Fayetteville in 1947 and opened Reaves Drug Store on Hay Street. He operated several stores in Fayetteville before retiring. Three of his six children are pharmacists.

CLASSIFIED ADVERTISING

(Continued from page 31)

PROFESIONAL PHARMACIES: Several small prescription-oriented pharmacies are currently available for individual ownership in North Carolina. These opportunities provide the vehicle to practice pharmacy the way you were taught, while offering an attractive income and more time to be with your family. In some of these cases, financing is also available to qualified candidates. For more information write: Jan Patrick, 10121 Paget Dr., St. Louis MO 63132.

Relief Pharmacist Wanted: Relief Pharmacist Available. Has RV, will travel. Call Robert Lucas at (919) 383-1421.



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Tom Sanders, left (and bearded), Chairman of the T.M.A. Foundation, presents a $2,670.00 check to NCPhA President Julian E. Upchurch for the Student Loan Fund.

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OCTOBER 1987 VOLUME 67 NUMBER 10

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CONTENTS

1987-1988 NCPhA Committees 5
Designing Steroids for the Future 17
How Personal Computers Work 21
NARD Physician Dispensing Brochure 24
Dickinson's Pharmacy 25
People News 28
Social Phobia 31
Births, Marriages and Obituaries 35
Classified Advertising 37

ADVERTISERS

Burroughs Wellcome Co. 22
Colorcraft 21
Dr. T.C. Smith Co./W.H. King Drug ..... Back Cover
Geer Drug 12
Gene Minton Consulting Services 20
Jefferson Pilot 2
Justice Drug Company 1
Kendall Drug Company ..... Inside Front Cover
Lawrence Pharmaceuticals 26
Lilly 30
Medi-Span 19
Owens & Minor, Inc. ..... Inside Back Cover
QS/1 38
Revco DS 40
Savage Laboratories 36
Spear Associates 16
Store Fixtures and Planning, Inc. 8
Upjohn 34
USPDI 10
Washington National Insurance Company 18

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(continued on page 6)

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DESIGNING STEROIDS FOR THE FUTURE: NOVEL DELIVERY SYSTEMS AND USES ON THE HORIZON

The year is 2010, and you've gone to the doctor complaining of joint pain and stiffness.

He might send you home with a prescription for steroid therapy and the recommendation that you book passage aboard a space shuttle "recuperation hospital" otherwise known as the zero gravity retreat.

Farfetched? The National Aeronautics and Space Administration (NASA) is now studying the effects of exposure to zero gravity on cortisol secretion and the relationship to the brittle bones of osteoporosis (loss of minerals from bone).

"The astronauts are having their blood, urine cortisol and electrolyte levels monitored during some shuttle missions so we can study the effects of zero gravity on steroid synthesis," says Mavis Fujii, M.D., physician, medical operations, life sciences division at NASA in Washington, D.C. "We will continue to assess and evaluate these changes in light of current knowledge about osteoporosis and muscle atrophy."

In fact, the entire field of pharmacology and medical therapeutics is going through a revolution, reaching into all aspects of modern medicine.

The Challenge: Delivering Active Drug Where the Body Needs It

Historically, the problem with most drug therapy has been that not enough of the drug reached the area where it was most needed. It was not unusual to discover that a drug produced excellent results in controlled animal studies or in test tubes, only to be disappointing in human clinical trials. Many researchers believe this failure is due primarily to the body's natural defenses and normal metabolic actions such as the following:

- Barriers exist to prevent noxious agents (toxins and germs) from reaching sensitive regions of the body. However, these same barriers often prevent therapeutic drugs from entering regions of tissue insult or injury.
- Oral or injected drugs are rapidly reduced to inactive metabolites by stomach acids or digestive and blood enzymes. Only small amounts of the active drug may ever reach the target site intact.
- Conventional drug delivery may result in undesirably high blood levels of drugs but low levels where most needed.
- Active drugs may remain in the therapeutic dose range for only a short period, quickly dissipating to levels considered useless.

New methods of drug delivery seek to improve drug effectiveness by maintaining therapeutic drug levels in the bloodstream and at the targeted site, reducing toxicity and enhancing patient compliance.

Controlled-Release System

Introduced in the early 1950s by Smith, Kline and French, controlled release (also known as sustained, timed, programmed or extended release) of medication was the first major innovation in drug delivery in decades.

Controlled-release spansules are prepared with drug in the core, surrounded by layers of natural wax. Due to the different thicknesses of wax, the beads dissolve at different times, releasing their contents over a prolonged period.

The next development, in the 1970s, involved implantation under the skin of a drug reservoir in a semipermeable compartment that would slowly allow its contents to diffuse into the bloodstream. Early studies using this approach showed that a rubberized reservoir of sex hormones implanted in cattle could provide effective contraception for more than a year. Implantation of other sex hormones could induce synchronized ovulation in cattle, simplifying the process of artifical insemination.

Today, women in Sweden and Finland are receiving silicone implants in the upper arm that contain the steroid contraceptive levonorgestrel (Norplant, Leiras) which produces effective contraception for five years. The implant can be removed easily at any time and fertility restored.

In the 1980s, drug companies began studying the release of drugs from miniature pressurized systems.

- Osmotic pressure (pressure exerted across a membrane by dissolved particles on one side) is being harnessed to force release of a constant amount of drug.
- Miniature osmotic pumps attached to thumb-sized, drug-filled reservoirs are now being implanted in cancer patients for

Continued on page 19

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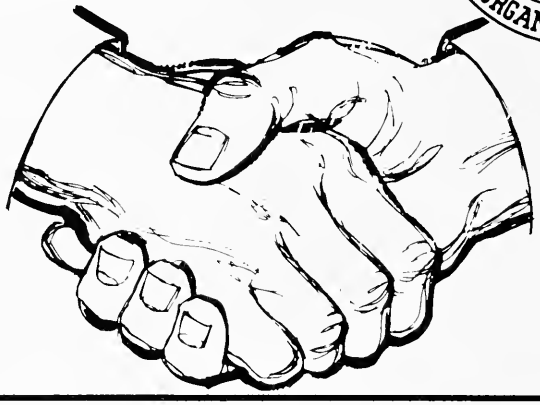

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STEROIDS

Continued from page 17

continuous delivery of chemotherapy or painkillers.

- A small group of patients have been implanted with a more sophisticated, programmable pump that can be regulated by an external computer. It enables physicians to tailor treatment to the individual's fluctuating needs.
- Other "pills of the future" now being studied utilize synthetic polymers or resins, which absorb drugs and release them slowly into the bloodstream.

Transdermal drug delivery systems — involving adhesive, drug-containing patches worn on the skin — will likely reduce the incidence of patient noncompliance. In theory, the patient need only apply the patch in the morning and forget about it for the rest of the day. This is in contrast to the complex instructions often given for patients to follow — for example, take two pills three times a day for 10 days, before meals but not before bedtime. However, there is some question about the patches' ability to deliver an even flow of drugs over a 24 hour period.

Ideally, drug contained in the patch reservoir penetrates the skin and produces a constant blood level. Oral or injected drugs often produce uneven blood levels. Transdermal patch systems have been tested and approved for use in the administration of the cardiac medication nitroglycerin and the motion sickness drug scopolamine. Clinical trials are under way with transdermal patch preparations for anti-hypertensives, anti-asthmatics, anti-inflammatory medications and insulin.

Carriers and Precursors

Not all drugs can penetrate the skin or be effectively released from implanted reservoirs. Some drugs must be carried directly to the target site to maximize effect and reduce toxicity. Perhaps the best example is the delivery of a chemotherapeutic drug directly to a tumor, sparing the healthy cells nearby.

Liposomes, spherical fatty molecules composed of three layers, are being tested as possible carriers. Liposomes' inner and outer layers are water soluble, and the middle core is fat soluble. Drug is contained in the center, surrounded by these three layers.

Ideally, when the drug/liposome complex is injected into the bloodstream, it should travel through the body without spilling its content until the crucial area is reached. Depending on the choice of lipids (fatty substances), the liposome can be designed to dissolve at a warm spot (such as a tumor), delivering its drug on target as does a heat-seeking missile.

Liposome developers are now concentrating on inflammatory or immunologic disorders, where it is possible to take advantage of abnormal tissue conditions.

Prodrugs are inactive agents that are converted into active drugs by enzymes or other chemicals in the body. The development of the *prodrug,* such as methylprednisolone (Solu-Medrol, Upjohn) represents another attempt to utilize the body's chemistry to advantage. Since drugs are often rapidly inactivated or "captured" by circualting proteins and enzymes long before they reach the problem site, a better method of delivering more of the drug intact to the problem site was needed.

Converting an inactive drug to an active one when the compound is closer to the target site prevents some of the degradation by proteins and enzymes and allows a greater amount of the active form of the drug to reach the site. This technique is being applied to the delivery of

Continued on page 20

STEROIDS

Continued from page 19

steroid hormones for the controlled release of contraceptives and anti-inflammatory agents in the treatment of head injury.

Swelling and tissue damage occurring soon after severe head injury appear to be responsible for a good deal of the long-term damage such injury produces. Leading neurosurgeons have recommended that steroids be administered as soon as possible to reduce swelling. One problem with this approach is the exclusionary net of blood capillaries known as the *blood-brain barrier.* These screen out many chemicals, barring them from the brain. By using prodrugs such as methylprednisolone, physicians find that more of the drug reaches the brain since less is broken down in the periphery.

Researchers are also attempting to couple prodrugs with carrier molecules that have greater solubility in fatty tissues such as the brain. This technique could facilitate drug passage from the bloodstream into the brain and improve effectiveness in treating brain edema (swelling) and tumors.

"We're learning a lot about prodrugs from research with Solu-Medrol," says Sherman Kramer, Ph.D., associate director of pharmacy research at The Upjohn Company.

By combining prodrugs with the technique of *high-dose pulsing* in the treatment of acute head

Table 1
The Many Uses of Steroid Hormones

I	**Cancerous Diseases**	Leukemia Lymphoma Breast Cancer (estrogen-dependent)
II	**Central Nervous System Disorders**	Mild/Moderate Spinal or Head injury Localized Brain Tumor
III	**Hormonal Disorders**	Adrenal Gland Insufficiency (Addison's Disease) Hormone Replacement (menopause, physical development, impotence)
IV	**Respiratory Disorders**	Asthma Aspiration Pneumonitis
V	**Arthritic Disorders**	Rheumatoid Arthritis Osteoarthritis Bursitis
VI	**Allergic States**	Severe Bronchial Asthma Serum Sickness Drug Hypersensitivity Reaction Transfusion Reaction Nonresponsive Allergic Rhinitis and Hay Fever
VII	**Eye Disease**	Inflammation of the Eye Allergic Conjunctivitis
VIII	**Skin Diseases**	Psoriasis Eczema Contact Dermatitis Exfoliative Dermatitis

courtesy — The Upjohn Company

HOW PERSONAL COMPUTERS WORK

by James R. Talley, M.S.
School of Pharmacy
Northeast Louisiana University

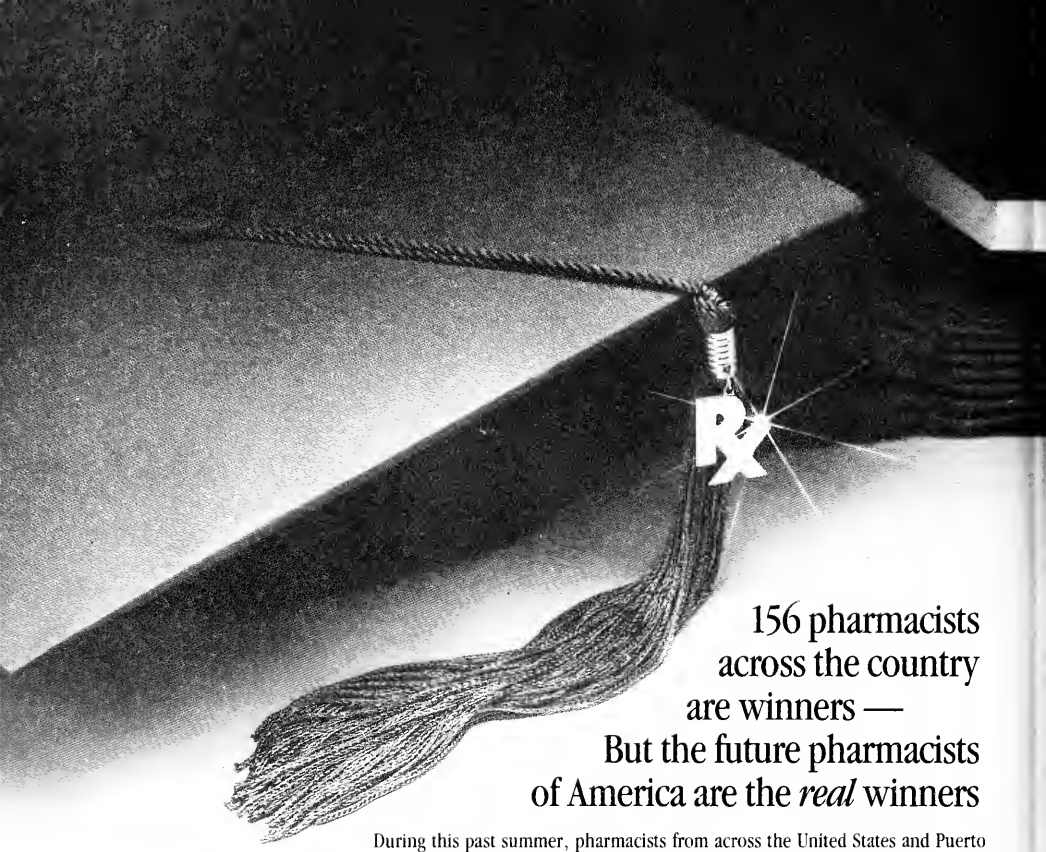
The computer age is upon us and in some circles is referred to as a revolution. Whether you believe it or not that we are in a computer revolution, the reality is that the technology of electronic logic devices and computers influence our lives daily. The term "computer" has become a household word and you may be one of the millions of educated people attempting to become "computer literate." Computer literacy can be viewed as three categories: "experts," "consumers," and "uninitiates." The "experts" represent a rather small group of individuals who have the ability to combine technical aspects with principles of computer operation. The "consumers" represent a rather large group and are primarily "users." The "uninitiates" are the largest group and they do not actively use or understand computers, but are somewhat aware of their existence primarily from a cause and effect standpoint on their daily lives.

Computers are extremely fast and reliable. They can perform complex logical operations in seconds. A computer can perform all the daily accounting of your business in minutes. The ability of a computer to perform pattern matching and function application enable it to generate lists, search in these lists, and then perform specific operations to fit each case it finds. This capability is especially useful when applied to operating a pharmacy and the numerous aspects of keeping records on patients and prescriptions. However, computers can only do what we tell them to do. We must "communicate" with computers by the use of computer "programs" written in computer "language." As a "user", this aspect of making the computer do what you want it to do can, at times, become extremely frustrating. There are days when I personally feel that this blasted hunk of plastic and silicon has embarked on a vendetta. It is during these frustrating periods which may encompass hours that I fantasize physical retaliation. Suffice to say, some of you probably also have had similar thoughts. However, these feelings slowly recede as I discover the error I mistakenly committed.

This brings us to the point of trying to determine how personal computers work. First, let's review several definitions of computers. A computer is: a data processor; takes input information, processes it, and produces output information; a calculator with a program; a device to extend human intelligence; a device that can be programmed to perform routine tasks. You will note that these definitions describe several aspects of computers. Thus, a computer requires input data which is usually entered manually from a keyboard which is similar to keys on a typewriter. The computer also requires programs to process data that is entered and without a program the computer cannot accept input data. The computer also requires some type of output device so you can observe the results.

Regardless of the complexity of your computer task, it should involve three operations: input, processing, and output. The "input" is the entry of data and is the starting point for all computer operations. When data is entered on a keyboard

Continued on page 23



156 pharmacists across the country are winners — But the future pharmacists of America are the *real* winners

During this past summer, pharmacists from across the United States and Puerto Rico were invited to enter a drawing to support pharmacy education. ☐ For every winning entry — 156 in all — Burroughs Wellcome Co. pledged to donate a $500.00 scholarship to a pharmacy school and a matching $500 grant to one of six national pharmacy associations of the winner's choice. ☐ To everyone who entered the drawing, thank you very much. And to the following winners, our most sincere congratulations:

ALABAMA
Charlie Lollar
Larry P. Myers
John W. Riches

ALASKA
Tom R. Nash
Charles A. Decker
Kay Eliason Houghton

ARIZONA
Kirk Huffaker
Linda G. Lyons
J. Fred Smith

ARKANSAS
Larry Harrell
Kim A. Harris
James H. Rumbach

CALIFORNIA
Kanaan Tajeh
Lloyd Mishlove
George W. Tanner

COLORADO
Keith M. Higbee
Lawrence L. Lubin
C. Joseph Vigil

CONNECTICUT
J. Kemler Appell
David Chuckla
Frank V. Potrepka

DELAWARE
Thomas Kolakowski, Jr.
Alfred J. Scarpello
Richard R. Steele, Jr.

DISTRICT OF COLUMBIA
Albert L. Fauss
James W. Noonan
Henry Wineglass

FLORIDA
George B. Browning
Samuel M. Steger
Fred W. Werner

GEORGIA
William Z. Kittrell, Jr.
Harry Tassopoulos
James H. Vandiver

HAWAII
Sandra Arakaki
Thomas Lynch
Carol A. Parker

IDAHO
Richard N. Everson
Gordon M. Tower
Ed Wimer

ILLINOIS
Kathleen Muno
Gerard R. Paszkiet
John M. Snyder

INDIANA
Cynthia Conley
Foster Dale Propst
John Topham

IOWA
Robert J. Metelak
Thomas W. Reeder
Larry D. Wolherman

KANSAS
Melissa Bitter
Cynthia Lord
Gary L. Welch

KENTUCKY
Mary E. Enzweiler
Christine M. Miles
William A. Shutkie, Jr.

LOUISIANA
Lamar W. Lane, Sr.
Erline S. Martin
Robert R. Price

MAINE
Francis J. Bush
Thomas M. Chan
Joan G. Mills

MARYLAND
Karen P. Dunavant
Arthur John Guido, Jr.
Ilene Maier

MASSACHUSETTS
Eric J. French
Gino V. Gangai
Stuart C. Leroy, Jr.

MICHIGAN
Ron L. Cobb
Harry Ganas
Colin Harvey, Jr.

MINNESOTA
Joseph V. Brochin
Joseph W. Luzius, Jr.
Gary Uthoven

MISSISSIPPI
John Thomas Davis
James B. Fox
Brenda Park

MISSOURI
Judith H. Evans
Jerry Popek
Tim Roettger

MONTANA
Warren Amole
John T. Bruton
Russell D. Symbal

NEBRASKA
Paul W. Hartz
Janet L. Obrt
Carol L. Zakmund

NEVADA
Barbara A. Beeman
Glenn M. Ellsworth
Cynthia Nelson

NEW HAMPSHIRE
Robert R. Cone
Lawrence Ford
Jack Robitaille

NEW JERSEY
Roy C. Putrino
Rich Rassas
Libby T. Shapiro

NEW MEXICO
S. Wayne Mosteller
Robert E. Phelps
Gilberto R. Rivera

NEW YORK
Myra Bellavia
Paul R. Lipinoga
Elliott B. Prillig

NORTH CAROLINA
James Thomas Brown
Winston Burroughs
Rita L.C. McCarthy

NORTH DAKOTA
Howard C. Anderson, Jr.
Doreen M. Beiswanger
Shelley Doherty

OHIO
Kathy A. Fudge
Pamela J. Sharkey
Stanley A. Weiss

OKLAHOMA
Mark Deevers
Gerald Heller
Jim Lovell

OREGON
Philip Baehmann
Bobbi Merritt
Jerry G. Sachtjen

PENNSYLVANIA
Jim Lover
George Strauss
William G. Wellley

PUERTO RICO
Zoraida Delesus
Graciela Martinez Diaz
Carmen E. Cardona Rivera

RHODE ISLAND
Catherine B. Alvarez
John J. Franko
Bernard Keegan

SOUTH CAROLINA
Richard Dewayne Caldwell
Alton Dale Hardy
W.G. Walter

SOUTH DAKOTA
Lyle A. Boes
Marlin Brozik
Corinne J. Christensen

TENNESSEE
Wilson C. Daniel
Joe G. Price
Ted L. Rozell, Jr.

TEXAS
J. J. Balh
Beverly Brewer
James McCoy

UTAH
Lynn E. Carroll
James Wdham Emery
Stanley Pestotnik

VERMONT
Terry A. Dennis
Michael J. Gaidys
Barbara T. Nye

VIRGINIA
Daniel W. Hancock
Donald E. Hanks
Mary Peterson

WASHINGTON
Wayne Engstrom
Arthur L. Gurtel
Jack Holt

WEST VIRGINIA
Donald H. Greenwell
Nicholas D. Linger III
John F. Rist, Jr.

WISCONSIN
Leroy N. Genke
Norman Malmon
David J. Wunrow

WYOMING
George E. Darlington
Terry Long
Ken Witzeling

Burroughs Wellcome Co.—

Working today for tomorrow

COMPUTERS

Continued from page 21

the computer immediately displays the entry on the display screen. It is also possible to have these entries printed on paper by the printer as well as displayed on the screen. It should be pointed out that the printer is seldom utilized in this manner. Other input devices besides the keyboard are cassette tape, diskettes, light pen, communication line, and game paddles. The input of data into the computer can be divided into data, programs, and commands. "Data" refers to what you want the computer to process. "Programs" tell the computer exactly what to do with the data that you have entered. "Commands" tell the computer what mode of operation to perform. It is important to realize that all three types of input are required, both before and during processing.

In the "processing" phase, after you have entered a program, data, and appropriate commands, the computer processes the data and generates output. The "output" phase is your ultimate goal and can involve a variety of devices such as: screen display, a printer, speaker, cassette tape, diskette, and communication line. You probably noticed that cassettes, diskettes, and communication lines serve as both input and output devices.

From a practical standpoint, there is no basic difference between a personal computer and the minis and mainframes. The primary differences are in the speed of operation, the amount of storage, and the flexibility. If you removed the cover of your computer (which I have done numerous times) you would see circuit boards populated by the microprocessor and memory chips, disk drives (a hard drive if your unit is so equipped), power supply, and a small speaker. A computer utilizes information stored in a manner which allows it to read and write fast (less than a millionth of a second). Memory is referred to as RAM (random-access memory) and ROM (read-only memory). Thus, devices referred to as memory chips are utilized. The memory chips are encased in small oblong plastic packages which contain rows of prongs on each side that enable them to be inserted or removed from sockets in the computer.

Memory is measured in bytes and one byte can store one character (either a letter or a number). Most memory systems store thousands of characters and thus the term kilobyte is used. Kilobyte is abbreviated with the letter K and actually stands for 1024 bytes (often rounded to 1000). Bit is another unit of measurement for memory and is the smallest possible unit of storage and refers to the opening or closing of one switch. One byte contains eight bits which represents eight switches of which any combination may be open or closed. Thus, there are enough combinations to store all the letters and numbers.

Codes are utilized to store information in computers. These codes represent the assignment of numbers and letters to combinations of bits. Although there are several computer codes, the standard code is the American National Standard Code for Information Exchange, which is abbreviated as ASCII. These codes are important for communication and the use of ASCII code facilitates the interchange of data between computers. It should be noted that the keyboard in the IBM Personal Computer deviates from the ASCII code by using a special IBM expanded code.

The processor is literally the brains of the computer and the other components support its operation because all data must pass through the processor. The processor also controls the overall operation of the computer by way of sequencing, control, and clock signals. In personal computers, the processor is actually a microprocessor and is often referred to as "micro." There are a variety of microprocessors used in personal computers and each type is different in its functions. The microprocessor used in the IBM Personal Computer (also in many compatibles) is the Intell 8088.

One measure of a micro's power is its word length (word, in computer terminology) which is the number of bits that a processor can handle at one time. Personal computers utilize word lengths of 8 bits, 16 bits, and 32 bits which means that they can process 1, 2, or 4 characters at a time. Longer words provide more memory and increased speed. It should be pointed out that word lengths used to address memory are usually different from word lengths used for data. For example, the Intell 8088 micro used in the IBM PC is an 8 bit and 16 bit hybrid. It has an 8 bit word for transferring data to and from memory, is a 16 bit data word internally, and is a 20 bit word for addressing 1 million memory locations.

If you could view the internals of a microprocessor you would find that it contains an arithmetic unit and a set of registers (very high speed memory). The address registers store memory addresses that are utilized to select the

Continued on page 24

COMPUTERS

Continued from page 23

area of memory to read from or written into. The computer obtains these addresses from the program being used and trasnfers this information to the address register which selects a location in the memory.

Although the memory chip is fast, it loses data every time power to the computer is turned off. Thus, disk memory (which is much slower) is utilized to provide permanent storage of data. Large amounts of data are transferred from disk memory to main memory, main memory feeds data to register memory (one word at a time), output of the microprocessor is accumulated in main memory, and then data is transferred from main memory to disk.

Special control programs (operating systems). are utilized to control this enormous flow of data. IBM refers to its control program as a disk-operating system (DOS). MS-DOS is a product of Microsoft. It should be pointed out that there are other operating systems besides DOS, but generally they are for experienced users. A summary of the functions of operating systems such as DOS are: transfer data between memory and disk (or tape), start-up the computer and perform diagnostic tests (circuits and memory), accept commands entered at the keyboard (allows you to control the computer), copy files from one disk to another, transfer data and commands to the printer, and transfer data and cursor movements to the screen.

STEROIDS

Continued from page 21

and spinal trauma, the physician may have a more effective weapon and a better way to deliver it. With high-dose pulsing, a much greater concentration of drug is administered early in the course of an illness, over a limited period. It is hoped that maximum benefit will be derived before the disease has had a chance to progress.

NARD ANNOUNCES NEW CONSUMER BROCHURE ON PHYSICIAN DRUG SALES FOR PROFIT

As part of a continuing effort to bring consumers accurate information on the unethical and anticompetitive practice of physician drug sales for profit, NARD has published a consumer brochure on the subject.

The brochure, entitled "Doctors Selling Drugs for Profit: Just Say No," will be distributed to consumers through independent retail pharmacists nationwide. It explains both the potential public health threat associated with physician drug sales for profit and the conflict of interest created when doctors make a profit on the drugs they prescribe.

"In the past two years, drug repackaging companies have sprung up that urge doctors to sell drugs directly to patients," the brochure tells consumers. "The companies tell doctors they can add 'up to $50,000 to their incomes' by selling drugs."

The brochure answers for consumers the most frequently asked questions about physician drug sales for profit and debunks many of the myths about the practice that have been circulated by the drug repackagers and others.

The brochure explains to consumers, for example, that physicians have free drug samples at their disposal to treat acute problems or emergencies, and points out that the inherent coercion that exists in the doctor-patient relationship effectively denies them freedom of choice in purchasing their prescription drugs. It also details the vital importance of the checks and balances that are guaranteed when physicians prescribe and pharmacists dispense — guarantees that are lost when physicians prescribe with one hand and dispense with the other.

The two-color "Just Say No" brochure is available to NARD members at $10 for 100 copies (nonmembers $20 per 100 copies).

DICKINSON'S PHARMACY

by Jim Dickinson

HELP WANTED — PHARMACISTS
Enormous salary plus big bonus
No nights or weekends

Accepting attitude a must; moderate-to-low IQ preferred. Apply Megabuck Mail Service Pharmacies, Englewood Park, NJ.

Could you fake a small IQ to land a job like that — $39,000 a year to start plus $10,000 in productivity bonuses? Hundreds of pharmacists — especially new college graduates anxious to pay off a heavy loan burden — are answering the seductive call of the hottest new practice setting in the profession.

But all that glitters is not gold, as seven Medco/National pharmacists told me in a taped, three-hour confidential disclosure session recently. They got sick of shipping intermingled drugs when dispensing speed overtook dispensing quality.

But until then, their working conditions were simply idyllic. "We worked 9-5, had every weekend off and we didn't have to sell baby diapers. We had plenty of patient and physician dialog (admittedly only by telephone), and we had access to patient profiles. National even bought us subs at lunch time. It was a dream come true. No pharmacist could want more."

Then everything changed. Coinciding with an avalanche of new employee benefit prescription contracts, National had to contend with a damaging, widely-publicized PCS survey on mail-order prescription costs that found them not to be cost-effective due to wastage rates.

Not only did National have much more business to service, but now it had to defend it in ever-deeper discounting. The company's response was to crank up the prescription line, from a leisurely (!) 50 Rxs/hour to 70-plus, and to extend the checking pharmacists' hours on-line from four to eight. The line's error rate soared.

The pharmacist-checking process is supposed to assure that the dosage units in the outgoing vials are true to label and true to prescription, but the line's speed, boosted by greed in the volume-based bonus system (15 cents bonus for every Rx by which the pharmacists' checking average exceeds 50/hour) makes for blurry checking.

Only the top layer of tablets, capsules, pills in a vial can be eyeballed.

One informant-pharmacist, who was making five figures in productivity bonuses on top of salary before rebelling, put it this way: "I was checking 75 Rxs an hour; it got so I couldn't remember what I had just checked."

And the pharmacists were never far from their non-pharmacist supervisors' taunts: "If a tech can do 60 an hour, why can't a pharmacist do it quicker?"

Another of my informants provided me with a 77-item list of errors personally observed during a thirty-day period. The pharmacists estimated that they rejected 5% of all prescriptions processed.

Worse, the rejects were all dumped, together, in large "Return to Stock" cartons at the end of each day, for redistribution by technicians to their originating Baker dispensing units and rotating trays in the filling area.

That's probably where the intermingling begins. One white tablet of Proventil 2 mg looks exactly like one white tablet of Lanoxin 0.25 mg, to a technician. Only a pharmacist can tell them apart, and even then it takes more than a trained eye — it takes a little time, which is something that National does not have to spare.

My informants testified — on tape — that many interminglings routinely occur, and any resulting complaints are dealt with in a top-security Customer Relations Department that pharmacists are discouraged from entering, and where patient records are kept away from effective access to line pharmacists.

One complaint in April that did escape the seal and become known on the floor was a phoned-in emergency involving a female Lanoxin patient with arrythmias from taking intermingled Proventil.

National's response to errors, my informants said, was to send a headquarters executive to give assembled pharmacists a "pep" talk and to warn them that the consequences of making mistakes would be "elimination." Plant procedures remained unchanged, however.

The pressure continued to build, and the pharmacists began to forget that they were making the best money in the profession. They began grumbling, and morale fell to a serious low.

That's when a new management bulletin was issued. A two-column specifications sheet, one side bore the heading "What we *are* looking for

Continued on page 27

Behind every good computer, stands an even better employee.

The home office and warehouse of Lawrence Pharmaceuticals are models of automated efficiency.

Orders are received electronically. Shelf labels, shipping documents and invoices are quickly prepared even as shipments are being filled. Mechanized conveyor systems smoothly carry products from receiving to bulk storage to order filling to shipping.

Everything runs with quiet precision. Why then does Lawrence need over 200 employees?

Because Lawrence still is a people business. Computers can't call on customers or help pharmacists arrange their shelves for better sales. Computers can't prepare advertising programs for participating members of True Pharmacy. Computers can't introduce new products or answer questions when you call on the phone.

Computers are invaluable in much that we do. But when all of the microchips are on the table, people are still what we're all about. At Lawrence we never forget that.

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DICKINSON'S PHARMACY

Continued from page 25

or at," and the other, "What we *are not* looking for or at."

According to this, the first desirable trait was "big picture oriented" (despite the fact that National ensures that its pharmacists know only what is involved in their immediate task, and vigorously discourages pharmacists going into other areas); the first undesirable trait in a pharmacist, according to the list, was high IQ.

Other sought-after attributes in the first column were: "High ethical/professional standards, aggressive, high energy level, not petty, can make tough decisions, objective, ability to communicate with management . . . " And on the other side, detriments included "on-line checking average, charisma, ability to socialize, ability to amuse, people who own a wristwatch (clockwatchers), people who are concerned with what they're going to make this week, people who are focused upon the almighty dollar, clowns and circus acts . . . "

Clearly, National was determined to quell dissent and to impose its standards on the pharmacists. So, my informants said, they took their complaints to the Pharmacy Board, and were astonished at the reaction they got.

"He (the board exec) told me they couldn't do an inspection without solid documentation and evidence, and even then they were required to give the plant notice before the inspection, because of 'security'," the pharmacist who made the anonymous call to the board said.

The National plant was not inspected as a result of this complaint.

Perhaps because mail-order pharmacy operations compete mainly with out-of-state pharmacies, they are viewed as a trouble-free, net asset to the state, bringing needed dollars in and boosting employment. This especially benefits minimum-wage ethnic groups who have little command of the English language and who are most likely to be intimidated by their supervisors.

What's National's side of the story? Five phone calls and a certified letter to president Martin Wygod yielded no response.

This feature is presented on a grant from G.D. Searle & Co. in the interests of promoting the open discussion of professional issues in pharmacy. G.D. Searle & Co., accepts no responsibility for the views expressed herein as they are those of the author and not necessarily those of G.D. Searle & Co.

UNC CAREER DAY

The School of Pharmacy of the University of North Carolina will hold its annual *Career Day* on Friday, February 5, 1988 in the Great Hall of the Student Union Building. All pharmacy students have been urged to participate and potential employers will have the opportunity to interview graduating seniors and those seeking summer employment as interns.

This year, individual partitioned booths will be available for each employer and scheduling of student interviews will be at 30 minute intervals. A continental breakfast and lunch for both students and employers will be provided as well as afternoon refreshments for employers.

The change informat and location is in response to comments and suggestions received over the past few years. Employers wishing to participate in *Career Day* should contact John Mackowiak, Ph.D., UNC School of Pharmacy at (919) 962-0081 for more information.

W. J. SMITH RESIDENCE PROGRAM

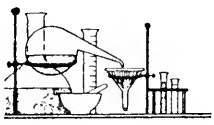
The UNC School of pharmacy and Glaxo Inc. announce the establishment of the W.J. Smith Practitioner-in-Residence Program.

Scheduled to begin this year, the program is designed to identify and bring innovative pharmacy practitioners to UNC to interact with students and faculty, and to influence students in their career decisions.

One pharmacist will be selected annually to participate in the four-day program. The first will be named in November and will begin serving in January.

Practitioners will be chosen from nominations by national pharmaceutical associations, Glaxo Inc. and the UNC Pharmacy School faculty.

The program honors W.J. Smith of Chapel Hill, for his contributions to North Carolina pharmacy during his 37 years as secretary treasurer of the North Carolina Pharmaceutical Association. Smith retired in 1978. The program is supported by an educational grant from Glaxo Inc.



PEOPLE NEWS

CHARLOTTE WOMAN'S PHARMACEUTICAL AUXILIARY

The Charlotte Woman's Pharmaceutical Auxiliary held its regular meeting Tuesday, October 13, 1987. Auxiliary members met at the home of Mrs. Jesse Oxendine to form car pools for a trip to Mission Air in Monroe, N.C.

At Mission Air we were welcomed by Mr. J. L. Brookes. Mrs. Sandy Simpson gave an interesting account of its beginning, which was started by her husband. It is a nonprofit organization, founded and operated by pilots, citizens, businessmen, and medical personnel who volunteer their time and talents. It is supported entirely by contributions and grants. Last year they had 700 requests for service, some having to be turned down for lack of funds.

After touring their premises and inspecting one of their aircraft, the members returned to Charlotte. They enjoyed lunch at Ryans Steak House.

Margaret Robinson, president, held a short business meeting. The annual bazaar was discussed. A motion was made by Dollie Corwin to hold an attic and bake sale at her home on Saturday, November 7th. The motion was seconded by Lurlene Barnhardt and passed.

New officers serving this year are: President — Mrs. Don B. Robinson, (Margaret); 1st Vice-President — Mrs. Jesse Oxendine (Jewell); 2nd Vice-President — Mrs. W. B. Hawfield, (Nancy); Secretary — Mrs. Tobie Steele, (Virginia); Treasurer — Mrs. Gibbs Henley, (Evelyn); Historian — Mrs. C. L. Cannon, (Laura); Parliamentarian — Mrs. Don Smith, (Betty); Advisor — Mrs. Leslie Davis, (Mary Lou).

Fred M. Cole, center, was presented a plaque of appreciation at a dinner in his honor at the Institute of Pharmacy. Cole has been building custodian of the Institute for 36 years and is retiring at the end of 1987. He retired from his job as laboratory technician at the Research Triangle Institute earlier in October. On the left is W.J. Smith, former Executive Director of the North Carolina Pharmaceutical Association and on the right is Al Mebane, current Executive Director.

WILL YOU LIVE 100 YEARS?

The projected size of the centenarian population over the next 100 years and the characteristics of that population from the 1980 census are detailed in a report prepared for the National Institute on Aging by the Commerce Department's Census Bureau. The report was prepared as part of the National Institute on Aging's major initiative on the rapidly growing oldest-old population (those over 85+).

The report, prepared by Cynthia Taeuber, Arnold Goldstein and Greg Spencer noted that, although centenarians are a rare population group, the United States is experiencing a steady increase in the number of people aged 100 or more years. In 1985, there were an estimated 25,000 centenarians, about 1 in 10,000 persons. By the year 2000, the centenarian population is projected to number over 100,000.

For those born in 1879, the odds against living 100 years were 400 to 1; by 1980, the odds had improved to 87 to 1. In the year 2080, the United States will have over one million centenarians if the assumptions underlying the Census Bureau's middle series projections hold true. The actual number, however, will depend on future changes in immigration and mortality. Lower mortality and changes in immigration could lead to as many as 5 million centenarians by 2080.

The report also found that centenarians as a group are socially and economically diverse, and that (as a group) their characteristics are quite similar to the population aged 85 and over. However, compared with people 85 and over, centenarians are more likely to be women, to be living with someone other than a spouse, and to have lower incomes. Between 76 and 84 percent of centenarians are widowed but over one-fifth (20 to 37 percent) of centenarian men are still married compared with less than one-tenth of women. Centenarians are found at all levels of educational attainment but women are more likely than men to have a high school diploma. Forty-five to fifty-five percent of all centenarians live in households with others or by themselves. Most of the remainder live in nursing homes.

Black centenarians are different from White centenarians in many respects. When comparing their respective proportion of the populations, there is some evidence that there are somewhat more Blacks than Whites among the oldest of centenarians, 105 years or more. There is a higher proportion of men among Black centenarians that among White centenarians. Blacks are also less likely to be found in institutional settings and they are more likely to be poor.

The report also provides data for each state on the number of centenarians living in institutional settings, their marital status, educational attainment, and income distribution.

For more information please contact Cynthia Taeuber or Arnold Goldstein 301/763-7883 at the Census Bureau, or the NIA Public Information Office 301/496-1752.

APhA ANNOUNCES ACTION AGENDA

The American Pharmaceutical Association (APhA) has announced the adoption of its strategic planning agenda to be implemented over the next three years. The details of this announcement were released in the October 1987 issue of American Pharmacy, the journal of APhA.

According to the article, association leadership targeted two efforts as being essential for building the organization so that it could best serve and represent its members. These efforts are growth of APhA membership, and renewal of pharmacists' image and influence.

APhA's "action agenda" will provide more than $1 million worth of new programs, products, and services over the next three years.

The association's Board of Trustees developed the principles which served as overriding considerations for determining the structure and direction of the agenda.

These principles include encouraging state pharmaceutical associations to participate in the programs; ensuring that the basic mission of enhancing the profession and improving the status of individual pharmacists is maintained; focusing on retaining current members and recruiting new members; and stepping up communications efforts, including marketing and production.

One of the significant outcomes of APhA's strategic planning process is that it will ensure that the Association will continually remain abreast of the needs of its membership. It also establishes unity of purpose among membership, association leadership, and staff.

NOTE: A copy of the American Pharmacy article is attached for your information.

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SOCIAL PHOBIA: WHERE SHYNESS ENDS AND ILLNESS BEGINS

by Michael R. Liebowitz, M.D.
Associate Professor of Clinical Pharmacy
Columbia University College of Physicians & Surgeons;
Anxiety Disorders Clinic
New York State Psychiatric Institute

Imagine Kathy, a pretty 16-year-old, standing fixed before the closed door to the immense hall. She can hear the buzzing voices of people, already seated. It's time for her to enter. But she is too afraid — her hands are trembling uncontrollably, her heart pounds. She's perspiring profusely and feels unable to catch her breath. She can think only of the thousand eyes that will be on her.

Her debut at the Metropolitan Opera?

No. Kathy is a high-school student trying to enter the school cafeteria. She has lunch there most school days, but it literally terrifies her every time. Kathy imagines that all the students stare at her and think she looks "stupid." In fact, she draws no more notice than any other student, and no one ever speaks disparagingly to or about her.

Kathy is not paranoid or psychotic. In most respects she's absolutely normal. But she is one of perhaps a million or more individuals who suffer from a seldom-discussed anxiety disorder called "social phobia." These people experience incapacitating anxiety at the prospect of entering situations where they believe they will be scrutinized by others. The condition is a distinct illness recognized by the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III), the psychiatric "bible" for mental health professionals and medical insurance companies.

Social phobia is different from the social anxiety we all feel about new situations, such as giving a sales presentation, delivering a speech or performing music before an audience. For most people, these tasks become easier with experience. Indeed, the nervousness may even be beneficial, prompting us to prepare and rehearse so we do our best. But for the social phobic, social exposure often becomes more difficult with repeated efforts. The person may become increasingly aware of a physical symptom, such as a hand tremor, and grow convinced that everyone will see it and know he or she is scared. This conviction magnifies anxiety and generates more shaking, sweating and other physical signs.

Impact on Behavior

Unlike moderate shyness or the fairly common social anxiety, social phobia does not go away by itself. People remain gripped by the irrational fear that they will act in a way that is humiliating, even though they know the fear is excessive. This anxiety disorder takes many forms — fear of speaking or eating in public, fear of using public lavatories, inability to write in the presence of others, terror of attending parties or social functions, and fear of going on dates. The individuals modify their life styles to adjust to their anxiety, which leads to severe restriction in social activity and, often, in occupational activity as well.

In one group of patients that I evaluated, social phobia had prevented the majority from advancing in their careers. About half avoided all social contacts outside the immediate family. More than a third abused alcohol, and some dropped out of school or were unable to work.

The role of social phobia in causing alcoholism may be very significant — and largely unrecognized. In one group of 102 alcoholics, 25 percent of the men and 17 percent of the women could not face social situations without alcohol or medication. An additional 35 percent of the men and 28 percent of the women were borderline social phobics; social settings were extremely stressful to them. Another study found that 39 percent of a group of abstinent alcoholics had suffered from social phobia, and 60 to 70 percent of these socially phobic alcoholics had used alcohol to cope with social anxiety.

Different From Other Anxiety Disorders

It's important to distinguish social phobia from the other anxiety disorders that are also called phobias. Simple phobia is an irrational fear of a particular type of object or situation, such as dogs, spiders, thunder or heights. In contrast, the outstanding fear for social phobics is any situation where they feel they may be singled out for ridicule.

A person with agoraphobia has a dread of

Continued on page 32

Social Phobia: The Shyness That Is an Illness

Social phobia—incapacitating anxiety about social situations—is a common, largely unrecognized cause of alcoholism.

SOCIAL PHOBIA

Continued from page 31

being alone in a public place. Most agoraphobics also suffer from panic disorder, experiencing panic attacks marked by severe, irrational apprehension, dizziness, sweating, pounding heart and a feeling of being suffocated. The underlying fear of such individuals is that they might have a panic attack in a place where escape may be difficult. They are comforted by the presence of a close friend or family member. Social phobics are generally afraid only of situations where they imagine they'll be stared at, and feel most comfortable when alone.

Social phobia is different in another respect: It affects men and women fairly equally, and may even be more common among men. Agoraphobics appear to be overwhelmingly women (75 to 86 percent) — accounting for the "household woman" syndrome in which women are afraid to leave the house. The onset of social

phobia is also likely to be earlier, the first symptoms appearing in adolescence, though its victims do not usually seek treatment until 10 years later. Agoraphobics generally develop symptoms in their mid-twenties and may not seek help until well into their thirties.

How Social Phobia Begins

It is a mystery why these people who very much desire normal social contact suffer incapacitating anxiety that results in a genuine disability. Equally puzzling is why they do not adjust to social situations and become more confident, as most other people do.

One possible cause is an inborn, inherited tendency that is not easily overcome. A Norwegian study found that identical twins were far more likely to have social phobic traits in common than nonidentical twins, who genetically are like ordinary brothers and sisters. Another feature found commonly in people with social phobia is great sensitivity to rejection. This trait often exists in people prone to types of depression. In fact, many social phobics have suffered from depression.

Social phobics may also have a pronounced tendency to produce bodily reactions to uncomfortable situations. In one study, 34 social phobics experienced greater increases in heart rate while talking to a stranger of the opposite sex than 36 claustrophics (who fear closed, narrow places) experienced when confined in a small room. What's more, the social phobics were extremely aware of their accelerated heart rate. In life situations, this awareness tends to add to their anxiety.

Promising Treatments

The major obstacle to helping social phobics is getting them to seek assistance instead of retreating into protective seclusion — which, of course, is not protective since they are generally anguished. Specialized anxiety clinics have begun to make significant therapeutic inroads. Behavior-oriented psychotherapy and medication offer considerable hope for the future.

The various psychotherapeutic approaches employ behavioral programs, often used most successfully in combination.

Relaxation training. People are taught to relax different sets of muscles to eliminate tension. They do this while imagining (or while actually in) threatening social situations.

Cognitive restructuring. Social phobics are made aware of how they sabotage self-confidence with belittling self-messages: "I look like a fool" or "Everyone sees me sweating." They are helped to substitute positive self-messages: "I look very good today" and "My presentation is truly interesting."

Social skills training/desensitization/exposure. These behavioral techniques help people become — as well as *feel* — capable regarding skills in which they feel so deficient. They practice conversational skills with a therapist or a therapy group and deliver talks as if at a staff meeting. Eventually, they engage in "real-life" exercises, such as walking up to a gathering and joining their conversation.

The other promising area of research is with medications. Beta blockers — drugs normally used for high blood pressure, angina and migraines — have been helpful to people who experience social anxiety, such as musicians who suffer stage fright. These drugs may help social phobics also, by suppressing the rapid heart beat, flushing and other signs of anxiety that alarm them and make their distress unmanageable. While some individuals with social phobia appear to have been helped by beta blockers, research findings are too mixed to point to beta blockers as the future remedy.

Other studies with phenelzine, an antidepressant medication of the group called monoamine oxidase inhibitors, find that a considerable percentage of social phobics respond favorably. Phenelzine not only blocks the physical manifestations of anxiety but also may act on the central nervous system to increase confidence. Serious potential side effects, however, are a major obstacle to its use. Promising studies are in progress with other medications, such as benzodiazepine anti-anxiety agents.

The most valuable first step is to appreciate that a young person who is so anxious that he or she avoids participating in social and classroom activities may be suffering from more than shyness. Enlisting help early can save years of pain. Gratifying progress in treatment studies makes involved professionals believe that disabled social phobics may be highly responsive to treatment.

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WEDDING

Patricia Lester Philips and JAMES KEITH CAVINESS were married on Saturday, September 26th in Calvary Episcopal Church, Tarboro. The Rev. Douglas Errick Remer and the Rev. David DeWitt Stanford officiated at the double-ring ceremony. Jerry Cobb ('82) was a groomsman.

The bride is a graduate of Salem College. She is a paralegal with Northern, Blue law firm of Chapel Hill. The bridegroom is a graduate of the University of North Carolina School of Pharmacy (Class of 1982). He is a pharmacist with Rite Aid Pharmacy of Oxford. The couple reside in Chapel Hill.

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Charles D. Pulido, R.Ph.
Vice President
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Owens and Minor/Bellamy Drug and King Drug Company

In the August issue of the Carolina Journal of Pharmacy, a press release was published stating a letter of intent had been signed by Owens & Minor, Inc., Bellamy Drug of Wilmington and King Drug Company of Florence, SC, under which Owens & Minor would acquire the stock of the other two drug wholesalers. After much discussion, negotiations were terminated by mutual consent and the companies ended attempts to complete the transaction.

OBITUARIES

ADDIE BRADSHAW PEGRAM

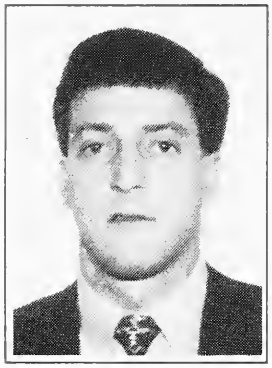
Addie B. Pegram, Cary, died Saturday, October 17, 1987, at the age of 87. A 1922 graduate of the UNC School of Pharmacy, Mrs. Pegram retired in 1965 after 20 years of owning and managing Pegram's Pharmacy in Apex. She received her Fifty Plus Pin from the NCPhA in 1972 and was the first woman so recognized. One of her four daughters, Sarah Pearson, is a pharmacist.

JASPER EDWARD PHILLIPS

Jasper E. (Jack) Phillips, Raleigh, died Tuesday, March 31, 1987, at the age of 74. Phillips was retired and was a former owner of C.O.D. Drug Company in Rocky Mount. He was a graduate of the UNC School of Pharmacy, class of 1933, and worked with Bobbitt's Pharmacy in Winston Salem, Ring Drug Company in High Point and Terminal Drug in Wilson, as well as the I.W. Rose Drug Company in Rocky Mount.

JAMES RICHARD CURTIS

J.R. Curtis, Bessemer City, died Saturday, September 12 after an extended illness. He was 82 years old. He was retired after operating Curtis Pharmacy for 35 years. He had been doing relief work since 1968. Curtis was a native of Guilford County, a graduate of the UNC School of Pharmacy and moved to Bessemer City in 1932. He received his 50 year pin in 1978 from the NCPhA.



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Pharmacist Needed: Pharmacist for Community Pharmacy located in Carrboro. Approximately 45 hours a week with alternate weekends off. Must be willing to live in Chapel Hill or Carrboro telephone area. Send resume to Vaughn Independent Pharmacy, 503 W. Main Street, Carrboro, NC 27510 or call (919) 967-3766.

Pharmacist Wanted: Excellent opportunity to work in independent professional pharmacy (80% Rxs) in large medical complex in Sandhills. No nights or Sundays. Excellent salary and benefits. Box 1119, Pinehurst, NC 28374. (919) 295-2222 (day or night).

Store Fixtures For Sale: Fixtures available after January 31. Complete store fixtures for a 5,000 square foot store in excellent condition including wall, gondolas, end pieces, one or more glass showcases and Rx department. Contact Hamp Langdon, Kernersville at (919) 993-2195.

Pharmacist Wanted: Strong independent in Northeastern North Carolina seeking energetic professional pharmacist. Excellent salary, benefits and working conditions. Contact NCPhA, P.O. Box MAA.

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Pharmacy For Sale: Owner wishes to retire; 25 years same location. 30 miles from Charlotte. Annual Sales: $270,000. Inventory: $85,000. Sales Price: $80,000. Includes inventory, fixtures, etc. $11,000 Accounts Receivable and delivery car. 75% Rx, 40% charge accounts. Reply JNR, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514, or call 1-704-933-6551 after 6 pm.

Pharmacy Wanted: Pharmacist wants to buy an Eastern or Piedmont NC pharmacy. Strictly confidential. If you are interested in selling your pharmacy, contact Box JGM, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

Staff Pharmacist Wanted: Moore Regional Hospital, a 316-bed, acute care facility has an opening for a staff pharmacist. This pharmacy offers unit dose, IV Admixture, chemotherapy, support for C.E. education, patient profile, and a mobile medication service. Moore Regional Hospital is located in Pinehurst, a beautiful part of the Sandhills. Excellent starting salary, on-site Day Care, plus comprehensive benefit package. Contact Cornelia Perry, Vice President of Human Resources, (919) 295-7808, or Robert Beddingfield, Director of Pharmacy, (919) 295-7112 or send resume to: Moore Regional Hospital, Human Resources, P.O. Box 3000, Pinehurst, NC 28374. EOE.

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Continued on page 39

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Continued from page 37

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Clinical-Staff Pharmacist Position: Will be working every 3rd weekend and will have responsibilities in unit dose, IV admixtures, cancer chemotherapy, patient education, nursing inservice, pharmacy newsletter, pharmakinetic dosing, drug use evaluation and other evolving clinical applications. Some advanced training and experience in clinical pharmacy preferred. If interested and qualified, please send resume to: Director of Personnel, Community General Hospital, P.O. Box 789, Thomasville, NC 27360 EOE.

Pharmacist Professional Services/Consultation: Temporary and or Continual. Contact: L. W. Matthews, III, (919) 967-0333 or 929-1783. 1608 Smith Level Road, Chapel Hill, NC 27514.

Professional Pharmacies: Several small prescription-oriented pharmacies are currently available for individual ownership in North Carolina. These opportunities provide the vehicle to practice pharmacy the way you were taught, while offering an attractive income and more time to be with your family. In some of these cases, financing is also available to qualified candidates. For more information write: Jan Patrick, 10121 Paget Drive, St. Louis, MO 63132.

Pharmacists Wanted: We are seeking ambitious, and professional career-minded individuals for pharmacist positions in High Point, Greensboro and Winston Salem, N.C. We offer excellent salary, stock ownership, education subsidy, extensive benefits, retirement plan, 401K tax plan, annual salary merit reviews. "Pure pharmacy setting." If interested, call Lew Thompson 1-800-233-7018 or send resume to: The Kroger Company, Attn: Personnel, P.O. Box 14002, Roanoke, VA 24038. EOE.

Pharmacy-manager needed: We are seeking an ambitious and professional career-minded individual for Pharmacy-manager position in Southeastern North Carolina near the coast. Computerized prescriptions, excellent salary, hospitalization and life insurance, paid vacations. Small professional pharmacy located in the center of a medical complex. Contact Box CDD, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

Staff Pharmacist Wanted: Position at Kings Mountain Hospital. Modern 102-bed facility with computerized unit dosage. Hospital experience preferred, but not necessary. Will consider a May graduate. Contact Jerry McKee at (704) 739-3601 Ext. 472.

Pharmacist Wanted: Pharmacy II position available at Piedmont Correction Center in Salisbury. Rowan County. One year experience. Salary grade; 75. Salary range; 26,892-43,728. Call Sylvia Matthews at (704) 637-1421 Ext. 501 or 507.

Pharmacist Wanted: Director of Pharmacy for 64-bed hospital in Southeastern North Carolina. Excellent hours, salary negotiable, and good fringe benefits. Contact Tom Smart at (919) 582-2026.

Clinical-Staff Pharmacist Position: Located on the beautiful N.C. coast in Morehead City. Some advanced training and experience in clinical pharmacy preferred. Will have responsibilities in unit dose, IV-Ad mixtures, chemotherapy, patient education, nursing inservice, pharmacy newsletter, pharmakinetic dosing, drug evaluation and other evolving clinical applications. If interested and qualified, please send resume to Director of Personnel, Carteret General Hospital, P.O. Drawer 1619, Morehead City, NC 28557 or call Beth Beswick (919) 247-1547. EOE.

Pharmacists Wanted: Farmco Drug Centers have present positions available in Rocky Mount, Elizabeth City and Roanoke Rapids, North Carolina. For more information contact James Thompson at (919) 878-8158.

Continued on page 40

CLASSIFIED

Continued from page 39

Relief Pharmacist: Relief Pharmacist available. Has RV, will travel. Call Robert Lucas at (919) 383-1421.

Pharmacist Owner relocating; Seeking position in community pharmacy (independent or chain). Open to partnership from Statesville and Charlotte area west. Call or write: David de Chester, 546 Uniondale Avenue, NY 11553. (516) 481-0816.

Pharmacist Wanted: Greensboro and trading area. Contact David Cox, Revco Drug Stores at (919) 766-6252.

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Pharmacy for Sale: Owners want to retire. Old established store 30 miles from Raleigh in a small town with one doctor. $250,000 in sales, with an inventory of $50,000. Sales price of $65,000, includes fixtures and equipment. 85% Rx business. Reply to Box POK, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

Pharmacist Wanted: Wanted full-time pharmacist. Western part of the state. Two 10 hour days in two different locations. Three consecutive days off, no Sundays, no nights. Both in resort setting. Contact Jack Alexander, (704) 526-2366.

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Want to Buy: Profitable Drugstore on Contract. Prefer Eastern/Central North Carolina. Would consider other areas of the state and other types of financing with low money down. Reply to PDQ, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

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Pharmacist Wanted: Call Norwood at 259-2676.

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NOVEMBER 1987 VOLUME 67 NUMBER 11

Gregory G. Kergosien, Jr., right, State Government Relations Manager for the Upjohn Company, is shown presenting a commemorative mortar and pestle to Julian E. Upchurch, NCPhA President. The Mortar and Pestle celebrates Upjohn's Centry of pharmaceutical manufacturing.

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THE CAROLINA
JOURNAL of PHARMACY

(USPS 091-280)

NOVEMBER 1987 VOLUME 67 NUMBER 11

CONTENTS

Endowment Fund Dinner 4
NC Pharmacy Tripartite Committee 7
State Board of Pharmacy 13
Census of Pharmacists & Pharmacies 16
Reciprocity Questions Most Often Asked 17
Heart Disease and Diabetes 19
CE Course: Artificial Sweeteners 23
CE Test 29
News About People 33
Classified Advertising 34

ADVERTISERS

APHA 18
Colorcraft 15
Dr. T.C. Smith Co./W.H. King Drug ..... Back Cover
Geer 22
Gene Minton Consulting Services 8
I.C. Systems 10
Jefferson Pilot 2
Justice Drug Company 1
Kendall Drug Company ..... Inside Front Cover
Lilly 30
Marion Laboratories 6
Medi-span 33
Owens & Minor, Inc. ..... Inside Back Cover
Return Goods Manual 36
Upjohn 12
Washington National Insurance Company 14

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ENDOWMENT FUND DINNER RAISES $17,000.00

The First Annual Endowment Fund Dinner held Saturday night, October 17, 1987, at the Kenan Center in Chapel Hill, raised over $17,000.00 for the NCPhA Endowment Fund.

Planned and promoted by the Board of Trustees of the Endowment Fund, the dinner was attended by over fifty pharmacy leaders and spouses from across the state. The one-hundred a plate fund-raiser featured Jonathan C. Peck, Associate Director of the Institute for Alternative Futures, Alexandria, Virginia who spoke on "Pharmacy — Yesterday, Today and Tomorrow." Mr. Peck was introduced by Roy Bussewitz, Federal Governmental Relations

Endowment Fund Dinner. Left to right: Roy Bussewitz, Glaxo, Inc., Milton and Neta Whaley, Jonathan Peck, and Al Mebane. *Photo by Colorcraft.*

Manager, Glaxo, Inc., who sponsored the speaker.

L. Milton Whaley, Chairman of the Board of Trustees of the NCPhA Endowment Fund, was the Master of Ceremonies for the program following the dinner and introduced the special "Endowment Fund Members", persons who had contributed one thousand dollars or more to the Endowment Fund. Those "Endowment Fund Members" are M. Keith Fearing, Jr, Manteo; Howard Q. Ferguson, Randleman; Robert B. Hall, Mocksville; Frances Rader Lena, Dallas, Texas; J. Marshall Sasser, Smithfield; William J. Taylor, Burlington; B.R. Ward, Goldsboro; and L. Milton Whaley, Durham. Special mention was made to Glaxo, Inc. for their sponsorship of the speaker and a five thousand dollar contribution to the Fund. "Endowment Fund Members" are to receive a plaque designed for them, bearing the NCPhA Coat of Arms. In addition, a permanent plaque will be installed in the Institute of Pharmacy in Chapel Hill and each "Endowment Fund Member's" name will be engraved on it.

The evening was an elegant affair in the beautifully appointed Kenan Center, with light music during the reception and dinner provided by Musica, a professional quartet who played the violin, viola, cello and flute. Dinner was catered by Savory Fare, Durham, one of three caterers

permitted to serve at the Kenan Center.

Funds raised by the dinner go into the Endowment Fund of the NCPhA and interest generated by the investment of these monies support special programs and projects of the Association. The principle of the Endowment Fund is not touched, only the interest, and only on authority of the Executive Committee of the NCPhA. Often the upkeep of the Institute of Pharmacy, headquarters of the NCPhA, is financed by proceeds from the Endowment Fund, avoiding increase in membership dues.

Members who attended the Dinner but did not contribute one thousand dollars have their contributions recorded and if, over the years, they accumulate a total of one thousand dollars, they will be recognized as "Endowment Fund Members".

NORTH CAROLINA PHARMACEUTICAL ASSOCIATION ENDOWMENT FUND
Board of Trustees

L. Milton Whaley, *Chairman*
P.O. Box 51099
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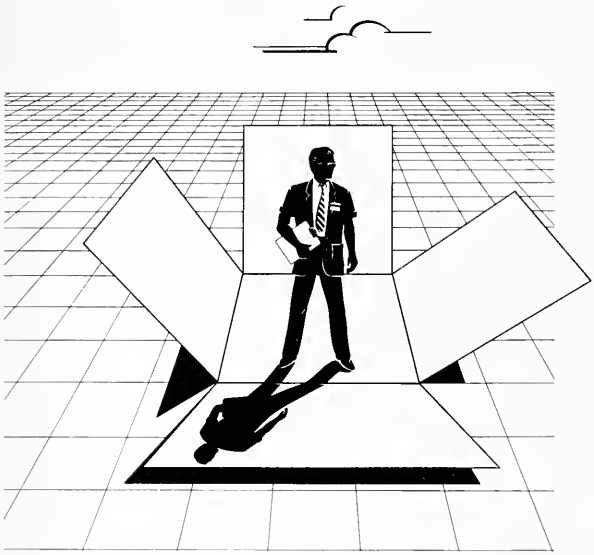
Light entertainment provided by Musica during the Endowment Fund Dinner and Reception.

YOUR ROLE IN HEALTH CARE IS CHANGING.



SO IS OURS.

Pressures for change in the practice of pharmacy are coming from within the profession and from without. As a key member of the health care delivery team, you need to be aware of the economic and professional forces that are driving these changes.

Marion Laboratories believes that the better you're prepared for these changes, the more you'll benefit, both personally and professionally, from this new environment. That's why Marion sponsors annual leadership conferences for new presidents of state pharmacy associations. That's also why Marion recently joined with *Drug Topics* magazine to fund a study on the effects that HMOs and PPOs are having on the practice of pharmacy.

By supporting pharmacy programs like these, Marion hopes to make these changes more understandable and worthwhile for you. It's Marion's way of making our commitment to your profession felt, not just in words, but by positive, useful actions.

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THE NORTH CAROLINA PHARMACY TRIPARTITE COMMITTEE MEETING

Monday, September 14, 1987
Institute of Pharmacy
Chapel Hill, NC

MINUTES

Members Present: Evelyn Lloyd (Chairman), Joe Johnson (Vice Chairman), Steve Caiola (Secretary), Whit Moose, Linda Butler, Pam Joyner, Tom Hughes, Bob Greenwood, George Cocolas

Ex Officio Members Present: David Work, Al Mebane, Fred Eckel, Ron Maddox

Student Guests Present: Monte Yoder, Joe Moose, Ken Krause, Conley McCoy

The meeting was called to order by Chairman Lloyd at 7:10 PM. Ms. Lloyd welcomed new committe members representing the Campbell University School of Pharmacy and the North Carolina Society of Hospital Pharmacists. She also gave a special welcome to the student guests. All members then introduced themselves and stated the organization whom they represented.

Chairman Lloyd mentioned the positive effect upon North Carolina pharmacy created by UNC-CH Schoolof Pharmacy Dean Tom Miya's newspaper article on physician dispensing and Board of Pharmacy Executive Director David Work's article (in *American Pharmacy*) on illiteracy and pharmacists' awareness of the problem. Ms. Lloyd then turned to the student guests and invited them to participate fully in the Committee's deliberations.

1. Approval of the Minutes of the Last Meeting
   On the motion of Whit Moose and the second of George Cocolas, the Committee unanimously approved the minutes of the October 20, 1986 Committee meeting.
2. Reports From the Member Organizations:
   a. *Board of Pharmacy.*
      Executive Director, David Work, explained that the Federal Trade Commission is attempting to get the Board to change its Regulations regarding prescriptions by mail and prescription drop-offs. At present, the Board Regulations prohibit prescription drop-offs. The Board is proposing an amendment to its Regulations to allow prescription deliveries but not permit prescription drop-offs. Hearings will be held in the near future regarding these amendments.

      The Board Regulations prohibit mailing prescriptions where no physician-pharmacist-patient relationship exists. The Board has appointed a committee to study this issue and may introduce legislation regarding the matter at the next session of the General Assembly.

      Whit Moose mentioned Al Mebane's letter to the Board regarding the propriety of a patient picking up prescriptions that have already been filled, but the pharmacy is closed at the time the patient comes to obtain the medication. No regulations or statutes prevent this practice. It is the feeling of the Board that if the State Association would support mandatory pharmacist counseling at the time patients receive their prescriptions, the Board of Pharmacy would consider developing a regulation to support this practice.

      David Work mentioned that the Board is planning a new publication. Starting in October, the regular Board newsletter will be supplemented with a second publication entitled *Report on Invalid Prescriptions (RIP* Sheet). The *RIP* Sheet will cover such items as stolen prescription blanks and give brief reports of current schemes people are using to obtain controlled substances. The *RIP* Sheet will be published on a "prn" basis and will be distributed through wholesalers, at least for the first distribution, to decrease mailing cost.

   b. *The North Carolina Pharmaceutical Association*
      Al Mebane stated that for the past six months, the NCPhA had concentrated its efforts on legislation at the state level. The outcomes had been quite satisfying. Bills regulating physician dispensing, and drug repackaging, the prescription fee for

Continued on page 8

Tripartite Committee

Continued from page 7

Medicaid patients, and the State Employee Health Benefit Program all reflected benefits for pharmacy. At the federal level, the next session of Congress should pass a bill bringing tighter control to drug samples and decreasing the opportunity for drug diversion. Another bill related to physician dispensing for profit will probably not come before the Senate during this session. It may be considered during the next session by Senator Kennedy's Committee. Also on the national scene, a bill regarding Medicare catastrophic illness will most likely include a drug benefit. The exact nature of this benefit is still being debated. A major problem concerns how often drug charges will be updated.

Al then mentioned that the 1988 NCPhA convention will be held in Asheville at the Grove Park Inn and that the 1989 convention will be held at Myrtle Beach in the Myrtle Beach Hilton.

c. *The North Carolina Society of Hospital Pharmacists*

Tom Hughes highlighted the recent Regional Consensus Development Conference held in Charlotte, August 23 to 25. This was a follow-up to the Hilton Head Conference sponsored by the American Society of Hospital Pharmacists during February 1985. The Charlotte Conference consisted of representatives from the North Carolina, South Carolina, and Virginia Societies of Hospital Pharmacists. The conference format called for each state to work individually to develop a consensus regarding goals and objectives for clinical pharmacy practice, to identify barriers to reaching these goals and objectives, and then to identify strategies to overcome these barriers. The outcomes of this Conference will be published in the next NCSHP newsletter. In the near future, a consensus development conference will be conducted for our state's hospital pharmacy a directors. This is a direct attempt to take the outcomes of the regional meeting held in Charlotte down to the next level in the continuum to the grass roots practitioner. The outcomes of the Charlotte meeting also will be distributed to other pharmacy organizations in our state and to the Board of Pharmacy through Bill Adams, who represented the Board at the Charlotte meeting.

Tom also reported that the Board of Pharmaceutical Specialties had denied a request to name "Clinical Pharmacy" as a specialty. The NCSHP had submitted their recommendation to the American Society of Hospital Pharmacists that Clinical Pharmacy not be declared a specialty because, as defined in the submission, Clinical Pharmacy was the base of all pharmacy practice and not a specialty. The NCSHP officers are now reviewing a draft of a proposal to recognize Nutrition Support Pharmacy Practice as a specialty. The NCSHP Board supports this specialty designation and expects the Board of Pharmaceutical Specialties to approve this application. When asked what it generally took to become Board certified, Tom responded that requirements usually involved the doctor of pharmacy degree, residency and/or fellowship, significant experience in practice, and passing the certification examination.

Tom reminded Committe members of the upcoming NCSHP Continuing Education Programs. On September 17, in Greensboro, the Society's SIG on Adult Clinical Pharmacy Practice is sponsoring a program entitled *New Advances in Drug Therapy.* On October 6, 7, and 8, the Society's Annual Carolina Hospital/ Clinical Pharmacy Seminar is being held in Raleigh.

d. *School of Pharmacy, Campbell University —*

Dean Ron Maddox stated that the second class at Campbell University's School of Pharmacy consists of 70 students who were admitted from among 202 applicants. Eighty-five percent of the admissions are North Carolina Residents, 56% being female and 29% having a baccalaureate degree. The overall grade point for the class is 3.2. Enrollment in the School of Pharmacy is now 120, with 111 pre-pharmacy majors also being on campus at Campbell.

In January, Dr. Robert Greenwood and Dr. Alan Richards joined the School's faculty. Dr. Greenwood had been on faculty at the University of Oklahoma College of Pharmacy, and Dr. Richards was in a research position at the Department of Agriculture Research Sevice. Dr. Thomas Wiser joined the faculty in February as Chairman and Professor of Pharmacy Practice. Dr. Wiser had been in practice and teaching for 14 years at the University of Maryland School of Pharmacy. In March, Dr. Edward Soltis completed post-doctoral training at the University of Iowa and joined the Pharmaceutical Science Faculty. In August, two more faculty came to Campbell. Dr. Thomas Holmes left the University of Minnesota College of Pharmacy, where he won three teaching awards, to join the Campbell faculty. Dr. Constance McKenzie came to Campbell from Mercer University where she received post-doctoral training in drug information. Seven other faculty positions are to be filled this year. These include two positions in pharmacology, two in internal medicine, one in geriatrics, one in ambulatory medicine, and one in pharmaceutics.

Immediate plans for the School of Pharmacy include: establishment of a drug information center, completion of research facilities, interfacing of training activities with the University of North Carolina School of Pharmacy, and the continued development of the clerkship program.

e. *School of Pharmacy, University of North Carolina — Chapel Hill*

George Cocolas reported that the School of Pharmacy continues to be one of the larger schools in the country. Its B.S. enrollment in the last three years is 529. The student body composition is 67% female. This year's beginning class has 172 students selected out of an applicant pool of about 350. The class is 74.1% female. Only 30% of the applicants for this class were males.

Three faculty members have retired this year. Mel Chambers retired after 26 years of service to the School. Jack Weir has left after 25 years of service. Dr. Larry Leflor has retired after 17 years because of declining health.

The School is a "big business". Of its budget of over $5 million, $1.3 million was generated by the faculty from

Continued on page 11

Tripartite Committee

Continued from page 9

extramural contracts and grants. Programs such as the Natural Products Laboratory under the supervision of Dr. K. H. Lee, the Radiosynthesis Laboratory under the direction of Dr. Steven Wyrick, and the Health Policy Research Laboratory under the direction of Dr. Jane Osterhaus are some of the in-house programs that provide a spectrum of research activity and a source of financial support to the School.

The School recently published its Strategic Plan after over a year of study. The Plan lists ongoing programs, their immediate and long-term goals, and areas where new projects and programs should be developed. The Strategic Plan identifies a set of charges for the administration and faculty to address to aid in the development of the School and allow for orderly growth into an even stronger educational institution.

The School's B.S. curriculum remains essentially the same. However, the Pharm.D. curriculum has been modified to allow the inclusion of elective courses and provide flexibility for the student who has special interests. There are 29 students in the Pharm.D. program; the beginning class consists of 15 students.

Finally, the School is undergoing some minor renovations to increase the number of small classrooms and provide needed office space for staff. The renovations should be completed by the beginning of Spring Semester, 1988.

3. Election of Officers

   The following committee members were nominated for office and approved by acclamation by the committe:

   Chairman: Joe Johnson (representing the NCPhA) on the motion of Linda Butler and the second of George Cocolas

   Vice Chairman: Pam Joyner (representing the NCSHP) on the motion of Tom Hughes and the second of Al Mebane

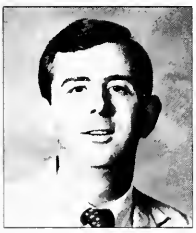
   Secretary: Tom Wiser (representing the School of Pharmacy at Campbell University) on the motion of Whit Moose and the second of Bob Greenwood

4. Adjournment

   Joe Johnson assumed the office of Chairman of the Committee and accepted a motion for adjournment at 8:43 p.m. (on the motion of Fred Eckel and the second of Steve Caiola).

Respectfully submitted,
Stephen M. Caiola

MADDOX PARTICIPATES IN INDUSTRY PROGRAM

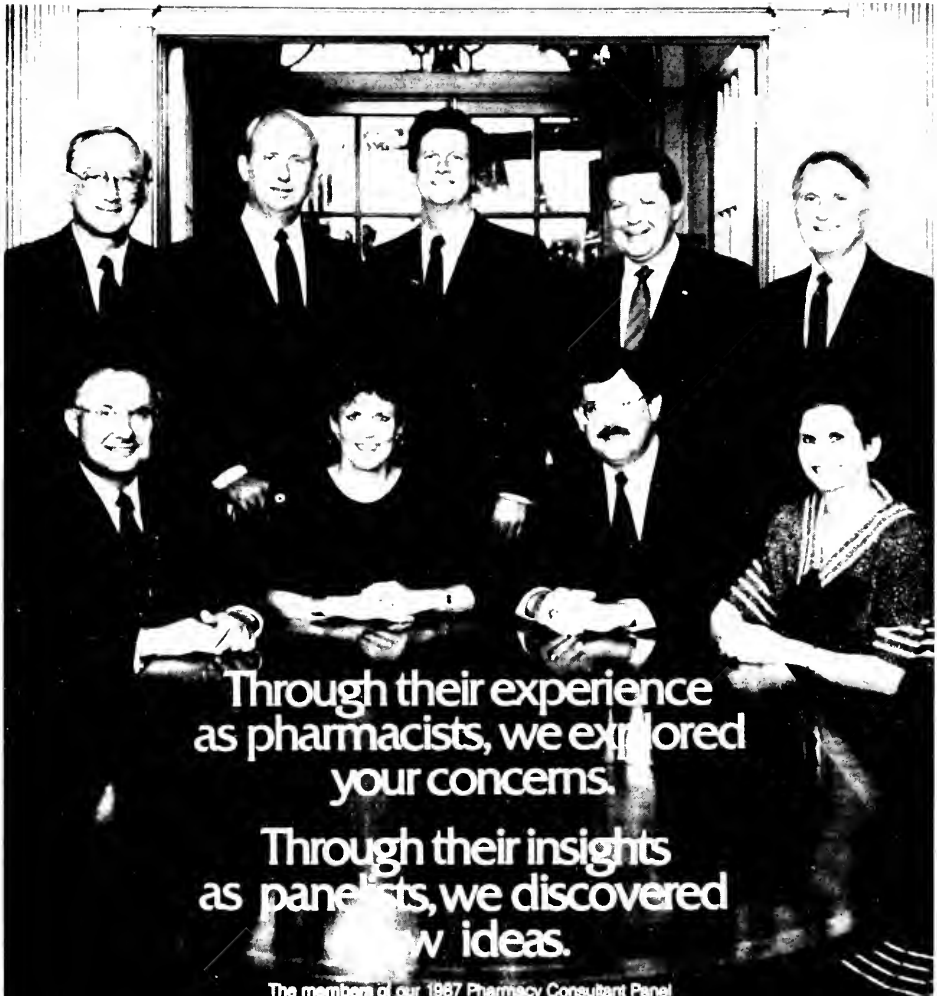


Ronald W. Maddox, Pharm.D., professor and dean of Campbell University School of Pharmacy in North Carolina, recently spent two weeks at Merrell Dow Pharmaceuticals Inc.'s worldwide headquarters in Cincinnati. He was one of two pharmacy school faculty members visiting Merrell Dow through the Pharmaceutical Manufacturers Association's (PMA) Coordinated Industry Program for Pharmacy Faculty.

Created in 1976, the program was established to enable pharmacy faculty members to better understand the current industry by providing an overview of different aspects of a pharmaceutical company's operations. Selected faculty participate in two-week conferences sponsored by individual PMA-member companies. Topics covered can include such areas as sales, manufacturing, research, marketing, product development, legal and regulatory affairs, and quality control.

Dr. Maddox was born and raised in Centre, Alabama. He received his bachelor's degree in Pharmacy in 1969 from Auburn University in Alabama. He subsequently worked as a pharmacist and assistant manager at a pharmacy in Anniston, Alabama. Following two years of active duty as a pharmacy officer at Fort Rucker, Alabama, he entered the Doctor of Pharmacy program at the University of Tennessee. After graduation, he joined the faculty at Mercer University's Southern School of Pharmacy in Atlanta, Georgia, where he taught the first Pharm.D. students and assisted in the development of the Clinical Pharmacy program. After twelve years at Mercer, he decided to accept the challenge of starting a new school of pharmacy

Continued on page 15



Through their experience as pharmacists, we explored your concerns.

Through their insights as panelists, we discovered new ideas.

The members of our 1987 Pharmacy Consultant Panel spoke from personal experience. But their ideas and concerns spanned the breadth of our profession. We thank them for sharing their wisdom, experience and advice. Most of all, we look forward to putting their ideas to work to serve pharmacy professionals better.

Standing Left to Right

Jack H. Cole, Pharmacist
Dean, College of Pharmacy
University of Arizona
Tucson, AZ

Reed Rusing, Pharmacist
Vice President, Hospital Sales
Bergen Brunswig Drug Company
Orange, CA

Thomas M. Ryan, Pharmacist
Vice President, Pharmacy Operations
Consumer Value Stores
Woonsocket, RI

William G. Thien, Pharmacist
Vice President
Health Services & Pharmacy Operations
Walgreen Drug Stores
Deerfield, IL

Darwyn J. Williams, Pharmacist
President
Williams Drugs Inc.
Webster City, IA

Seated Left to Right

John H. Vandel, Pharmacist
President
Vandel Drugs, Inc.
Torrington, WY

Manly Rhudy, Pharmacist
President
Continental Pharmacy, P.A.
Topeka, KS

Thomas R. Temple, Pharmacist
Executive Director
Iowa Pharmacists Association
Des Moines, IA

M. Patricia Lee, Pharmacist
Director of Pharmacy
UCSD Medical Center
San Diego, CA

Upjohn

Not pictured: Bernard Mehl, Pharmacist, Director of Pharmacy Mount Sinai Hospital, New York, NY
John J. Piecora, Jr., Pharmacist, Associate Director Clinical Services Chandler Medical Center, Lexington, KY

STATE BOARD OF PHARMACY

PHARMACY PERMITS ISSUED

Permits Issued 9/14/87
Big Star Pharmacy
Benchmark Sq. S/C
2920 Randleman Rd.
Greensboro

Kerr Drugs
Glenwood Village
1218 Raleigh Rd.
Chapel Hill

Kerr Drugs
Pinecrest Plaza
38 Pinecrest Plaza
Southern Pines

Kroger Sav-On
3650 Raleigh Rd.
Fayetteville

O.P.T.I.O.N. Care, Inc. (LSP)
Baldwin Woods
Whiteville

Revco Discount Drug Center
231 West Mill St.
Columbus Plaza S/C
Columbus

Rite Aid Discount Pharmacy
Old Hickory S/C, Rt. 16
Waxhaw

Permits Issued 9/15/87
Gates Co. Health Dept. Phcy. (LSP)
Easons Crossroads
Gatesville

Permits Issued 9/22/87
Kaiser Permanente
South Sq. Medical Office
3500 Westgate Dr., Suite 705
Durham

Permits Issued 9/29/87
Reidsville Pharmacy
924 South Scales St.
Reidsville

Revco Discount Drug Center
1318 Lees Chapel Rd.
Church Crossing S/C
Greensboro

Permits Issued 10/5/87
Kerr Drug Store
245 Timber Dr. West
Garner

Kerr Drug Store
Westchester Commons
1677 Westchester Dr.
High Point

Phar-Mor
10011 E. Independence
Matthews

Revco Discount Drug Center
Creekside Ctr. S/C
799 West Charlotte Ave.
Mt. Holly

Wal-Mart Pharmacy
1063 Yadkinville Rd.
Mocksville

Wal-Mart Pharmacy
1227 Burkemont Ave.
Morganton

Permits Issued 10/9/87
Drug Emporium
8330 Pineville-Matthews Rd.
Pineville

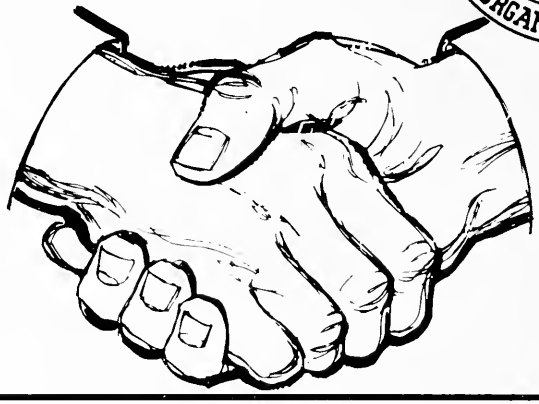
Rite Aid Discount Pharmacy
R #1453 @ 31st St.
Hickory

Continued on page 15

We're not strangers...

Washington National
INSURANCE COMPANY

NORTH CAROLINA PHARMACEUTICAL ASSOCIATION
ORGANIZED 1880



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RETIREMENT AND PROFIT SHARING PLANS

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821 Baxter Street—Suite 316
Charlotte, North Carolina 28202
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Washington National
INSURANCE COMPANY

Evanston, Illinois 60201 ■ A Washington National Corporation Financial Service Company

Permits Issued

Continued from page 13

Permits Issued 10/19/87
Carteret Co. Health Dept. (LSP)
Court House Sq.
Beaufort

Crown Drugs, Inc.
West Market Sq. S/C
708 Salisbury Blvd., West
Salisbury

Drug Emporium
3400 Westgate Dr.
Durham

Kerr Drugs
Norman Crossing
2042 Hwy. 73
Cornelius

Lenox Baker Children's Hospital Phcy. (LSP)
3000 Erwin Rd.
Durham

Pender Co. Health Dept. (LSP)
Burgaw

Pharm-Mor
6270 Glenwood Ave.
Raleigh

Revco Discount Drug Center
1407 West Church St.
Cherryville

Revco Discount Drug Center
Magnolia Plaza
1247 Brukemont Ave.
Morganton

Permits Issued 10/20/87
Chatham Health Dept. (LSP)
Rt. 5, Box 5 (Old Graham Rd.)
Pittsboro

Chatham Co. Health Dept. (LSP)
1105 E. Cardinal St.
Siler City

Lee Co. Health Dept. (LSP)
402 W. Makepeach St.
Sanford

Permits Issued 11/2/87
Farmco Drug Center
8111 Creedmore Rd.
Raleigh

Revco Discount Drug Center
Rt. 7, US Hwy. 74, Ingles S/C
Fairview

Revco Discount Drug Center
College Park Plaza
929 McArthur Rd., Suite 206
Fayetteville

Revco Discount Drug Center
Wal-Mart Plaza
1035 Yadkinville Rd.
Mocksville

Rite Aid Discount Pharmacy
1987 Cotton Grove Rd.
Lexington

Permit Issued 11/10/87
Corner Drug Store, Inc. (T/O)
2 South Main St.
Franklinton

Maddox

Continued from page 11

in his current position at Campbell University.

"I thoroughly enjoyed this unique opportunity to experience operations of a major pharmaceutical company," said Dr. Maddox in commenting on his visit to Merrell Dow. "It was reassuring to see the commitment to quality and excellence in pharmaceutical manufacturing at Merrell Dow."

NORTH CAROLINA BOARD OF PHARMACY
CENSUS OF PHARMACISTS AND PHARMACIES

PHARMACISTS

Total number of pharmacists licensed and on roster September 30, 1986	5,404
Total number of pharmacists residing in North Carolina	4,418
*Inactive	417
Known status for in-state pharmacists	3,894
Breakdown of employment in state:	
In retail community pharmacy (independent)	1,320
In retail community pharmacy (chain stores)	1,507
In hospital pharmacies	800
In nursing homes	8
In teaching and government positions	33
In manufacturing and wholesale	38
In sales and research	67
Other	121
Place of practice unknown	107
Breakdown of age groups of pharmacists residing in NC:	
Under the age of 30	929
In the age group of 30-39	1,548
In the age group of 40-49	850
In the age group of 50-59	600
In the age group of 60-65	244
Over the age of 65	247
*Breakdown of inactive status:	
Retired	112
Unemployed or unknown	305
In-state female pharmacists	1,399
In-state male pharmacists	3,019
Total number of pharmacists who reside out-of-state	986
Out-of-state female pharmacists	375
Out-of-state male pharmacists	611

PHARMACIES

Total number of pharmacy permits on roster September 30, 1986	1,900
Number classified as retail pharmacies (independent)	836
Number classified as retail pharmacies (chain — 4 or more)	754
Number classified as hospital pharmacies	157
Number classified as nursing homes	18
Number classified as others	135

RECIPROCITY QUESTIONS MOST OFTEN ASKED

Reprinted with permission from the National Association of Boards of Pharmacy October 1987 Newsletter.

1. If an applicant reciprocates more than once within a short period of time, how much of the reciprocal application process is repeated by the NABP office?

All of it. There is a need to update information on preliminary applications each time a pharmacist reciprocates.

2. Do you have to give up your license in your original state of licensure when you reciprocate?

No.

3. Do you need to keep your license in your original state of licensure in good standing to keep your reciprocal licenses in good standing?

No.

4. Can a license acquired by score transfer be used as a base for reciprocity?

Yes. Licenses acquired through score transfers are considered licenses by full board examination.

5. Can a license acquired by reciprocity be used as a basis for reciprocity?

No.

6. Can an applicant reciprocate to more than one state at the same time?

Yes — $125/state.

7. Can an applicant reciprocate if he/she has not be actively engaged in the practice of pharmacy?

This depends on individual state requirements. See the NABP Survey of Pharmacy Law.

8. What does an applicant need to do if they have let the license in the original state of licensure lapse? Does NABP maintain the requirements for reinstatement of a license?

If an applicant lets the license in his/her original state of licensure lapse he/she needs to become reinstated in that state. NABP does not maintain the requirements for reinstatement because they vary from state to state and can change at any time.

9. Is internship an important factor in reciprocity?

Only during the first year of practice. If an applicant has not been licensed one full year and doesn't meet internship requirements in a state he/she may not be eligible to transfer licensure.

10. What is the applicant required to provide to NABP to initiate the reciprocal process?

A completed NABP Preliminary Application and $125.00 fee.

11. What is the applicant required to provide to the board to complete the process?

The NABP Official Application with all necessary attachments and information, and appropriate fees.

12. What type of credentials check and character search does the NABP office conduct?

Status of all pharmacy licenses; educational credentials; disciplinary actions taken against any pharmacy licenses; past and present employers to verify employment in pharmacy.

13. Does the NABP office provide information on when the reciprocity hearings are scheduled?

No. We advise applicants to contact the state boards of pharmacy.

14. Does NABP office provide a copy of the individual state laws to the applicant to prepare for the state jurisprudence examination?

No. Contact the state boards of pharmacy.

15. How long does it take to process a reciprocity application? in the NABP office? to complete the paper work?

It takes NABP from four to six weeks to process an application; it will take the applicant approximately two more weeks to complete the requirements for filing an Official Application.

16. Once the NABP Official Application has been issued for one state, can it be changed to use in a different state?

Yes; the application is reviewed again to ensure that the state requirements have been met.

17. What are the time requirements on an Official Application, once it has been issued?

90 days to complete and file the application; up to three time extensions may be granted at $25 per extension; application is null and void after one year.

18. If the applicant does not return the application within the 90 day time requirement, for a time extension, does it become null and void?

Application is null and void after one year. Applicant may file for time extension at any time during the one year period.

19. What type of refund does the applicant receive should they choose not to complete the reciprocity transaction?

25 percent of the $125 NABP fee.

20. What type of refund does the applicant receive if they are rejected by the recipient board of pharmacy?

Continued on page 18

Questions

Continued from page 17

25 percent of the NABP fee.

21. What type of refund does the applicant receive if they are not eligible to reciprocate to the indicated state?

75 percent of the NABP fee.

22. On what basis would an applicant not be eligible to reciprocate to the indicated state?

Does not meet individual state requirements; any disciplinary actions taken against any pharmacy licenses; lapsed license in state of original licensure; not in pharmacy practice for over one year; not licensed in original state of licensure for at least one year; does not meet citizenship requirements; attended a non-accredited educational institution; failure of state jurisprudence examination; inadequate score on licensure examination.

23. Does the NABP office determine whether or not an applicant is eligible for reciprocity?

No.

24. Is an applicant ever rejected by the board, after the NABP recommends that they are eligible for reciprocity? for what reasons?

It is possible, for example, due to unacceptable licensure examination scores, or failure to pass the jurisprudence examination.

25. How does the NABP office know if an applicant has been rejected by the recipient board?

Via a coupon which is attached to the Official Application; the board completes the coupon and forwards it to NABP.

26. What action does the NABP office take in behalf of applicants who have been rejected?

If NABP feels that the applicant has been unjustly rejected they will contact the board office and ask them to reconsider the application.

27. What records are maintained in the NABP office for reciprocal applicants? For how long?

NABP maintains, in hard copy or microfiche, copies of all preliminary applications filed since 1965.

28. What type of information is maintained in the disciplinary clearinghouse?

If any action has been taken against a license; date action was taken; state action was taken in. Type of action and additional details must be obtained through the state board of pharmacy that took action.

29. How many applications are processed through the NABP office each year?

Approximately 4,000.

30. How many applicants who apply for reciprocity are not eligible?

Approximately one percent.

31. How many applicants are rejected at the state level?

Less than two percent.

32. Does NABP maintain information on job availability and a need for pharmacists?

No.

33. Is it true that if you hold a license in the District of Columbia, you can practice anywhere in the United States?

No.

34. Is there reciprocity between the United States and the Canadian Provinces?

No.

35. Are federal employee pharmacists required to reciprocate to a state in order to practice in a federal facility in the State?

No.

HEART DISEASE AND DIABETES: DEADLY LINK UNCOVERED

by William C. Duckworth, M.D.
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Heart disease, as most people know, is the leading cause of death by disease in the United States. It is expected to kill some 540,000 people this year.

But here's another fact — one which all too few people know: Diabetes, together with its complications, is the *third* leading cause of death by disease in this country. With its implications, it will cause the deaths of 300,000 Americans in 1987.

New evidence shows a strong and deadly link between diabetes and heart disease. In fact, atherosclerosis (clogging of the arteries, which can lead to coronary heart disease) is the single most common cause of death in adults with diabetes in the U.S.

- Compared with nondiabetic people, approximately twice as many people with diabetes *have heart conditions.* This ratio comes out even higher when women alone are considered.
- Coronary heart disease *is present* in about 13 percent of diabetic adults and congestive heart failure in about 7 percent.
- Heart disease *is involved in* about 50 to 60 percent of all recorded *deaths* of diabetic adults and in about 15 percent of fatalities among diabetic children.
- The *risk of death* from heart disease in people with diabetes is about twice that among nondiabetic individuals.
- Heart disease due to blocked coronary arteries is the *direct cause* of at least one-third of all deaths occurring in diabetic patients over 40 years of age.
- Diabetic patients who smoke have an even greater risk of heart disease than do nondiabetics who smoke.

Blood Fats Play Role

According to the American Diabetes Association (ADA), most of the risk factors for atherosclerosis and coronary heart disease are much more prevalent in patients with diabetes than in the general population.

Among the most widely studied of these risk factors are alterations in cholesterol brought about by the faulty metabolism that characterizes diabetes. (Insulin deficiencies or flaws in its action inhibit the diabetic body's ability to turn sugar into energy.)

In untreated non-insulin-dependent diabetes, which accounts for about 80 to 90 percent of all diabetes in the U.S., two prominent components of cholesterol may be altered. The proportion of what is called very low density lipoprotein (VLDL) may increase, and the proportion of high density lipoprotein (HDL) may decrease.

High levels of VLDL are suspected of contributing to atherosclerotic heart disease in some individuals. High levels of HDL, on the other hand, appear to *lessen* the risk of heart disease. Small wonder, then, that the diabetic patient who has developed high levels of VLDL and low levels of HDL is at increased risk for heart disease and, of course, for death from heart disease.

Steps That Can Be Taken

The picture is undeniably grim, but not hopeless. Whereas there is no way known to prevent or cure diabetes, ways *are* known to control the risk factors for heart disease — and that is just what the American Diabetes Association is recommending.

Diet and exercise have long been the cornerstone of non-insulin-dependent diabetes therapy. The objective has been to lower the abnormal blood glucose (sugar) levels that result when the body is unable to convert sugar into energy.

The basic diet for people with diabetes calls for a reduction in total fat and an increased proportion of polyunsaturates. It is virtually the same as the diet recommended by the American Heart Association (AHA) for lowering the high cholesterol levels that so often foreshadow impending cardiovascular disease. Of particular importance to the person with diabetes is that the fat-modified diet reduces VLDL concentrations

Continued on page 20

Heart Disease

Continued from page 19

and often can result in increased HDL levels.

Thus, strict compliance with the diet recommended by the ADA can, in many cases, not only bring down the high blood glucose levels that plague diabetic patients, but also forestall the atherosclerotic buildup that can lead to heart disease.

Although both the ADA and AHA emphasize that diets should be developed to serve each individual's specific needs, both recommend diets that restrict total fat intake to less than 30 percent of total calories consumed. Of that 30 percent, less than 10 percent should be saturated fats (such as in dairy products or meat); unsaturated fats (such as vegetable oil) should make up the other 20 percent. (The average American diet is about 40 percent fat.)

The ADA also notes that current evidence suggests high-fiber diets and soluble-fiber supplements are helpful in improving metabolism, lowering total cholesterol levels and decreasing VLDL concentrations. It says an intake of 40 grams of fiber a day (the average daily intake for most adult Americans is around 10 to 30 grams) can be particularly helpful. And more is acceptable for individuals on weight-reducing diets — a matter of special concern in non-insulin-dependent diabetes, which so often is characterized by obesity.

Exercise is an integral part of any weight-reducing program, of course, but the ADA emphasizes that exercise alone, without concurrent caloric restriction, rarely results in significant weight loss. Still, the ADA says, even light exercise can be quite important in controlling both blood glucose and cholesterol levels.

If diet and exercise fail to cut the cholesterol levels to at least 200 milligrams per deciliter of blood, the physician can prescribe cholesterol-lowering agents.

Robert Levy, M.D., the senior associate vice president for health sciences at Columbia University in New York, quotes one projection that says we could lower the heart disease death toll by 100,000 deaths a year if we could lower the average cholesterol level by just 10 percent.

Effective means of cutting the heart disease toll in the diabetic population, as well as in the population as a whole, exist.

It's a goal worth setting our sights on.

WHEN WOULD YOU SUSPECT YOU MIGHT HAVE DIABETES?

by Charles M. Clark, Jr., M.D.
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Could you have diabetes and not know it?

The answer is an unequivocal yes. Of the estimated 11 million people in the United States who have diabetes only six million know it. An additional four to five million have diabetes but haven't yet been diagnosed. All told, that's about 5 percent of the population.

This year, there will be about 13,000 new cases of insulin-dependent diabetes diagnosed in people under the age of 20. Another half million Americans will develop non-insulin-dependent diabetes — and if past trends continue, about 85 percent of them will be over the age of 45.

But since the earliest extant descriptions of diabetes go back some 3,500 years, why is it estimated that there are almost as many undiagnosed cases as diagnosed cases? The answer is that although there are plenty of warning signs of diabetes, they are — for the most part — nonspecific and easily missed, particularly for non-insulin-dependent diabetes, which accounts for 85 to 90 percent of people with diabetes.

Insulin-dependent diabetes is not that difficult to spot, although only a physician can actually diagnose the disease. The major warning signs, usually found in youngsters under the age of 20, are:

- Frequent urination, accompanied by an unusual thirst and the drinking of an excessive amount of fluids.
- Rapid weight loss, with frequent attacks of fatigue, irritability and nausea.
- Extreme hunger.

When those symptoms occur suddenly, a physician *must* be seen at once.

Non-Insulin-Dependent Diabetes

Most Americans with diabetes, however, have the non-insulin-dependent type of disease, and that's harder to find. Usually it develops quite gradually — so gradually, in fact, that many patients are diagnosed only after they have gone to the doctor for treatment of one of the many life-threatening complications of diabetes such as

heart attack, kidney disease or eye problems.

The major warning signs of non-insulin-dependent diabetes may include any of the previously mentioned signs, *or:*

- Easy fatigue.
- Blurred vision or any change in sight.
- A tingling feeling, numbness or pain in legs, feet, fingers or toes.
- Excessive weight.
- Frequent skin infections or itchiness.
- Drowsiness.
- Slow healing of wounds.

If any of those warning signs are evident, a diagnostic test is called for because, while diabetes cannot yet be cured by medical science, it can be controlled by daily insulin injections in insulin-dependent diabetes, and usually by diet and exercise in non-insulin-dependent diabetes.

If you have any of the diabetic symptoms, the American Diabetes Association (ADA) says you should be tested for the disease. And if you have more than one of those signs, a checkup is even more imperative.

One more factor, and a most important one: The ADA says a diabetes screening test is absolutely vital during pregnancy for a woman who has given birth to a baby weighing more than nine pounds.

Actually, the once standard urine test can only hint at diabetes. Now, however, physicians can come up with a highly accurate diagnosis with blood testing, which is usually done after the patient has gone without food for at least eight hours, or directly after a meal or after ingesting a measured amount of glucose (basic sugar). Each test, of course, examines different values.

Diabetes Is Life-Threatening

But most of those warning signs are more discomforting than life-threatening and thus are not a cause for immediate concern. Then why bother to check for diabetes? There are six striking reasons:

1. Diabetes with its complications is the number three cause of death by disease in the U.S.
2. Diabetes is the number one cause of new cases of blindness in Americans between the ages of 20 and 74.
3. More than two million Americans are hospitalized each year because of diabetes.
4. Diabetes decreases life-expectancy approximately one-third, although this decrease can be prevented by treatment. Diabetic patients are leading longer lives these days than they used to.
5. People with diabetes are at a higher risk of heart disease, stroke, kidney failure and severe nerve damage.
6. Diabetes causes 20,000 leg and foot amputations annually as the result of gangrene infections.

Who Should Be Checked for Diabetes?

One in every 20 Americans has diabetes, and picking out those who are at highest risk is not, with the wealth of information we have compiled over the years, as difficult as it might seem.

Four groups of Americans are generally conceded to be at highest risk: those who are overweight, are over the age of 45, have relatives who have had diabetes, and/or women who are pregnant. Some authorities say the probability of getting diabetes doubles with each decade of life and with each 20 percent of excess weight.

In general, all pregnant women and anyone with two or more risk factors should be screened — even without any symptoms.

If there's a history of diabetes in your family, your chances of developing non-insulin-dependent diabetes are quite high. Some studies indicate that if one of your parents plus a grandparent *and* aunt or uncle have had the disease, your chances of developing it are near 85 percent.

There are, of course, other risk factors to be considered:

- Diabetes strikes women nearly twice as often as men.
- Black Americans develop diabetes at double the rate of whites, and black females have the highest diabetes-related death rates.
- Hispanic Americans are five times more prone to develop diabetes than other ethnic groups in the U.S.

There's not much you can do about your genetic makeup, of course, or about your age. There is, however, a lot you can do about your weight — and obesity has long been known to be a major risk factor in non-insulin-dependent diabetes. Proper diet and exercise are the primary treatment approaches although oral medication or even insulin may be required in some cases.

This year the American Diabetes Association,

Continued on page 33

CORRESPONDENCE COURSE

Advising Consumers on Artificial Sweeteners

by

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Goals

The goals of this lesson are to:

1. present the background and important considerations of the discovery of each artificial sweetener;
2. relate artificial sweeteners to sucrose in response to nutritive value;
3. give ideas concerning an eventual remarketing of cyclamate in the U.S.

Objectives

At the conclusion of this lesson, the successful participant should be able to:

1. discuss the nutritive value of each artifical sweetener;
2. relate current information concerning toxicological issues of each artificial sweetener;
3. explain the limitation of procedures used for testing artificial sweeteners for safety;
4. list sugars other than sucrose which are used to sweeten food and drug items;
5. discuss important consumer information needed for correct use of each of the artificial sweeteners.

Artificial sweeteners have been the topic of scientific debate and consumer concern for the past several decades. Scientists and the public are concerned about the safety of the sweeteners; and the scientific community also questions the reliability and appropriateness of the laboratory methodology used to assess the safety of these products.

This month's lesson discusses the history and characteristics of artificial sweeteners, and suggests what the future may hold for each of them. It explains the scientific rationale for the current concerns. And it also offers consumer information on artificial sweeteners in general and discusses aspartame, a recently introduced sweetener, in more detail.

Satisfying America's Sweet Tooth

Humans have sought ways to sweeten their food since earliest times. A cave painting in southern Spain shows an inhabitant stealing honey from a nest of wild bees. References to sugar and honey are commonplace from Biblical times.

Today, Americans continue to love their sweets! Sugar consumption represents an average 16 to 17 percent of Americans' total calories. This amounts to 1.5 gm/kg or 100 to 150 gm/day. Sixty-five percent of this sugar is ingested in processed foods and beverages; the remainder is added at home.

Continued on page 24

Correspondence Course

Continued from page 23

Excess sugar (sucrose) has been medically linked to development of dental caries (cavities), obesity, and hypertriglyceridemia. While sugar does not cause diabetes, it can exacerbate symptoms and intefere with control of the disease. Artificial sweeteners permit Americans to continue to satisfay their craving for sweets while curtailing development of the aforementioned conditions.

The artificial sweeteners differ from one antoher in chemical composition. Each of them also has advantages and disadvantages. The properties of an ideal artificial sweetener are listed in Table 1.

TABLE 1

Properties of an Ideal Artificial Sweetener

The ideal artificial sweetener should be:
Sweeter than sucrose
Colorless
Odorless
Noncarcinogenic
Good tasting
Stable to heat
Soluble in water
Inexpensive
Nontoxic
Metabolized to nontoxic compounds, or excreted unchanged

Ref: O'Brien L, Gelardi RC: *Chemtech* 11:274, 1981

Saccharin

Saccharin, which was discoverd in 1878, was originally employed as an antiseptic and food preservative. It did not gain public acceptance as an artificial sweetener until 1907. It has been the most widely used of all the artificial sweeteners except during the 1950's and 1960's when cyclamates dominated the market. In 1978 Americans consumed six million pounds of saccharin, mostly in soft drinks.

Saccharin sodium is approximately 300 times sweeter than sucrose and contains no calories. It is freely soluble in water (1 gm dissolves in 1.2 ml water), stable at temperatures up to 150°C (302°F), and has an acidic pH of 3.3. Saccharin is not metabolized and is excreted unchanged. Some individuals who use saccharin report a bitter aftertaste.

Canada's Health Protection Branch (similar to the American Food and Drug Administration) first questioned saccharin's safety in 1974. Rats were given massive daily doses of 2,500 mg/kg. As a result, 21 of 200 animals developed bladder tumors, versus only one positive response in 100 control animals.

The study was completed in 1977. FDA responded to it stating, "The findings indicate unequivocally that saccharin causes bladder cancer in animals."

In 1980 a study cosponsored by FDA and the National Cancer Institute investigated the potential problem in human epidemiologic studies. Nearly 9000 saccharin users were found to not be at any greater risk for developing tumors than the general population.

But not all study results were as favorable. The investigation showed that persons who smoked heavily and those who used excessive saccharin (two or more diet colas or six or more packets of artificial sweetener per day) were at greater risk of disease. Women who ingested diet beverages or sugar substitutes at least twice daily were at 60 percent greater risk of developing bladder cancer than women who did not use saccharin.

Impelled by the Delaney Amendment of the Pure Food, Drug and Cosmetic Act (which requires removal from the American market of food additives that cause cancer in animals), Congress quickly enacted a moratorium on the ban. This was largely due to public outcry that persons (e.g., diabetics) needing an artificial sweetener would be left without one. More than 100,000 public comments against the ban were documented.

So that the public would be warned of potential toxicity from using the product, labeling statements were required on each food item that contained saccharin. Another warning was to be posted in each establishment that sold food items containing saccharin.

Canada banned all commercial uses of saccharin, but permitted it to be sold in pharmacies only. It had to bear a warning of its cancer-causing potential.

The Joint Food and Agricultural Organization/World Health Organzaiton (FAO/WHO) Expert Committee on Food Additives recommends a maximum of 2.5 mg/kg/day of potassium or sodium saccharin as a safe intake. It is approved for use in over 80 countries.

Cyclamate

Cyclamate was approved for commercial food

use in 1951. The sodium and potassium salts were later marketed for use as tabletop sweetener under the trade name Sucaryl®.

Cyclamate was reported to be 30 times sweeter than sucrose, less sweet than saccharin, and non-caloric. Sucaryl® was a mixture containing 10 parts cyclamate and 1 part saccharin. The saccharin provided sweetness, while the cyclamate masked the bitter aftertaste.

The product was, therefore, widely used in canned foods, chewing gum and mouthwashes, and quickly became the leading artificial sweetener in America. It dominated the market throughout the 1950's and 1960's; Americans were reportedly consuming 18 million pounds annually in the late 1960's.

Cyclamate had been thoroughly evaluated for toxicity problems prior to its marketing approval and FDA pronounced it safe for use. When levels of approximately 5 gm/day (equivalent to about three quarts of diet soda) are consumed, a laxative adverse effect is possible.

Toxicity studies continued following marketing. While originally reported to be excreted unchanged, subsequent work showed that up to one-third of all humans metabolized it to cyclohexylamine. Cyclohexylamine was a known toxicant capable of causing dermatitis, convulsions and chromosomal damage in animals.

Continued investigation eventually revealed that 12 of 80 rats fed cyclamate and saccharin in a 10:1 ratio (the popular mixture) developed bladder tumors. To balance these studies, however, dozens of other studies revealed that cyclamate did not induce bladder tumor formation. Nevertheless, FDA banned cyclamate from use as a food additive in 1970, again, due to the Delaney Amendment. With this action, the artificial sweetener market once more belonged to saccharin.

There may still be hope for the return of cyclamate to the American marketplace. FDA is reportedly studying new data that substantiate cyclamate's safety. FDA has also re-evaluated the original studies that suggested cyclamates cause cancer in rodents, and reported that the Canadian rat data were in error. It further contended that the strain of rats that responded with tumor growth developed them spontaneously.

The WHO recognizes cyclamates as safe, and recommends an acceptable daily intake of 4 mg/kg. Cyclamate is currently used in over 40 countries.

Aspartame

Aspartame was accidentally discovered in 1965 while scientists searched for potential anti-ulcer drugs. Following extensive safety

Continued on page 26

TABLE 2

Natural Sources of Aspartame Components

Typical Serving	Aspartic Acid	phenylalanine	Methanol
Aspartame	8.5 mg	10.6	2.0 mg
Meat-dairy			
Hamburger 4 oz	1803.0 mg	882.0 mg	—
Chicken 4 oz	2079.0 mg	907.0 mg	—
Egg 1	542.0 mg	323.0 mg	—
Milk 8 oz	528.0 mg	542.0 mg	—
Vegetables			
Spinach 4 oz	246.0 mg	150.0 mg	—
Lima Beans 4 oz	1745.0 mg	1355.0 mg	trace
Soybeans 4 oz	5512.0 mg	2330.0 mg	trace
Tomato Juice 8 oz	291.0 mg	45.0 mg	47.0 mg
Fruit			
Banana 4 oz	134.0 mg	49.0 mg	21.0 mg
Cherries 4 oz	95.0 mg	16.0 mg	20.0 mg
Pear	254.0 mg	13.0 mg	0.04 mg

Source: G. D. Searle and Co., Chicago, IL

Correspondence Course

Continued from page 25

evaluation, it was approved for marketing in 1973.

However, one month later, it was reported that aspartame may cause hypothalmic lesions. FDA, therefore, postponed its introduction date.

Although evidence that aspartame was toxic was not substantiated, the manufacturers of food additives must bear the burden of establishing safety. This marked the beginning of a long investigation that took nearly eight years to complete.

It was finally released in 1981 for sale as a tabletop sweetener and for use in prepared foods such as cold cereals and instant teas, and in 1983 for use in carbonated beverages. It was one of the most thoroughly studied food additives ever to be marketed in the U.S. Today aspartame is sold to food processors as NutraSweet®, and to consumers as Equal®.

Characteristics. Aspartame contains two amino acids, l-aspartic acid and l-phenylanine. The latter is present as its methyl ester. The sweetener is metabolized in the intestine as illustrated in Figure 1.

Both of the amino acids and the methanol are common constituents of many foods as listed in Table 2. A quantity of aspartame equivalent in sweetness to a teaspoon of sugar yields 8.5 mg aspartic acid, 10.6 mg. phenylalanine, and 2 mg methanol. To compare this with food, an eight-ounce serving of milk contains about fifty times this amount of phenylalanine and aspartic acid. A four-ounce banana contains ten times the methanol.

Individually, the components are not sweet. This is not a problem as long as the aspartame is not degraded. Sweetness is detected only while the substance is in contact with the taste buds on the tongue.

Aspartame is 180 to 200 times sweeter than sucrose. Unlike saccharin, it does not cause an aftertaste. It is only slightly water soluble (1 gm dissolves in 100 ml water at 24°C). Solubility increases with decreasing pH and increasing temperature.

Because it is metabolized to amino acids and methanol, a teaspoonful of aspartame has a food value of 4 calories, the same as sucrose. But, because it is also approximately 200 times sweeter than sucrose, aspartame, which is equivalent in sweetness to a teaspoonful of sugar, has 0.1 calories.

The powdered form of aspartame, Equal®, contains lactose as a bulk former. Equal® contains 2 calories per teaspoonful.

Aspartame is unstable in hot foods. It is, therefore, not suitable for use in items that must be cooked or require sterilization.

It decomposes slowly in beverages, the rate determined by the temperature and pH. The shelf life of a can of carbonated beverage to maintain sweetness is approximately one year.

In dry form it is stable at 40°C (104°F) for over

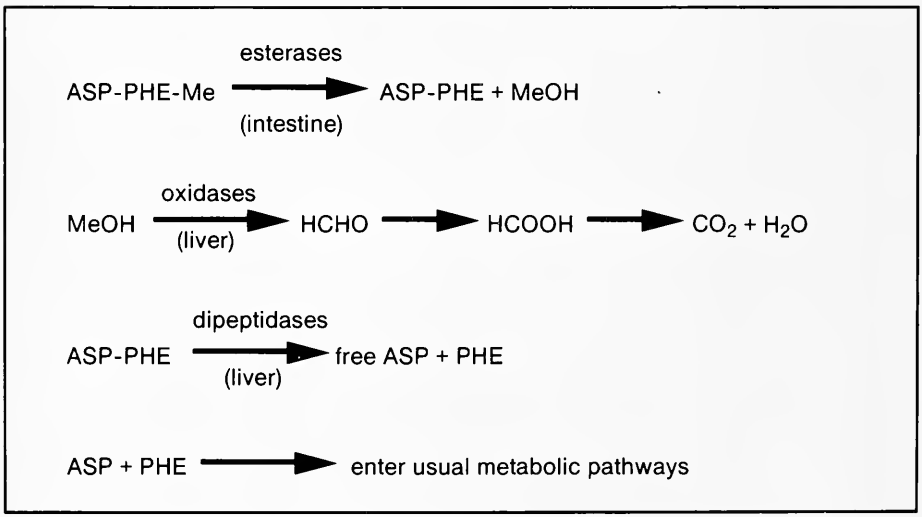

Figure 1. Metabolic pathways of aspartame. ASP: aspartic acid; PHE: phenylalanine; Me: methyl ester; MeOH: methanol; HCHO: formaldehyde; HCOOH: formic acid.

a year. In alkaline solution, a small amount of aspartame may be converted to a cyclic substance called diketopiperazine. This is neither sweet nor toxic.

The FAO/WHO Expert Committee on Food Additives has suggested 40 mg/kg/day as an acceptable daily intake. The projected consumption for Americans is 34 mg/kg/day. Studies have shown that ingesting 34 mg/kg/day does not raise plasma or erythrocyte levels of aspartic acid or phenylalanine above levels reached after consuming an average meal.

Diketopiperazine is usually present in a concentration of 1 percent or less. Its safe daily intake is 7.5 mg/kg.

Specific Safety Concerns. The aspartic acid component of aspartame is partially metabolized to glutamic acid, another dicarboxylic amino acid. Glutamic acid (as monosodium glutamate, MSG) has been shown experimentally to cause hypothalamic brain lesions in young monkeys. Although articles still occasionally associate aspartame with brain damage due to its decomposition to aspartic acid, this correlation remains to be proven. Some authorities report that the issue is moot in that the sweetener has not been proven to cause central nervous system pathology.

Phenylalanine must be avoided by persons with **phenylketonuria**. This familial disorder is rare, occurring in 1 of 15,000 persons. Affected individuals have a deficiency of the enzyme phenylalanine hydroxylase. As a result, blood levels of phenylalanine rise, allowing toxic concentrations to enter the brain. Left untreated, symptoms include mental retardation, epileptic seizures, and chronic dermatitis.

Phenylalanine is reported to harm the fetus when pregnant women who are carriers of phenylketonuria ingest it. There is currently no evidence to support this. Studies have clearly shown that when these women ingest aspartame in doses exceeding average, there is no increase, even transiently, in plasma phenylalanine to toxic levels. If victims restrict intake of phenylalanine , they can lead normal lives. Therefore, foods containing phenylalanine must be so labeled. Equal® tablets and packets both state, "Phenylketonurics: Contains phenylalanine."

Phenylalanine is also purported to block the entrance of tryptophan into brain cells. Tryptophan is the precursor of serotonin (5-hydroxytryptamine), a CNS neurotransmitter. A decrease in CNS serotonin level is associated with behavioral abnormalities. Aspartame's effect on tryptophan or serotonin is unclear. Thus, there is no solid eveidence that decreased serotonin, if it does indeed occur following aspartame ingestion, causes behavioral changes.

Methanol is also suspected to cause potential toxicity problems to the retina. Methanol-induced damage is due primarily to its oxidation products formaldehyde and formic acid, leading to accumulation of formates.

The amount of methanol in aspartame is insignificant. For example, 36 mg aspartame (i.e., one packet of Equal®) contains 3.49 mg methanol. Eight-ounces of tomato juice or a four-ounce banana contain 47 and 21 mg of methanol respectively. When 200 mg/kg aspartame was ingested in one study (approximately six times the expected daily average intake), no formate was found in blood or urine.

Aspartame is also reported to be safe for diabetics. No abnormalities in glucose tolerance have been reported with diabetics ingesting aspartame. It causes no significant elevation in amino acid content of breast milk at normally ingested quantities. It has been shown to be noncarcinogenic.

Other Sweetening Substances

Some sugars other than sucrose are also used as sweetening agents. They include fructose, sorbitol, mannitol, and xylitol. Some of these contain as many calories as sucrose.

Fructose. Frustose is a metabolite of sucrose. It is 1.2 to 2.8 times as sweet as sucrose and has the same caloric value. Fructose is less readily absorbed than glucose and, therfore, causes a less intense insulin response in well controlled diabetics. Cells still require insulin to transport fructose within them. So fructose-based foods are far from ideal for diabetics.

Sorbitol. Sorbitol is 0.5 to 0.7 times as sweet as sucrose. It is reported to be one of the most frequently used sweeteners, commonly found in breath mints and dietetic candies.

Sorbitol is poorly absorbed from the intestine and, therefore, may ferment there. Ingestion of 5 gm can produce gas and bloating. Twenty grams may cause diarrhea. In fact, sorbitol has been proven to be a safe and effective laxative for OTC use.

Consumers reporting gastrointestinal discomfort from an otherwise unidentifiable cause should be asked about their use of products containing sorbitol. A single sorbitol-containing

Continued on page 28

Correspondence Course

Continued from page 27

candy mint may contain as much as 2 mg of sorbitol. Table 3 lists the sorbitol content of various food items.

Mannitol. Mannitol is 0.7 times as sweet as sucrose. It is used to dust chewing gums, and to give bulk to powdered foods.

Xylitol. Xylitol was formerly used in chewing gum to sweeten it and provide a cool sensation in the mouth. It also reportedly reduces the chance for developing dental caries. Toxicological studies show it increases the incidence of bladder stones and adrenal gland tumors in mice fed large doses. Most products that contained xylitol have been voluntarily withdrawn or reformulated by their manufacturers.

New Sweetener. Acesulfame potassium is still under investigation in America but approved for use elsewhere. It is 200 times sweeeter than sugar. Its sponsor has petitioned FDA for approval to market the sweetener for use in chewing gum, dry beverage mixes and foods, and as a tabletop sweetener. It is reported that the substance is not metabolized and contains no calories. It is more stable than aspartame and has not shown any toxicity thus far.

TABLE 3

Sorbitol Content of Various "Sugar-Free" Products and Foods

"Sugar-free" gum	1.3-2.2 g/piece
"Sugar-free" mints	1.7-2.0 g/piece
Pears	4.6 g
Prunes	2.4 g
Peaches	1.0 g
Apple Juice	0.3-0.9 g

Ref: Hyams JS: *Gastroenterology* 84:30, 1983

The Cancer Issue

The artificial sweeteners, including saccharin, cyclamates, and aspartame, have undergone more intensive testing for safety than any other food additive. By law, if any food additive causes cancer in any laboratory animal, at any dose, by any route of administration, the substance cannot be used in food items. This restriction, known as the Delaney Amendment, is essentially an absolute zero risk standard.

However, many experts believe that the clause is now obsolete. They argue that if it were applied to all chemicals, it would ban most of the world's food supply, many drugs, occupations, recreations, and even the air we breathe. But the results of this testing have still failed to answer all questions that have been raised about the compounds' safety.

The primary deficiency that currently exists is the method of testing for potential carcinogenicity. By definition, cancer tests mandated by FDA require testing at the highest tolerated doses. This means that animals are given the maximum dose that causes no overt toxicity over a 13-week trial. These doses are generally much higher than any human could possibly consume. The issue of whether smaller doses, closer to human intake, should also be studied is currently under consideration.

The issue of whether artificial sweeteners cause cancer cannot yet be settled. The unreliability of animal studies has already been mentioned. Furthermore, there might be human subpopulations or persons of certain ages that are susceptible to carcinogenesis. The role of occupation, smoking, alcohol, and consumption of other foods and beverages such as coffee and tea must also be assessed along with artificial sweetener use.

The increased tumor incidence may be too small to detect in a clinical study, but when extrapolated to a general population, it could be quite significant. There may also be biological systems which are even more sensitive to tumor development than the bladder, but not yet thoroughly studied. Artificial sweeteners may cause tumor formation that requires decades to be fully revealed. Their widespread use in large quantities did not actually occur until the early 1960's when the diet cola craze began.

The role of disease factors needs to be assessed. For example, diabetics use more artificial sweeteners on the average than nondiabetics. It is possible that diabetics *per se*, or diabetics who use artificial sweeteners increase the risk for tumor formation.

Finally, another very important variable has not yet been considered. Most animal studies have employed the sodium salt of saccharin or cyclamate, rather than the less soluble base saccharin or cyclamate. Sodium intake in the animals' diets has not been restricted.

Sodium is a known cause of hypertension, and renal and urinary bladder stones. It is not associated with causing cancer, but it damages renal and bladder tissues, perhaps because it serves as the initial stimulus for saccharin-

induced toxicity. Therefore, it should at least be considered and studied.

Overview

Artificial sweeteners have afforded Americans a convenient means of avoiding sucrose and calories. The artificial sweeteners in use today have been thoroughly tested for safety and, when used as directed, are undoubtedly safe. But certain questions concerning their safe use have been raised. Articles reporting new data for and against the use of artificial sweeteners continue to appear in the scientific literature. As is the case with the use of all chemicals, moderation is the best policy.

The ultimate fate of saccharin and cyclamate remains to be determined. Cyclamate appears to have a chance of returning to the American market. Saccharin currently remains on the market under repeated extensions of a Congressional moratorium against the Delaney Amendment restrictions on the sweetener. These restrictions may be lessened to permit its continued availability. On the other hand, if acesulfame potassium continues to remain free of toxicity and is approved for use in the U.S., this may signal the end for saccharin.

Is there value in mixing artificial sweeteners? Perhaps! Detection of sweetness appears to be a function of more than one type of taste bud. For example, the site of detection of sweetness of saccharin is different from that of aspartame. Likewise, cyclamate and saccharin mixed together and tasted seem to have a synergistic effect.

From an economical standpoint for food manufacturers, mixing aspartame and saccharin makes sense. The wholesale cost of saccharin is reported to be less than one-tenth the expense of aspartame. Adding saccharin would permit food prices to remain lower.

Aspartame has been casually associated with several toxic reactions, some potentially serious. However, these charges have not been substantiated. Individuals with phenylketonuria should avoid products containing it.

Consumers should be advised to avoid cooking with aspartame, and adding it to hot foods or beverages that will not be consumed quickly. Some persons report that significant sweetness is lost in the few minutes required for hot cereal or coffee to cool sufficiently for consumption. Up to half of its sweetness may also be lost in a couple of hours when aspartame is added to neutral solutions at room temperature.

Aspartame use will continue to expand as more and more manufacturers and food processors add it to their products. Already FDA is proposing a rule which will permit it to be used as a sweetening agent in drug products.

Correspondence Course Quiz

Artificial Sweeteners

1. Which of the following is reported to be 180 to 200 times sweeter than sucrose?
   a. Aspartame
   b. Cyclamate
   c. Saccharin
   d. Sorbitol
2. All of the following sugars are used to sweeten food and drug products EXCEPT:
   a. fructose.
   b. galactose.
   c. mannitol.
   d. sorbitol.
3. Products containing which of the following must include a warning on their labels advising against use in persons with phenylketonuria?
   a. Asceulfame
   b. Aspartame
   c. Saccharin
   d. Sorbitol
4. Dietary intake of excess sugar has been medically linked to the development of all of the following EXCEPT:
   a. dental cavities.
   b. diabetes.
   c. hypertriglyceridemia.
   d. obesity.
5. Which of the following is metabolized to cyclohexylamine, a substance known to cause dermatitis, convulsions, and chromosomal damage in animals?
   a. Acesulfame
   b. Aspartame
   c. Cyclamate
   d. Saccharin
6. Aspartame is metabolized in the intestine to all of the following EXCEPT:
   a. acesulfame.
   b. aspartic acid.
   c. methanol.
   d. phenylalanine.

Continued on page 32

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DICKINSON'S PHARMACY
by Jim Dickinson

New face of pharmacy. It used to be that folks could tell the best pharmacy in town by the quality of its ham sandwiches. It was a neighborhood institution, inhabited by teenagers.

Only Norman Rockwell can remember those days, and he's dead.

Then the pharmacy came to be a hidey-hole in the back of a big store full of general merchandise, and it was no longer an institution.

The public, which makes and breaks social institutions, a few years ago accorded pharmacists (as distinct from the hidey holes in which they work) No. 2 status behind clergy as its most-trusted professionals.

And then came dispensing physicians, HMOs, mail-order options and the syndrome that's become known as "the graying of America."

Where the average Joe Citizen places pharmacy in all of this is questionable. But when he takes a look, he will surely see that pharmacy has a new face.

It's not the kindly, "old doc" face of Rockwell paintings. It's a businesslike, professional face and it belongs to a highly knowledgeable expert who has been toughened by the years since Rockwell's time.

This face of pharmacy may be white or black (or, increasingly, yellow), young or old, male or female (more likely female, if young).

But whatever it is, it's not likely to be kindly.

Today's pharmacist is under siege, and the face that's shown to the public is likely to show it.

It's "Operation Fight-Back" time, as the boom in PSAO (pharmacy service administrative organization) activity across the country is showing. The number of third-party plan beneficiaries covered by PSAO programs of one kind or another is increasing at a 64% annual rate.

Put another way, 4.3 million Americans get their third-party program prescriptions through a contract that allows freedom-of-choice of participating independent pharmacy, rather than

Continued on page 32

Cut Out or Reproduce and Mail

CONTINUING PHARMACEUTICAL EDUCATION
Artificial Sweeteners

- Attach mailing label from The Carolina Journal of Pharmacy or print your name and address and mail to CE Test, NCPhA, P.O. Box 151, Chapel Hill NC 27514
- Completed answer sheets may be returned on a monthly or less frequent basis for grading.
- **This is a member service.** Non-members responses will not be graded nor CPE credit provided.
- NCPhA will maintain a copy of your completed CPE tests and upon successful completion of each program, will issue a certificate for one (1) hour of board-approved CPE.
- If more than two questions are answered incorrectly, the test is failed. You will be given one opportunity to submit a second answer sheet.

Please circle correct answers

1. a b c d	4. a b c d	7. a b c d
2. a b c d	5. a b c d	8. a b c d
3. a b c d	6 a b c d	9. a b c d
		10. a b c d

Evaluation: Excellent Good Fair Poor

_____
name

_____
address

Dickinson's Pharmacy

Continued from page 31

be locked into a single chain, HMO or mail-order pharmacy.

It isn't unfettered open access to anything, and there are price controls. But at a 64% growth rate, it's evidence of pharmacy's collective fight-back.

Five years ago, the PSAO idea would have been unthinkable. First, every legally-wise person pharmacists consulted said PSAOs would be illegal under the anti-trust laws. Second, it was conventional wisdom that pharmacy was just too plain divided to get its act together for such a concept.

Two Justice Department advisory letters last year changed that, and at a time when many people were gloomily predicting the extinction of independent pharmacy by the year 2001, the PSAO revolution began.

Today there are 53 active PSAOs, the latest being the national RxNet, a subsidiary of the National Association of Retail Druggists. RxNet serves as a national clearing house and marketing organization for the other, affiliated PSAOs in the states.

A central theme of the PSAO, whether national, state or local, is quality of care —hands-on, personal attention by a live pharmacist who knows his or her patients, and who keeps patient profiles for effective drug utilization review.

Many PSAO plans actually pay the pharmacist to *not* dispense, thereby curbing waste (the incentive in capitation plans can be to share surpluses in the pool at the end of the contract term, helping focus pharmacists on the need to question irrational prescribing through the PSAO).

This is, admittedly, controversial. Many pharmacists do not yet belong to PSAOs, and many who do simply hate they very idea of capitation. Certainly, contracts that leave pharmacy with all the risk are not worth signing up for, especially when the underlying data upon which that risk is based have holes in them.

And some pharmacists would rather pay no attention to DUR, and leave all accountability with the prescriber.

Three of those 53 PSAOs have already gone bankrupt, and many more are likely to fail for want of getting (or keeping) a single contract. Pharmacists can be inpatient, and not give their PSAO time to get its feet or prove itself, and that syndrome will kill some PSAOs.

It's early days yet, for the PSAO movement. Its growth has been electric, and the results are not yet in. But a 64% annual growth rate in an environment in which managed health care plans and HMOs are in desperate financial turbulence is a ringing endorsement of the way pharmacy has begun to fight back.

The face of pharmacy has changed.

This feature is presented on a grant from G.D. Searle & Co., in the interests of promoting the open discussion of professional issues in pharmacy. G.D. Searle & Co. accepts no responsiblity for the views expressed herein as they are those of the author and not necessarily those of G.D. Searle & Co.

Correspondence Quiz

Continued from page 29

7. The amendment to the Federal Pure Food, Drug and Cosmetic Act that requires market removal of any food additive that is shown to cause cancer in animals is the:
   a. Delaney Amendment.
   b. Durham-Humphrey Amendment.
   c. Kefauver Amendment.
   d. Proximire Amendment.

8. Which of the following was originally used as an antiseptic and food preservative rather than as an artificial sweetener?
   a. Acesulfame.
   b. Aspartame.
   c. Cyclamate.
   d. Saccharin.

9. After initial approval by FDA, aspartame was withheld from the food additive market for approximately eight years because of a report that it caused which of the following?
   a. Bladder cancer
   b. Diabetes insipidus
   c. Hypothalmic lesions
   d. Peptic ulcer disease

10. Which of the following has the greatest caloric value per usual serving?
    a. Acesulfame
    b. Aspartame
    c. Cyclamate
    d. Saccharin

NEWS ABOUT PEOPLE

WEDDINGS

CATHERINE JANE CHITTY and EUGENE STREET SIMMONS were married on October 3, 1987 at First Baptist Church in New Bern.

The bride and groom are both graduates of the UNC School of Pharmacy (Class of '82 and '84). The bride is a pharmacist at Rite Aid in Asheboro and the bridegroom is a pharmacist at Chatham Hospital in Siler City. The couple live in Siler City.

KIMBERLY DAWN HUDSON and Stephen Ray Long, Jr. were married November 7, 1987 in the South Point Baptist Church in Belmont. The bride is a 1987 graduate of the UNC School of Pharmacy and is employed as pharmacist-manager of Kerr Drug Store in Southern Pines. The groom is an NC State graduate and is employed by Resorts of Pinehurst.

SUSAN ELIZABETH CURRIN and Michael Hughes Hill were married in Oxford Baptist Church Saturday afternoon, November 14, 1987. A 1985 graduate of the UNC School of Pharmacy, the bride is employed by Rite Aid Discount Drug Center. The groom is co-owner of Video to Go in Oxford.

CONGRATULATIONS

Congratulations to **Fred M. Eckel,** Chapel Hill, who was elected Secretary of the Christian Pharmacists Fellowship, International for 1988 and 1989 at the meeting in Atlanta.

Congratulations to **W. Whitaker Moose,** Mount Pleasant, who was elected Third Vice President of NARD at the Annual Convention in Las Vegas.

Durham-Orange — Officers of the Durham-Orange Pharmaceutical Association are Dennis Williams, President; LaRue Dedrick, Secretary-Treasurer; and Betsy Ramsay, Past President.

BIRTHS

JOHN F. WATTS and Susan C. Watts, Taylorsville, announce the birth of Jonathan Clifford on October 31, 1987. Jonathan weighed in at 7 lbs. 15 oz. and his first words were "Go Tar Heels." His dad is a 1977 graduate of the UNC School of Pharmacy.

Diabetes

Continued from page 21

whose more than 700 chapters are scattered across all 50 states, has undertaken a national program to uncover the estimated five million undiagnosed diabetic Americans and to further educate clinicians about the latest advances in treatment. The key lies in *finding* those who have diabetes, by teaching people to spot one of the warning signs of the disease — and then inform his or her doctor. Diabetes can be effectively treated, but only after it is diagnosed.

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PHARMACIST WANTED: We are seeking an ambitious, and professional career-minded individual for a pharmacist position in Greensboro, High Point and Winston-Salem, NC. We offer excellent salary, stock ownership, educational subsidy, extensive benefits, retirement plan, 401K tax plan, annual salary merit reviews. "Pure pharmacy setting." If interested call Lew Thompson 1-800-233-7018 or send resume to: The Kroger Company, Attn: Personnel, PO Box 14002, Roanoke VA 24038. EOE.

Pharmacists Wanted: Farmco Drug Centers have present positions available in Rocky Mount, Elizabeth City, Roanoke Rapids, and Goldsboro North Carolina. For more information call collect Buddy Liebowitz at (804) 858-6063.

STAFF PHARMACIST WANTED: Position at Kings Mountain Hospital. Modern 102-bed facility with computerized unit dosage. Hospital experience preferred but not necessary. Will consider a May graduate. Contact Jerry McKee at (704) 739-3601 Ext. 472.

Want to Buy: Profitable Drugstore on Contract. Prefer Eastern/Central North Carolina. Would consider other areas of the state and other types of financing with low money down. Reply to Box PDQ, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

PHARMACIST: Professional Services/ Consultation — Temporary and/or Continual. Contact: L.W. Matthews at (919) 967-0333 or 929-1783. 1608 Smith Level Road, Chapel Hill, NC 27514.

The Department of Pharmacy Services at Sampson County Memorial Hospital has opportunities available for hospital pharmacy practice. This 145 bed JCAH approved hospital is located within 1 hour drive of the coast. Good working conditions with Nursing and Medical Staff. Excellent starting salary, plus comprehensive benefit package. Activities include complete computerization, unit dose, IV admixture, patient profile and inventory control. Patient care services include: antibiotic monitoring, TPN, Aminoglycoside dosing and support for continuing education. Contact: Patricia Britt, director, Personnel or Jenny Strickland, Director Pharmacy at (919) 592-8511.

Pharmacists Wanted: Greensboro and Greensboro market area. Contact David Cox, Revco Drug Stores, at (919) 766-6252.

PHARMACIST WANTED: Call Norwood at 259-2676.

PHARMACIST NEEDED: Pharmacist for Community Pharmacy located in Carrboro. Approximately 45 hours a week with alternate weekends off. Must be willing to live in Chapel Hill or Carrboro telephone area. Send resume to Vaughn Independent Pharmacy, 503 W. Main Street, Carrboro, NC 27510 or call 919-967-3766.

OLD SODA FOUNTAIN WANTED. Send specifics or call: John Cooper, Mast Store, Box 714, Valle Crucis, NC 28691, (704) 963-65511.

RELIEF PHARMACIST AVAILABLE: Central & Eastern North Carolina. Contact Pharmacy Relief, PO Box 2064, Chapel Hill NC 27515 or call 919-481-1272 evenings.

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Relief Pharmacist Wanted: Relief Pharmacist Available. Has RV, will travel. Call Robert Lucas at (919) 383-1421.

PHARMACIST WANTED: Pharmacist for local independent pharmacy, approximately 45 hours a week with alternate weekends off. Send resume to: Executive Drug Care, P.O. Box 996 Yadkinville NC 27055 or call 1-800-422-0349.

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Continued on page 36

Classifieds

Continued from page 35

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STAFF PHARMACIST — Moore Regional Hospital, a 316-bed, acute care facility has an opening for a staff pharmacist. This pharmacy offers unit dose, IV Admixture, chemotherapy, support for C.E. education, patient profile, and a mobile medication service. Moore Regional Hospital is located in Pinehurst, a beautiful part of the Sandhills. Excellent starting salary, on-site Day Care, plus comprehensive benefit package. Contact Cornelia Perry, Vice President Human Resources, 919-295-7808 or Robert Beddingfield, Director of Pharmacy, 919-295-7112 or send resume to: Moore Regional Hospital, Human Resources, P.O. Box 3000, Pinehurst, NC 28374. EOE.

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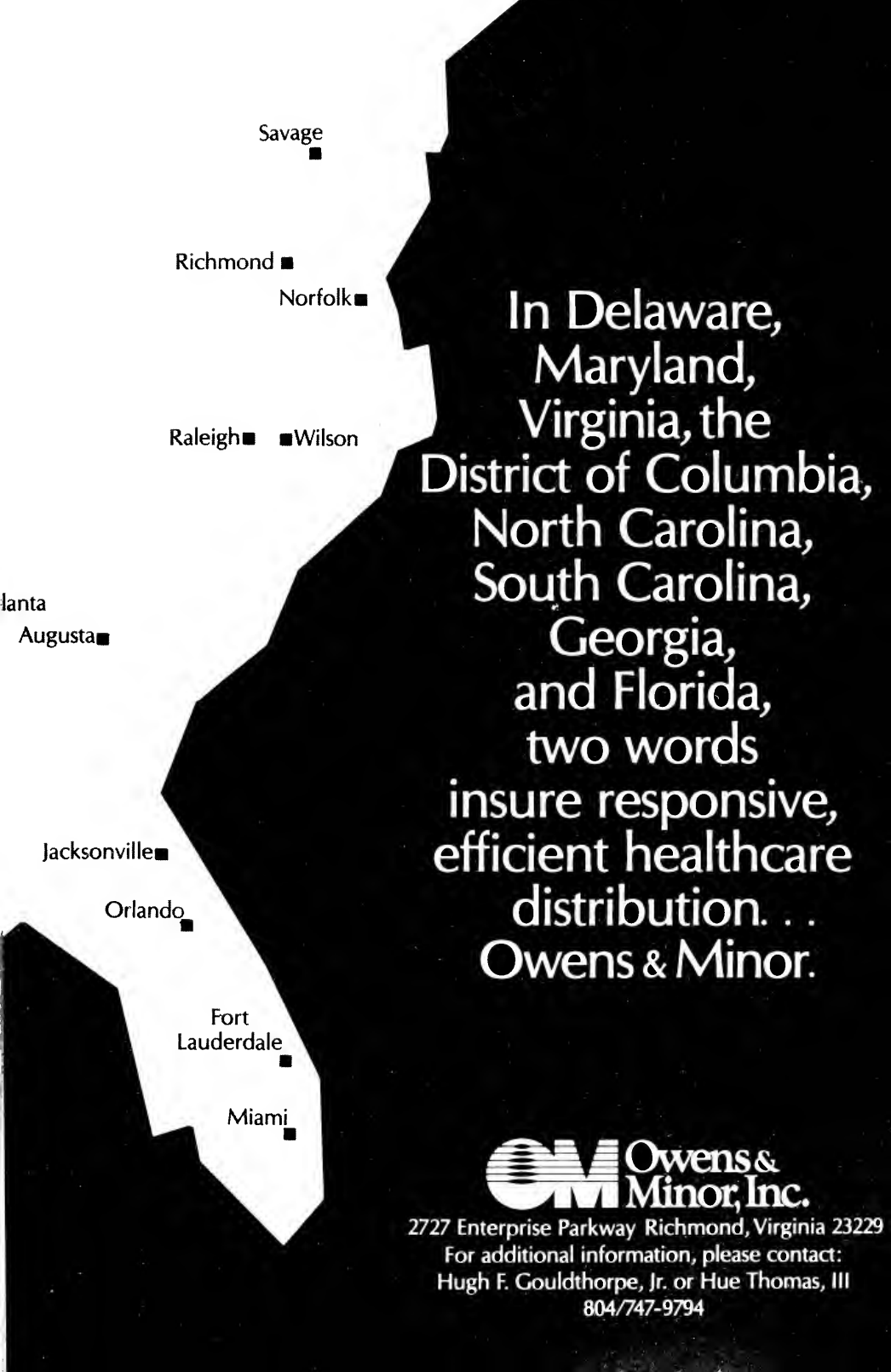

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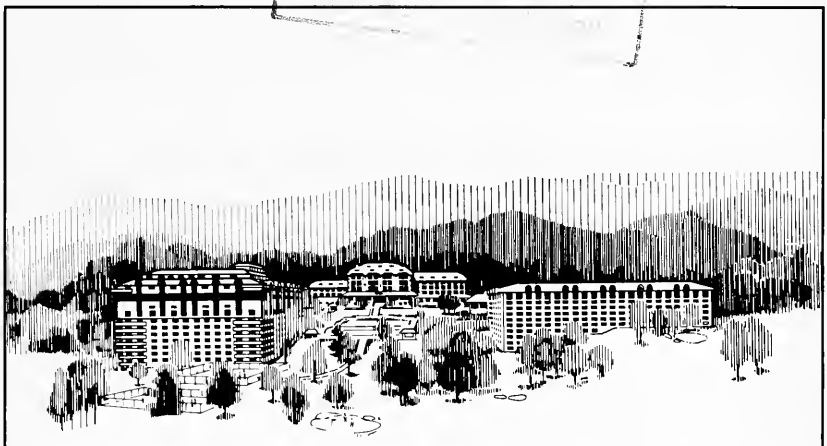

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CONTENTS

Yarborough Selected for APHA Smith Award 5
Mail Order Pharmacy 7
1987 Lilly Digest Statistics 15
Fragmented Sleep — A Health Hazard 17
Cardiovascular Medicines Impact 22
Dickinson's Pharmacy 25
Genes and Viruses 27
Review of Hospital Pharmacy Operations 31
Classified Advertising 34

ADVERTISERS

Colorcraft 14
Dr. T.C. Smith Co./W.H. King Drug ..... Back Cover
Geer Drug 20
Gene Minton Consulting Services 30
Jefferson Pilot 2
Justice Drug Company 1
Kendall Drug Company ..... Inside Front Cover
Lawrence Pharmaceuticals 16
Lilly 6
Medi-Span 8
Owens & Minor, Inc. ..... Inside Back Cover
Savage Laboratories 10
Upjohn 12
USPDI 24
Washington National Insurance Company 28

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Margaret C. Yarborough
Cary, North Carolina

Margaret C. (Peggy) Yarborough, Cary, has been selected by the American Pharmaceutical Association as the 1988 recipient of the Daniel B. Smith Award. The award will be presented at the APHA Annual Meeting and Exhibit in Atlanta, March 12-16, 1988. The award, named after the first president of APHA, is presented annually to recognize a community pharmacist who has devoted significant time and effort to improving the quality of life in the community and is considered an exemplary practitioner.

Yarborough was selected for her work in the field of diabetes and diabetes education. She is the director of the Diabetes Care Center in Cary and has conducted many educational programs for diabetes patients and health care professionals over the years. She is the most sought-after speaker on diabetes and diabetes education in the country.

The American Diabetes Association named her the Outstanding Health Professional in the field of diabetes in 1984. She is the first pharmacist to receive this recognition, in the form of the *Ames Award.* The same year she was chosen as the first recipient of the *Patient Care Award* for excellence in patient education by a pharmacist, given by the Family Practice Residency and the Research and Development Center of St. Mary's Hospital in Kansas City.

A native of Charlotte, Mrs. Yarborough was graduated from the UNC-CH School of Pharmacy in 1966 with a B.S. in Pharmacy and was class valedictorian. She earned her M.S. degree in 1978. Her professional work experience includes Pharmacy Coordinator for Greensboro AHEC; Clinical Assistant Professor of Pharmacy, UNC School of Pharmacy; pharmacist at Rex Hospital, Raleigh; Director of Drug Information at NC Memorial Hospital; and Clinical Pharmacy Specialist in Total Parenteral Nutrition at Washington Hospital, Washington, D.C.

She and her husband, Frank, own and operate Yarborough's Pharmacy as well as the Diabetes Care Center in Cary.

Her involvement and efforts in diabetes education have led to recognition from many

continued on page 6

YARBOROUGH

Continued from page 5

sources. She has written articles for journals and periodicals, including *The Apothecary, Drug Intelligence and Clinical Care, Clinical Pharmacy Handbook, Diabetes Forecast* and *Diabetes Care.* She is a recent appointee to the Eastern Regional Diabetes Advisory Committee, an organization established to work with the Centers for Disease Control to help control diabetes.

She has been awarded a major grant from the National Institutes of Health Small Business Innovation Research Program to develop computer-assisted educational modules for teenage diabetics. These modules will help the young people learn about their disease and how they can be more responsible for their selfcare. The grant is for $427,000 over two years, and she will be assisted by a psychologist, special educational counselor, another diabetes educator and a computer programer.

Honors Peggy has received include the 1986 A.H. Robins "Bowl of Hygeia" for outstanding community service; the 1976 N.C. Society of Hospital Pharmacists "Achievement Award" and "Hospital Pharmacist of the Year Award"; the first University of North Carolina School of Pharmacy Alumni Association "Distinguished Service Award" given in 1986; and the Charles W. Styron Award of the Triangle Chapter of the North Carolina Diabetes Association in 1982.

Her service to the field of diabetes has led her to serve on numerous boards, commissions and panels. She has been president of the Triangle Diabetes Association, on the Therapeutics Committee of the American Diabetes Association, and a member of the Board of Directors of the North Carolina Diabetes Association.

DIABETES FACTS

- Approximately 5.8 million people in the United States have been diagnosed as having diabetes.
- An additional 4 to 5 million people have the disease but have not yet been diagnosed.
- Eight or nine of every ten patients with diabetes have non-insulin-dependent diabetes, which usually can be controlled through a combination of diet, exercise and/or oral antidiabetes agents. The remaining patients have insulin-dependent diabetes and must take insulin shots to stay alive.
- Diabetes and its complications are listed as the third leading cause of death by disease in the U.S., believed to cost Americans more than $13.8 billion annually.

— American Diabetes Association

HEART DISEASE FACTS

- Heart and circulatory disease, the nation's major cause of death, will kill almost one million Americans this year.
- Nearly 540,000 of the deaths will occur among 1.5 million heart attack victims.
- About 350,000 heart attack victims will die before reaching a hospital because the average victim waits three hours before seeking help.
- Heart and circulatory disease will cost the nation an estimated $85.2 billion in 1987.

— American Heart Association

MAIL ORDER PHARMACY: A Real or Perceived Threat to the Economic Future of Retail Pharmacy

by Abraham G. Hartzema, Ph.D., M.S.P.H., and Jan Hirsch Phillips, Ph.D.
Division of Pharmacy Administration, School of Pharmacy, University of North Carolina
Chapel Hill, NC 27514

Current Focus of the Political Discussion on the Distribution of Pharmaceuticals

New distribution channels through which drug products move from the manufacturer to the patient are opening up, it seems, almost every day. Once, the community pharmacist was the exclusive distributive agent for pharmaceuticals. Today, hospitals, HMOs, mail order pharmacies, physicians and others have gained a place in the distribution chain for pharmaceuticals. Increasingly, the competition between the different distribution outlets puts pressure on the profit margins of the community pharmacy.

Of all these new distribution channels, mail order pharmacies and dispensing physician's offices have created the most controversy. Widely publicized attempts to limit physician dispensing on the grounds of conflict of interest, patient safety, etc. have been the topic of recent congressional hearings. However, the movement at the federal level to restrict physician dispensing appears dead, at least until the next session of congress. Congressional attention directed toward the effects of mail order pharmacy services has been less direct and adamant. Mail order pharmacy services as a political issue has received much more focused attention from legislators at the state level than from congress. One reason may be that primary licensing requirements and inspections are regulated at the state level.

Analysis of the Issues Surrounding Mail Order Pharmacies

Mail order pharmacies have awakened an emotional outcry in the pharmacy community. These vocalized emotions have centered around two main issues, namely patient care issues and economic issues. While patient care issues dominate much of the discussion, very real issues relate to the perceived threat of mail order pharmacies to the economic survival of the independent pharmacist.

The issue of mail order pharmacy services, just as physician dispensing, remains unresolved to the satisfaction of the pharmacy profession. Unlike the physician dispensing issue, the mail order pharmacy controversy has not been as clearly defined and attempts to curtail the practice have taken on different forms. Since attempts to limit mail order pharmacy services have been orchestrated by a number of diverse groups, an overall picture of the mail order controversy does not become clear until an analysis of the different arguments is provided. The remainder of this article attempts to put together the arguments by answering the following questions:

Who are these mail order pharmacies?
Why is the mail order pharmacy service industry growing?
How has the profession of pharmacy reacted?
What are the promising strategies to counteract these developments for the pharmacy profession?

Who Are These Mail Order Pharmacies?

Three distinct categories of pharmacy mail order providers can be defined. The first group includes the closed systems represented by government sponsored programs. The oldest and largest of such programs is the Veterans Administration (VA) mail order program, with 40 years in the mail order prescription business. About two thirds of all mail order prescriptions are dispensed by the VA. The VA mail order system was implemented to serve those veterans with service connected disabilities who lived long distances from the VA facilities. Currently, the VA encourages (by mandating) all patients to use the mail order system for refills instead of picking up the prescriptions at VA pharmacies.

The second category of pharmacy mail order systems includes those sponsored by non-profit organizations, most notably the 28-year old American Association of Retired Persons (AARP) pharmacy mail order system and a younger counterpart, Elder Med. AARP Pharmacy Service dispenses about 7½ million prescrip-

continued on page 8

MAIL ORDER PHARMACY

Continued from page 7

tions from its facilities each year. The AARP uses the mail order prescription program as a membership benefit, just as it offers travel and insurance program membership benefits. Patients are not automatically enrolled and individual patients opt to use the program on a voluntary basis. AARP reports that it mails prescription drugs to approximately ten percent of its members. The percentage of mail order prescriptions reimbursed by third party payers is quite low. The majority of prescriptions are paid for out of pocket. This type of mail order program is open to the general public, and is most beneficial for those elderly patients who are heavy users of maintenance prescription drugs.

A third category of mail order providers is composed of for profit mail order companies. The significant growth observed in the mail order prescription business has been propelled by the increased number of for profit mail order firms entering the market and an increase in the number of their enrollees. The largest firm in this category is Medco Containment Services. Medco reports that its mail order pharmacy fills 200,000 prescriptions per week. Medco management estimates that this volume represents 50% of the prescriptions that are filled through the mail in the U.S., excluding the VA and AARP system.

Firms presently entering the market include such diverse entities as drug manufacturers, drug chains and hospitals. Firms entering the market include Baxter-Travenol, through its Preferred Prescription Services; major drug chains such as FAY's Postscript and Thrift Drug Stores; Rush Presbyterian - St. Luke's Medical Center hospitals under the name ARC Ventures; and others, such as Medicare-Glaser Corporation through its Express Script, Inc.

For profit mail order programs contract with large companies such as Ford, Kodak, Amoco, etc., who want to offer a drug benefit program to their employees. Similar contracts are made by Blue Cross and Blue Shield organizations with National Pharmacy Services for federal employees and Washington state employees. The pressure some larger employers have faced to provide enhanced fringe benefits (including out patient drug benefits) in their compensation package has fostered the growth of the for profit firms in the pharmacy mail order business. In some prescription drug benefit packages, employees are required to use mail order services exclusively. Other contracts allow the choice between community pharmacies and mail order pharmacy services. Incentives such as reducing co-payments for the use of mail order pharmacies are usually offered in the latter case.

In summary, there are three distinct groups of mail order programs with different characteristics. These are government sponsored, closed system programs (e.g. VA), mail order programs sponsored by non-profit organizations and offered as member benefits to enrolling individual patients (e.g. AARP), and the for profit mail order programs contracting with larger organizations and companies (e.g. Medco).

Why Is the Mail Order Pharmacy Service Industry Growing?

Changing forces in the health care market place have created a comfortable niche for mail order pharmacy services. The industry is growing in numbers of providers and customers because of: (1) the increasing influence of third party payers in the drug buying decision making chain, (2) increased emphasis on cost containment by all drug purchasers (individuals and organizations) and (3) the increasing demand for a more convenient drug delivery system by influential segments of the U.S. population.

Continued on page 9

MAIL ORDER PHARMACY

Continued from page 8

Third Party Payers. Today, powerful new gatekeepers stand between the pharmaceutical industry and the patient. New decision makers have an economic stake in, and thus, a major influence on drug selection, utilization and the pharmacy distribution channel selected. Although percentage-wise, drugs are still the highest out-of-pocket expenditure, estimates suggest that between 60 and 70% of drug costs are still paid out-of-pocket, an increasingly larger percentage of drug costs is paid by third party payers. Consequently, the nature of the drug market is shifting from a market represented by many individual purchasers of pharmaceutical services to a few large buyers, in economical terms, a more monopsonic market. These few large buyers have a much greater influence on the pharmaceutical distribution system than many individual buyers had in the past.

Mail order pharmacy services are attractive to large buyers who are pressed by labor organizations for increased benefits and realize that providing drug benefits to their employees may raise their company's health care bill only between 5 and 10%. Employees negotiating such benefits are, for example, the postal supervisors, federal employees in Washington State and others. Mail order pharmacy services are attractive because they address the need to serve an often geographically widely dispersed patient population for companies lacking the administrative capacity to deal with many retail outlets. In addition, the low cost image of mail order pharmacies is appealing to corporations and other third parties concerned with providing extra benefits at a reasonable cost.

Cost Savings. Mail order pharmacies extend cost savings not only to large third party payers, but to individual patients as well. Mail order pharmacies are generally located in states with more lenient substitution regulations. Therefore, not surprisingly, the largest cost savings in mail order pharmacies, 30-50% of total cost savings, is achieved by a high level of generic substitution. Other cost savings result from large volume buying power, lower overhead expense, use of supportive personnel and dispensing automations which result in reported pharmacist productivity ranging from 285 to 400 prescriptions per 8 hour workday.

Large third party payers certainly have a vested interest in controlling the cost of providing drug benefits. These new payers also have the scope and force of influence to demand more cost effective drug delivery systems. This pressure from third party payers has created the atmosphere which has allowed the development and growth of for profit mail order firms which account for the majority of the recent growth in the mail order prescription market.

Although the structure and organization of mail order pharmacies allow for considerable cost savings, studies have found that the use of mail order pharmacies does not always translate in cost savings for third party payers. A study by Pharmaceutical Card System, Inc. found that although a 4% program savings was obtained in unit cost, a 9% increase in volume cost was found, causing the average cost of a mail order program to be 5% higher than a community pharmacy program would have been. Ford Motor Company reported that the costs of its mail order program was approximately 1.5 - 1.7% higher than a comparable community pharmacy program would cost.

As would be expected, these results have been challenged on the grounds of methodological errors and restrictive program requirements (e.g. 90 supply minimums and automatic refill mailings). However, these results do indicate that mail order pharmacy services are not an automatic panacea for controlling prescription drug program costs. Even with the cost advantages enjoyed by mail order firms, prudent management of the scope and delivery of benefits is needed for a company to realize a cost savings over the traditional pharmacy distributive system.

Mail order pharmacy services also offer cost savings to individuals. In cases where companies such as GM or Ford have contracted with mail order firms to provide drug benefits, and enrollees are given the choice between mail order and community pharmacies, frequently incentives are offered in the form of lower co-pays for the use of mail order. However, it has been reported that the results of these incentives are negligible; only between one and five percent of the enrollees offered the choice of mail order selected this option. One explanation may be the increasingly common practice of discounting the co-pay for third party prescriptions filled in community pharmacies, thereby reducing the effectiveness of a lowered mail order co-pay. AARP offers the private patient insight into the pricing structure of pharmaceuticals and savings that can be achieved by requesting generic drugs

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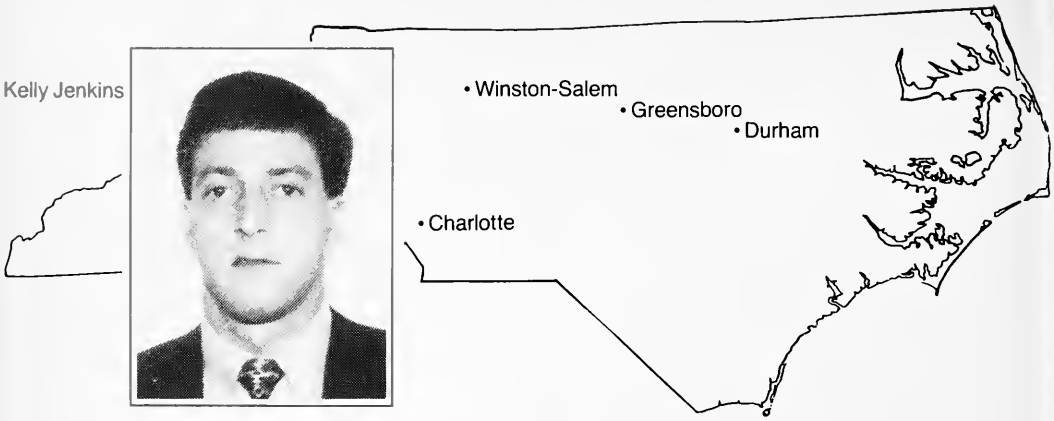

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Bronchodilators: DILOR® ELIXIR (dyphylline) · DILOR® INJECTABLE (dyphylline) · DILOR® TABLETS – 200mg (dyphylline) · DILOR® – 400 TABLETS (dyphylline) · DILOR-G® LIQUID dyphylline 100mg, guaifenesin USP 100mg · DILOR-G® TABLETS dyphylline 200mg, guaifenesin USP 200mg ·
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People and products to serve your needs.

MAIL ORDER PHARMACY

Continued from page 9

to be dispensed by way of regular catalog publications.

Patient Convenience. Patients themselves can decide to use or not to use mail order pharmacies in the programs offered as membership benefits and in the for profit programs which offer a choice between mail order pharmacy services and community pharmacies. Although there are reasons which may explain why patients voluntarily choose mail order pharmacy services, a survey of pharmacy mail order users revealed that the primary motive for mail order use was convenience. Economic motives placed second.

Although pharmacies are more widely distributed than physician offices, both patients in rural areas as well as in inner cities may encounter barriers which limit their access to pharmacies, thereby making mail order pharmacy services more convenient. In the inner cities, patiens may face access problems because of the fear (a psychological barrier) of visiting a downtown pharmacy in an undesirable area. Mail order pharmacy services may be an attractive, more convenient alternative. In the rural areas, the distance or lack of transportation may be the motivating factor for the patient to use mail order pharmacies. These geographical barriers may be even more difficult to overcome for the elderly because of the high prevalence of physical handicaps in this population. The growing proportion of elderly in our society, and a higher level of organization and education among the elderly will provide ample opportunities for mail order pharmacies to promote convenient pharmacy services to this profitable market.

Another reason patients may perceive mail order pharmacy services as more convenient is that the service offers anonymity. Although pharmacists consider patient information as confidential, some patients may not be convinced of this fact and therefore have misgivings about filling their prescriptions at their local pharmacy. Patients may also avoid inquisition by other waiting patients (possible acquaintances) by utilizing mail order pharmacy services. Patient surveys have also indicated that some patients have turned to mail order pharmacies because of a real or perceived differential treatment of private pay and third party pay patients in community pharmacies.

How Has the Profession of Pharmacy Reacted?

Many state pharmacy associations have been actively lobbying against out of state mail order pharmacies dispensing to consumers in their state. The strategies proposed to limit mail order dispensing have generally revolved around three tactics:

1) requiring pharmacists on staff at a mail order pharmacy to be licensed in the state(s) that prescriptions are being mailed to.

2) requiring mail order pharmacies to be fully licensed in the states thay are mailing prescriptions to.

3) applying special restrictions on out of state mail order pharmacies. (e.g. 24 hour WATS line)

Attempts to regulate mail order pharmacies have met with varying degrees of success. Arkansas, Florida, Louisiana, South Dakota, and West Virginia have enacted laws or regulations which control or prohibit mail order pharmacy services. An issue which has hindered widespread adoption of restrictive laws or regulations is the interpretation of the state's authority to impede the constitutional right of interstate commerce. Also at issue is the practice of applying restrictions to out of state mail order pharmacies for the benefit of in state economic concerns, thus restricting competition.

Several other states have received opinions from their attorney general's office regarding the constitutionality of regulating out of state mail order pharmacies. Although some have received favorable rulings, others have not. Even in states where legislation has been passed or favorable opinions registered, the issue remains of how to finance and enforce compliance with regulations in out of state pharmacies. Also, determining

Continued on page 13

Through their experience as pharmacists, we explored your concerns.

Through their insights as panelists, we discovered new ideas.

The members of our 1987 Pharmacy Consultant Panel spoke from personal experience. But their ideas and concerns spanned the breadth of our profession. We thank them for sharing their wisdom, experience and advice. Most of all, we look forward to putting their ideas to work to serve pharmacy professionals better.

Standing Left to Right

Jack R. Cole, Pharmacist
Dean, College of Pharmacy
University of Arizona
Tucson, AZ

Reed Rosing, Pharmacist
Vice President, Hospital Sales
Bergen Brunswig Drug Company
Orange, CA

Thomas M. Ryan, Pharmacist
Vice President, Pharmacy Operations
Consumer Value Stores
Woonsocket, RI

Wilkam G. Thern, Pharmacist
Vice President
Health Services & Pharmacy Operations
Walgreen Drug Stores
Deerfield, IL

Darwyn J. Wilkams, Pharmacist
President
Wilkams Drugs Inc.
Webster City, IA

Seated Left to Right

John H. Vandel, Pharmacist
President
Vandel Drugs, Inc.
Lexington, WY

Manly Rhudy, Pharmacist
President
Continental Pharmacy, P.A.
Topeka, KS

Thomas R. Temple, Pharmacist
Executive Director
Iowa Pharmacists Association
Des Moines, IA

M. Patricia Lee, Pharmacist
Director of Pharmacy
UCSD Medical Center
San Diego, CA

upjohn

Not pictured: Bernard Mehl, Pharmacist, Director of Pharmacy Mount Sinai Hospital, New York, NY
John J. Piccirillo Jr., Pharmacist, Associate Director Clinical Services Chandler Medical Center, Lexington, KY

MAIL ORDER PHARMACY

Continued from page 11

which out of state mail order pharmacies are actually dispensing prescriptions to consumers in a particular state (and therefore should be compliant with that state's regulations) presents a formidable task in and of itself.

At the national level, two pharmacy associations have assumed an active role in curtailing mail order pharmacy services. The Public and Scientific Affairs Policy Committee of the American Pharmaceutical Association (APhA) formulated recommendations which were discussed during the 1987 annual meeting. The four recommendations were:

(1) APhA should adopt the position that a direct and personal pharmacist-patient relationship is as important in providing pharmaceutical services as it is in every other field of health care.

(2) APhA should educate the public and third party payers of benefits of such direct and personal relationships.

(3) APhA should support requirements for all pharmaceutical services to meet practice standards (e.g., labeling, drug product selection, and use of supportive personnel) established by laws and regulations of the patient's state of residence.

(4) APhA should support third party contractual agreement provisions that do not penalize patients by limiting their selection of providers of prescription medication.

Interestingly, the resolutions were not accepted by the House of Delegates. Instead they were sent back to committee for the language to be strengthened.

While APhA's recommendations center around drug therapy monitoring activities, in particular, the flow of information between physicians, patients and pharmacists, NARD's considerations can be summarized as public health concerns, and include the importance of the pharmacist's role in patient health status assessment, patient education, emergency provisions and compliance reinforcement. NARD created a Mail Order Task Force for the purposes of investigating and proposing possible state regulations and legislation, establishing a Mail Order Clearinghouse for collecting information on mail order programs and legislative actions, and distributing an anti-mail order brochure to consumers. Although neither national organization has chosen to focus on economic issues, economic incentives and constraints will most likely feel the current controversy and determine the pace of future growth of the pharmacy mail order industry.

Strategies for Change

Last fall during a conference sponsored by American Druggist and Stuart Pharmaceuticals, Del Konnor, AARP's mail order pharmacy's Vice-president for Professional Affairs, told his audience that mail order pharmacies would increase their current market penetration from less than 3% to a market penetration of 10%. Is the future of community retail pharmacy that dark? It almost seems so, if we look at the lack of success to date of many state pharmacy associations in implementing state regulatory and legislative measures to restrict out of state mail order firms from conducting business in their state.

As stated earlier, the current growth in pharmacy mail order business is not due to an increase in individual patients participating in non-profit systems. Instead, the growth is fostered by companies seeking to increase their employee's health benefit plans by contracting with for-profit pharmacy mail order companies for a prescription drug plan. These companies are looking for *one* claims processor and provider who can serve their geographically dispersed constituency. There being no apparent alternative, mail order pharmacies have necessarily been their choice.

However, community retail pharmacy has developed such an alternative to mail order pharmacy services in the form of Preferred Provider Organizations (PPOs) and Pharmacy Services Administrative Organizations (PSAOs). These organizational structures offer third party payers an attractive alternative to mail order pharmacies. PPOs and PSAOs offer centralized claim processing and widespread geographic coverage just as mail order pharmacy services. PPOs and PSAOs also offer the added advantages of continuity of patient care, provision of acute illness medicines, provision of drugs with limited shelf lives such as liquid medicine or insulin and controlled dispensing of narcotics and other potentially abusive substances. Pharmacy networks are community retail pharmacy's answer to the mail order dilemma.

Many states have formed PSAOs or PPOs and are currently pursuing and servicing contracts with major employers. A national PSAO, RxNET (sponsored by NARD), has begun marketing services to individual PSAOs and expects to begin operation in the latter part of this year. In order for these networks to be successful and become integrated into the health care system, third party payers must view them not only as an

Continued on page 14

MAIL ORDER PHARMACY

Continued from page 13

equivalent alternative to mail order pharmacy services but as an alternative that offers distinct advantages over mail order pharmacy services.

Pharmacy network administrators and individual pharmacists must also address the convenience factor that is attractive to many mail order consumers. Pharmacy services in the community retail setting must be made as accessible as possible to consumers. This may entail the resurrection of delivery services or institution of community pharmacy based mailed prescription services for consumers with special needs. The underlying philosophy of a pharmacy network should be to provide quality professional products and services at a reasonable price in a timely and convenient manner. The added advantages of community based pharmacy services must be clearly communicated and marketed to third party decision makers, large health care buyers, and self-funded benefit plans. More importantly, in order for community based pharmacy services to effectively compete with mail order services, these advantages must be effectively and consistently delivered by each community pharmacist.

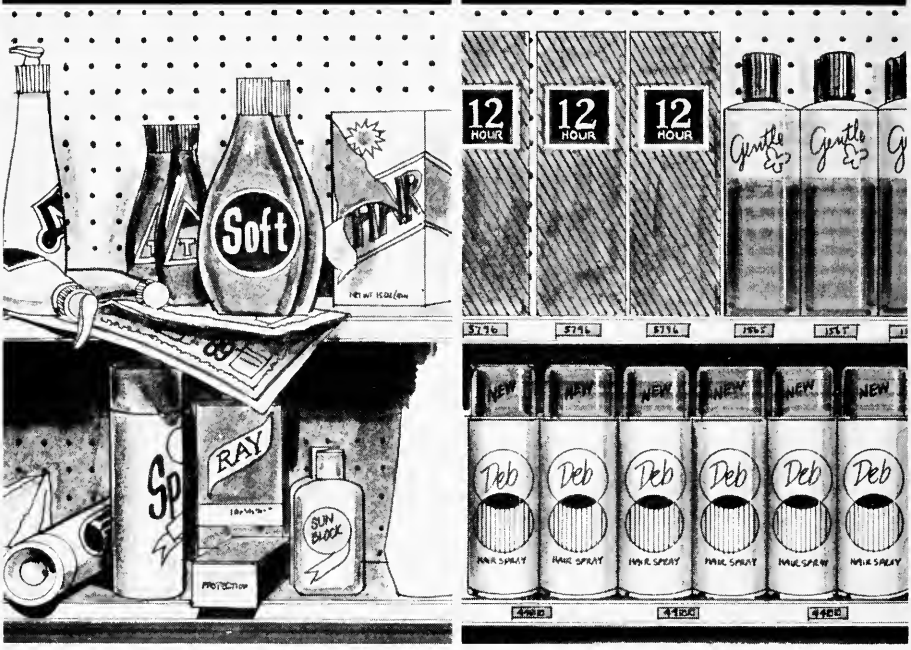
LILLY DIGEST AVERAGES OF SELECTED OPERATING STATISTICS

AVERAGES PER PHARMACY	1986 NORTH CAROLINA (32 Pharmacies)	1986 SOUTH ATLANTIC REGION (162 Pharmacies)	1986 Average UNITED STATES (1,245 Pharmacies)
SALES			
Prescription	$488,528— 71.1%	$401,243— 69.3%	$417,895— 63.9%
Other	198,528— 28.9%	177,442— 30.7%	235,698— 36.1%
Total Sales	$687,056—100.0%	$578,685—100.0%	$653,593—100.0%
COST OF GOODS SOLD	467,612— 68.1%	389,129— 67.2%	443,390— 67.8%
GROSS MARGIN	$219,444— 31.9%	$189,556— 32.8%	$210,203— 32.2%
EXPENSES			
Proprietor's or Manager's Salary	$ 45,145— 6.6%	$ 39,310— 6.8%	$ 38,605— 5.9%
Employees' Wages	67,806— 9.9%	55,652— 9.6%	65,073— 10.0%
Rent	16,141— 2.3%	12,142— 2.1%	15,266— 2.3%
Miscellaneous Operating Expenses	66,903— 9.7%	62,788— 10.9%	73,460— 11.3%
Total Expenses	$195,995— 28.5%	$169,892— 29.4%	$192,404— 29.5%
NET PROFIT (before taxes)	$ 23,449— 3.4%	$ 19,664— 3.4%	$ 17,799— 2.7%
Add proprietor's withdrawal	45,145— 6.6%	39,310— 6.8%	38,605— 5.9%
TOTAL INCOME OF SELF-EMPLOYED PROPRIETOR (before taxes on income or profit)	$ 68,594— 10.0%	$ 58,974— 10.2%	$ 56,404— 8.6%
VALUE OF INVENTORY AT COST AND AS A PERCENT OF SALES			
Prescription	$ 53,085— 10.9%	$ 42,290— 10.5%	$ 43,296— 10.4%
Other	34,706— 17.5%	39,637— 22.3%	50,258— 21.3%
Total Inventory	$ 87,791— 12.8%	$ 81,927— 14.2%	$ 93,554— 14.3%
ANNUAL RATE OF TURNOVER OF INVENTORY	5.4 times	4.9 times	4.8 times
FLOOR AREA*	2,644 sq. ft.	2,552 sq. ft.	2,808 sq. ft.
SALES PER SQUARE FOOT*	$ 259.87	$ 227.56	$ 229.57
RENT PER SQUARE FOOT*	$ 6.10	$ 4.76	$ 5.44
NUMBER OF PRESCRIPTIONS DISPENSED			
New	18,458— 52.9%	15,248— 53.4%	16,080— 55.2%
Renewed	16,432— 47.1%	13,314— 46.6%	13,026— 44.8%
Total Prescriptions	34,890—100.0%	28,562—100.0%	29,106—100.0%
PRESCRIPTION CHARGE	$14.00	$14.05	$14.36
NUMBER OF HOURS PER WEEK			
Pharmacy was open	62 hours	60 hours	61 hours
Worked by proprietor	47 hours	47 hours	48 hours
Worked by employed pharmacist(s)	32 hours	35 hours	36 hours

*Based on averages of pharmacies that reported all data.
**Source: 1987 *Lilly Digest*

Now you don't see it...

Now you do.



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FRAGMENTED SLEEP — A HIDDEN HEALTH HAZARD

By Martin A. Cohn, M.D.
Chief, Sleep Disorders Center
Mount Sinai Medical Center, Miami, Florida;
Assistant Professor of Medicine
University of Miami School of Medicine

Melvile in *Moby Dick* admired seagulls far from land who could sit on turbulent waves and be rocked to sleep, or the sailor sleeping peacefully at sea, oblivious to herds of whales and walruses rushing beneath his pillow.

Many of us aren't so blissfully insulated during sleep. In fact, our sleep is interrupted constantly — by our own coughs, aches, worries that won't quit and a variety of physical conditions. The truly bad news is that these brief awakenings — which the sleeper may not even remember in the morning — can prevent much of the good that sleep accomplishes.

Researchers now tell us that millions of people who may believe they're sleeping eight or even nine hours a night are actually getting considerably less. While we're all awakened ever so slightly perhaps 30 to 50 times each night without being aware of it, some are awakened *hundreds* of times. Scientists find this may leave them as unrested as someone who hasn't slept at all! What's more, fragmented sleep may have dramatic impact on daytime functioning and health.

What Keeps People Awake?

Many in today's world choose to get less than the usual seven to eight hours' sleep. They watch late-night TV or socialize. But others, who aim for their full allotment of sleep, are foiled.

Discontinuous sleep becomes especially common as people age, in part because pauses between breaths grow longer. As the brain senses the demand for oxygen, the individual is momentarily aroused to draw a full breath. From 50 to 150 such little "alarms" may punctuate the sleep of older persons. These can make sleep less restorative — particularly since older people have greater trouble than young people falling back to sleep.

Continued on page 18

Nocturnal myoclonus – involuntary leg kicking during sleep – is one of the sleep disorders that grow more common with age. Though victims may be unaware they have this problem, their sleep is fragmented, leaving them tired and often depressed during the day.

FRAGMENTED SLEEP

Continued from page 17

Halts in breathing especially plague the slumber of people with a condition called *sleep apnea*. A misfunction of the sleep respiratory control center in the brain causes them to periodically stop breathing for 10 seconds to a minute or longer. They may wake up gasping for air 200 or 300 times a night.

People who snore because of an upper airway obstruction also awaken frequently to catch their breath. Since half of all people in their sixties snore regularly, this is a major cause of distrupted sleep.

Heart conditions and cerebrovascular disease — hardening of the arteries supplying blood and oxygen to the brain — can lead to fragmented sleep too. Sluggish circulation causes the brain to emit a distress call for more oxygen. The sleeper becomes somewhat alert while taking deep breaths. this "waking up" is evident on brain wave patterns but may not be recalled by the person. Coughing while asleep, because of respiratory problems and also gastrointestinal disorders in which stomach acids rise to the throat, adds to the multitudes whose sleep is interrupted.

In addition to those who can't breathe freely are people with the sleep disorder *nocturnal myoclonus*. They automatically tense their leg muscles every 30 seconds or so during sleep. The muscle twitching leads to kicking and shifting of the legs plus many brief arousals.

Painful ailments such as arthritis and back problems often disturb sleep. Another painful condition is *fibrositis*, marked by muscle and bone pain as well as fatigue. Individuals with this muscle inflammation experience unusual nervous system activity while sleeping. Furthermore, sleep does not have its usual refreshing effect. The night-long discomfort from any painful affliction can leave a person weary even after nine hours of fitful sleep.

Anxious and depressed individuals comprise another large group who often can't sleep soundly or continuously. Those who are depressed may awaken at 3 A.M. and not recapture sleep until it is almost time to get up for work. Anxiety sufferers may toss and turn.

Fragmented Sleep

Tiredness during the day and deteriorated physical and mental performance are the chief effects of fragmented sleep. At Mount Sinai Hospital, we recently studied sleep apnea patients who go through each day in a fog, often not remembering things they have done. They fill out forms at work but don't recall doing so, or drive somewhere only to wonder how they got there. We all engage in daydreaming and some automatic behavior, but these people are almost sleepwalking. Their reflexes are slower, presenting driving dangers. Red lights may be missed. Inattentiveness can make them appear lazy or indifferent, especially if they're making frequent mistakes. An employer may fire them.

Fragmented sleep often leads to emotional and behavioral disturbances. Irritability and temper outbursts are common, with damaging consequences to personal and professional relationships.

In addition, medical studies support the popular belief that someone who doesn't get enough sleep will be "run down." During sleep, the immune system that protects the body against disease is fortified by production of new protective substances. Without sufficient sleep, people may have less resistance to disease.

People who already are ill may have greater difficulty recovering without sound sleep. Patients in a hospital's intensive care unit (ICU), who are monitored constantly and frequently awakened for tests and examinations, offer a dramatic demonstration of this. These patients are extremely sleep-deprived. They're also deprived of the full supply of hormones responsible for body tissue healing that are produced during deep sleep. Patients may develop psychological problems, informally known in the hospital as "intensive care unit psychosis." But when patients are taken from ICU and allowed three hours of interrupted sleep, they feel better and need smaller amounts of pain-killing narcotics or other medications.

Being well-rested, of course, reduces discomfort and increases people's ability to cope with a wide range of illnesses — from the common cold to arthritis and asthma. Extensive studies in Scandinavia show higher death rates for people who regularly sleep less than six, or more than nine, hours per night. While too little sleep may be a form of stress that aggravates heart disease and other illnesses, other factors actually may be to blame for these early deaths.

Fascinating studies have shown that rats deprived completelyof REM (rapid eye movement) sleep will become ill and die, usually in about a month. The rats studied lost only about

Continued on page 19

FRAGMENTED SLEEP

Continued from page 18

a quarter of total sleep time yet were profoundly affected. REM sleep in humans is when dreaming occurs along with other physical events while the eyes move under closed lids. Implications for humans are not clear; while many sufferers of fragmented sleep tend to be awakened only during REM periods, fortunately they still retain much such sleep.

Studies of people and animals subjected to extensive sleep deprivation may have relevance for those who suffer fragmented sleep — especially in light of findings that a great many sleep interruptions are comparable in effect to total deprivation. For example, epileptic rats have seizures more easily when sleep-deprived than when well-rested. Some people who have *panic disorder* — an anxiety disorder characterized by sudden attacks of irrational terror and accompanying feelings of choking, pounding heart, dizziness and sweating — had these attacks more often on the day after being deprived of a night's sleep.

Getting a Full Night's Sleep

The best recipe for sleeping well is living well — cultivating habits that invite a full night of restful sleep. These include getting to bed and awakening eight or so hours later on a regular schedule, since changing bedtimes can confuse a person's "inner clock"; exercising moderately (but not just before sleep); avoiding naps; refusing caffeine and alcohol in late evening; and refraining from upsetting activities such as violent TV programs or paying bills just before bedtime. When something does interfere with a night's sleep, a strategic nap sometimes can undo the harm and allow people to function as if they had slept well — but, as a rule, it's best not to make a habit of naps.

Light sleepers can use some commonsense measures. If sleep is fragmented by a husband or wife's snoring, the nonsnorer should go to sleep first. A person is not as apt to be awakened from sleep as to be prevented from falling asleep. If exterior noise intrudes, sound-screening curtains, acoustic tiles or earplugs can solve the problem.

Those who suffer fragmented sleep for any of the causes discussed should seek professional help. A personal physician may be able to treat insomnia as well as anxiety and depression, prescribing effective medications as well as providing, or referring the patient for, helpful counseling. Specialized sleep disorders centers can evaluate problems such as sleep apnea, leg muscle spasms and snoring and guide the patients to effective treatments.

Primarily, one should be aware that agitated, fragmented sleep can have serious repercussions. Take the necessary steps to get a good night's sleep on a regular basis. *It's important!*

Inability to get a full night's sleep can lead to drowsiness the next day and perhaps even undermine health.

LIGHTING AS A MERCHANDISING TOOL

by Warren Spear, R.Ph.

We are creatures of light. We wake up with light. We shorten our day when there is less daytime. We are affected in many ways by light. All too often we fail to use light to our advantage as a merchandising tool.

What Messages Do You Send To Your Customer With Your Lighting?

An even, high intensity of a single color light tells the customer that he or she is looking at a commodity retailer. This is the type of lighting generally used by chains in an attempt to **convey a low price image.** Conversely, lowered total foot candles with the use of spot or flood incandescent lights can provide **varying light intensities give the customer the message of specialty items and higher perceived value.** Note the next time you are in a well planned jewelry store or fine specialty shop that track lighting with spots are used to create shadows and emphasize texture. We can use these concepts in community pharmacy. Use track lighting with incandescent spot and/or flood lights to **present** special **products to your customer.** Light can give greater emphasis to gift displays and feature ends. The checkout (where we have our last opportunity sell impulse items) should also have special lighting. Next we find that people are attracted to light. We use this to advantage to bring people into our store. Sidewalks and entry ways should get special care in regard to lighting. Increase light intensity as you get to the entry with greater light inside to **make your store more inviting.** The light people recommend changing all lamps at the same time. A store with many burned out lamps can look shoddy. This shoddy look can occur when individual lamps are changed on an "as need" basis. Most fluorescent lights can do strange things to the colors we see. For true colors consider cool white deluxe (CWX) lamps white provide excellent color rendition simulating a cloudy day, C50 lamps which simulate a partly cloudy day or C75 lamps which simulate north sky light.

Good lighting makes good sense because it helps to put more dollars in the till.

EXECUTIVE DIRECTOR POSITIONS OPEN

The Arizona Pharmacy Association is seeking qualified candidates for the position of Executive Director. This is a full time, salaried position, requiring knowledge of the pharmacy profession and management experience. Prior association management experience helpful. Candidates must demonstrate executive leadership abilities, excellent oral and written communication skills, and knowledge of the political-legislative-regulatory process. Applicants will be interviewed by the Search Committee, which will make recommendations to the association's board of directors for final interview and approval. Qualified applicants should submit resume, references and compensation requirements to:

Randy Stephens
Executive Search Committee
931 E. Stanford Avenue
Gilbert, AZ 85234

Deadline for applications is March 1, 1988.

The Maryland Pharmacists Association is seeking qualified candidates for the position of Executive Director. This is a full time, salaried position requiring association management skills. Knowledge of the pharmacy profession and prior association experience would be helpful. Candidates must demonstrate executive leadership abilities, excellent oral and written communication skills and knowledge of the legislative process.

Applicants will be interviewed by the Search Committee, which will make recommendations to the Association's Board of Trustees for final approval.

Qualified applicants should submit resume, references and compensation requirements to:

Search Committee
650 West Lombard Street
Baltimore, Maryland 21201

Deadline for applications is March 15, 1988 and the position is expected to be filled no later than July 1, 1988.

FUTURE DIRECTIONS IN CARDIOVASCULAR MEDICINE HAVE EXPECTED IMPACT ON LONGEVITY AND QUALITY OF LIFE

The magnitude of the role the artificial heart will play as either a permanent implant or as a bridge to a human heart is still a subject of considerable controversy.

Robert Jarvik, M.D., developer of the Jarvik-7 artificial heart and president of Symbion, Inc., in Salt Lake City, Utah, offers his forecast.

"The artificial heart is both an important research tool and a significant clinical advancement," says Jarvik. "There will never be enough human hearts available to meet the needs of transplant patients. The artificial heart should be developed into a permanently implantable unit."

While this work stirs controversy, other cardiovascular disease research continues.

Cardiovascular Disease in the Age of the Artificial Heart

Diseases of the heart and blood vessels remain the leading cause of death in the United States and Europe. However, in the United States since 1964 there has been a significant decline in the overall death rate. Seventy-six percent of the decline can be attributed to a reduction in cardiovascular disease. (See Figure #1 — Heart Attack and Stroke: Twenty-Year Retrospective.)

"Public education on cardiac risk factors is one element credited for the improved statistics," says Michael DeBakey, M.D., chancellor of Baylor College of Medicine in Houston.

In 1985, the American Heart Association lowered the minimum blood pressure readings to be diagnosed as high blood pressure from 160 over 95 to 140 over 90. The revision significantly increased the number of people considered hypertensive. According to AHA, a rationale for the change is that people with blood pressure readings of 140 over 90 and above are at a higher risk of premature death.

Advances in Diagnosis: Early Detection in the High Risk Patient

The exercise electrocardiogram (EKG), more commonly referred to as the *stress test,* is a frequently used diagnostic tool. But its reliability in detecting the presence of coronary artery disease and predicting heart attack risk has been critically questioned in recent years.

The stress test fared poorly in studies comparing it to *cardiac catheterization* and angiography. Cardiac catheterization involves insertion of a hollow, flexible tube into a peripheral blood vessel and threading it into the heart. In angiography, contrast dye is injected through the catheter into the heart's blood vessels to give a better X-ray view of coronary blood vessels. Tissue samples may be removed for analysis at the same time.

Echocardiography is a noninvasive diagnostic procedure in which ultrasonic waves are directed toward the heart and reflected (echoed) back for visualization. The procedure depicts the structure and motion of the heart. Exercise followed by echocardiography detects cardiac abnormality with 94 percent accuracy.

Magnetic resonance imaging (MRI) and *computerized tomography* (CT) are "high tech" noninvasive diagnostic techniques. Although still experimental, they promise to be exciting developments in cardiac medicine. These devices may enable rapid and reliable image analysis of the heart and arteries. MRI utilizes magnetic fields to construct images of the heart. The CT is a technique in which a series of X-rays is used to create detailed three-dimensional pictures of an organ.

New Drugs Affecting Kidney Regulation of Blood Pressure

Renin, an enzyme produced in the kidney, converts angiotensinogen to angiotensin I. Then angiotensin converting enzyme (ACE) further transforms it to angiotensin II, the most potent vasoconstrictor known. The latter increases arterial blood pressure and stimulates production of aldosterone, a steroid hormone that causes sodium and water retention. Excess activity in the renin/angiotensin system is suspected in many cases of severe hypertension, especially in patients who do not respond to standard antihypertensive medication. Drugs that inhibit renin synthesis are being developed to treat resistant hypertension.

"Renin inhibitors block the key step in

Continued on page 23

FUTURE DIRECTIONS

Continued from page 22

angiotensin II synthesis," says Norman Nelson, Ph.D., associated director of cardiovascular disease research at The Upjohn Company. "We have developed a stable, orally effective renin inhibitor, which is now in early stages of clinical testing."

Already on the market, the ACE inhibitor captopril (Capoten, Squibb) blocks angiotensin II production, leading to a decrease in vasoconstriction and aldosterone release. Because of potentially serious side effects, captopril is reserved for treatment of individuals who do not respond to more moderate therapy, however, in lower doses it may be used for mild hypertension. Newer ACE inhibitors such as enalapril (Vasotec, Merck) with fewer side effects are now available.

Preventing Sudden Cardiac Death with New Anti-Arrhythmic Drugs

Sudden death due to cardiac arrest may be triggered by an episode of a type of arrhythmia known as ventricular fibrillation — an uncoordinated twitching of the ventricles. Standard anti-arrhythmic drugs reduce the heart's electrical excitability and help to control heart rhythm. However, they also reduce cardiac pumping efficiency — an undesirable side effect in a recuperating heart attack victim.

Dissolving Life-Threatening Blood Clots

Tissue-type plasminogen activator (tPA), an enzyme produced by a variety of tissues, dissolves blood clots that block arteries. Tissue plasminogen activator, extracted from human uterine tissue and now also a product of recombinant DNA technology, circulates through the bloodstream until it encounters a blood clot. It then acts specifically on the blood clot to dissolve it.

"Unlike the nonspecific thrombolytic agent streptokinase, tPA acts locally and does not produce as much bleeding," says Desire Collen, M.D., Ph.D., professor of medicine at the University of Leuven in Belgium. "In the European trials, recanalization (opening of clogged artery) occurred in about two-thirds of the heart attack patients treated with tPA."

In the past two years, clinical testing with tPA has demonstrated that it is twice as effective as streptokinase in opening clogged coronary arteries of heart attack victims. A multicenter clinical study under the direction of the U.S. National Heart, Lung and Blood Institute is under way to further evaluate tPA in the treatment of myocardial infarction.

Fish Oil and the Prevention of Coronary Artery Disease

Diets rich in certain polyunsaturated fatty acids, such as eicosapentaenoic acid (EPA) may lower serum cholesterol. Greenland Eskimos who eat oily cold-water fish have a lower incidence of cardiovascular disease than people who eat a dairy- and meat-rich diet. Researchers have concluded that increasing the consumption of cold-water fish, such as salmon, mackerel and sardines, which contain large amounts of EPA, may help to reduce the development of atherosclerosis. EPA inhibits the formation of certain prostaglandins that enhance platelet aggregation (clot formation).

Regulation of Hypertension with Dietary Calcium

Diet plays a pivotal role in blood pressure regulation. The advantages for a significant number of hypertensive patients of restricting dietary sodium and reducing weight are now well established. There may also be an association between reduced calcium intake and elevated blood pressure.

Supplementing daily diets with calcium resulted in a 5 percent lowering of diastolic pressure in young borderline hypertensive women and a 9 percent reduction in a similar group of men. Even small changes in blood pressure can yield big health gains in the general population. Long-term studies are needed, however, before researchers can advise the average person to increase dietary calcium.

An Aging Population: Ethical Dilemmas and New Technologies

Prevention — checking, or at least limiting and slowing the development of atherosclerosis — is the most cost-effective way to combat heart

Continued on page 24

FUTURE DIRECTIONS

Continued from page 23

disease. Reducing risk factors has proved to be a basic component of preventive medicine over the past 20 years. To date, the greatest costs of prevention have involved large public education campaigns. In contrast, new technologies, developed at tremendous cost — have reached comparatively few critically ill individuals.

On what basis, then, do we decide whether or not to support basic research programs? How do we balance long- and short-term costs and benefits? There are still many unanswered questions that must be addressed. For example, scientists do not know why some people can eat all the cholesterol, saturated fat and salt they desire and never develop hypertension or heart disease. Nor do they understand why certain individuals free of known nongenetic risk factors develop heart disease at an early age.

Clearly, heredity plays a role, but how? National statistics do not necessarily have meaning in individual cases, though such cases can help reveal answers to far-reaching problems.

"It is vital that basic research into the causes and treatment of cardiovascular disease continue," concludes Michael DeBakey, M.D., chairman of the department of surgery and chancellor of Baylor College of Medicine in Houston. "In considering the future of cardiovascular medicine, prevention — reducing risk factors — must remain our primary focus."

Likewise, artificial heart research, while having had its share of setbacks, may uncover as yet unknown aspects of human physiology that could have a profound impact on the future of cardiovascular medicine.

To All Kappa Epsilon Collegiate and Alumni Members

The Lambda Chapter at the University of North Carolina at Chapel Hill will be hosting the Province A meeting of the fraternity March 18 through March 20, 1988. Many exciting plans have been made to make this a rewarding and successful convention. Continuing pharmaceutical education (CPE) will also be offered. For more information about registration, contact Lauren Bunting at (919) 967-1758 or Mae Jackson at (919) 846-5799.

DICKINSON'S PHARMACY

by Jim Dickinson

Independents are back. In his best seller, "The Closing of the American Mind," Chicago professor of philosophy Allan Bloom observes "relativist" thinking among the post-1960s graduates.

That means people are unsure of right and wrong any more, and tend to see things as being "relatively" right or wrong. Any opinion is as good (or bad) as any other, and all are of equal importance (or unimportance).

You know what he means when you hear terms like, "different strokes for different folks." Professor Bloom thinks this has come about because in the 1960s the colleges stopped giving everyone enough classical studies in the liberal arts. Without that foundation, some folks don't know how to reason things out properly.

Now, I'll admit that I didn't do any classical studies, either — so when I assert that independents have turned the corner, and that the National Association of Retail Druggists has finally shown itself to be the leading pharmacy organization, there may be a temptation to dismiss this as just another equal, "relativist" opinion.

But think about the evidence.

I saw Robert J. Bolger, retiring president of the National Association of Chain Drug Stores, strolling with his wife, Helen, through the exhibits hall of the National Association of Retail Druggists annual convention in Las Vegas.

It was a record (34% bigger than last year), so I asked the head of all chains what he thought.

"It's impressive," he said, without restraint. It would have been tacky to ask for comparisons, so I left it at that. Other pharmacy convention veterans said the same thing, and did make comparisons.

The spirit among the convention attendees — the youngest-looking NARD crowd I can remember — was buoyant and businesslike. Even the old-timers had a new glow in their eye.

But you don't go by conventions alone. It might have been the glamorous city that drew the crowds — or the weather.

Consider other factors. Consider all the floundering that's been going on in the chains — takeovers, mergers, franchising, leveraged employee buyouts . . .

Consider the unifying effects of dire, common perils like physician dispensing, mail-order pharmacy, HMOs . . .

Consider the rapid aging of the American population — any way you look at it, it has to mean a larger pharmaceutical market "pie" . . .

Consider bad service and shoddy merchandise that came to typify mass merchandisers of every kind, and indeed, consider the drug chains (like Washington-based Dart) that foundered because of their grubbiness.

Consider the NARD's slicker, fatter monthly journal and its 10% membership growth in the last 18 months . . .

Indeed, consider the NARD itself. Slumped in the doldrums just over a decade ago, it has become the most important and effective of the drug-oriented associations — including the corporate-based ones.

(I can hear the "relativists" muttering that that's only my opinion, equal to any other — but that's only their opinion!)

NARD'S recovery is proof of an ancient wisdom — that adversity is the test of strong men, and necessity the mother of invention. By the end of the 70's, government and marketplace oppression had so pressed independents that they gave NARD the energized support most associations can only dream about. Too much was at stake for it to be otherwise.

First, as the official custodian of the pharmacy heritage (the corner drug store), NARD has the important work of keeping the profession's roots alive. The graying Americans who most depend on pharmacy appreciate that, and will see to it that the modern version of the corner drug store (independent-owned and operated) will have patrons wherever it can be found.

Second, NARD has attracted the best staff in the Washington drug association world.

Third, unlike counterparts in many of the Washington associations (not just the pharmacy ones), executive vice president Charles M. West has not succumbed to "Potomac fever." He attributes much of NARD's success to the grassroots and to a strong, involved executive committee and "official family," all of whom work in their own pharmacies for a living.

Fourth, NARD's leadership believes in

Continued on page 26

AN OLD CONTROVERSY OVER TRANSIENT GLOBAL AMNESIA APPEARS SETTLED: RECURRENCE LOW, PROGNOSIS GOOD

Transient global amnesia (TGA), is a self-limited disorder, characterized by a sudden loss of memory of recent events and a transient inability to retain new information. (TGA victims do not forget their identities.) The basic message from a new study is if you suffer from TGA, you can probably forget about any potential complications.

Most investigators agree that episodes of TGA are caused by transient ischemic attacks (temporary oxygen deficiency in certain regions of the brain). But there has been a long-standing difference of opinion about the seriousness of TGA. Some physicians have reported that it carries a high risk of subsequent mini-strokes as well as a high incidence of more complicated stroke or mental deterioration. Others consider it an essentially benign condition with little subsequent risk.

According to a multicenter Danish study, the latter assessment is more likely. A report in the *Archives of Neurology* says TGA is unrelated to cerebrovascular disease in general. Although it can recur, the risk of recurrence is very low. At least, that's true with "pure" TGA. When it occurs in combination with a major neurological deficit, the prognosis is much grimmer.

This study of 74 patients over a follow-up period ranging from seven months to 18 years showed that if no other neurological deficit is present, the problem is basically a benign one, and full recovery can be expected.

Previously, four cited studies had warned of dire consequences following transient global amnesia. But four others concluded it was not a serious problem. Why the discrepancy?

Probably, the investigators in this study speculate, because the earlier studies were quite small, and some of them had included patients with associated major neurological complications.

"The Prognosis of Transient Global Amnesia," Hans-H. Hinge, M.D., et al., Department of Neurology, Aarhus University Hospital, Hellerup, Denmark, Archives of Neurology, 43:6, July 1986, pp. 673-676.

DICKINSON'S PHARMACY

Continued from page 25

reaching reach out to the grassroots pharmacist. NARD now has affiliations with 49 state associations, plus the District of Columbia and Puerto Rico — and NARD's annual legislative conference in Washington brings the grassroots pharmacy interests of state associations to the Capitol for political networking of bread-and-butter pharmacy issues.

"We will be doing more with the states in 1988," West says. "We've just been through a heavy year with burning issues in Washington, and while we're not turning down the flame on those issues, we expect to expand our activities with the states. Our first priority there will be to assure RxNet's success."

West's "burning issues," obviously, are dispensing physicians and mail-order pharmacies championed by ideological fanatics at the Federal Trade Commission who have forgotten what America is all about (they could do with a dose of Allan Bloom).

This column is not meant to sing the praises of one "relativist" association over others to which it is equal, but to observe that the independents' association currently has made itself not equal.

Above all, the discussion is meant to honestly reinforce the welcome news that independents are back.

To West, their re-emergence responds to a rising public demand for service, and it is in the marketplace — once the competitive playing-field is leveled (for example, by eliminating bribes to abandon neighborhood pharmacies) — that service will triumph on its own merits.

That isn't good news just for pharmacy and its unequal heritage. It's good news for America as well.

This feature is presented on a grant from G.D. Searle & Co., in the interests of promoting the open discussion of professional issues in pharmacy. G.D. Searle & Co. accepts no responsibility for the views expressed herein as they are those of the author and not necessarily those of G.D. Searle & Co.

GENES AND VIRUSES — How Are They Linked to Cancer?

Cancer starts with one lone cell. Just what it is that transforms a healthy cell into a cancer cell has been the subject of increasingly promising research in recent years.

Genes That Cause Cancer

Several different genes that appear to play a key role in the formation of tumors have now been isolated from the DNA of human tumor cells. These genes are called *oncogenes*. Oncogenes are very different from each other in terms of structure, location and function. What they have in common is that they all arise from the normal genes present in all healthy cells.

In their normal form, these genes, called *proto-oncogenes*, control the proteins important to normal cell growth and development. Somewhere along the way, however, these normal genes are damaged and assume a dangerous role. The proteins controlled by oncogenes function abnormally and lead to the uncontrolled growth and spread of abnormal cells that are characteristic of cancer.

"More than 25 of these oncogenes have now been isolated, and much evidence exists to support the current hypothesis that changes in the structure of these cellular genes represent the fundamental cellular alterations that result in the development of cancer," says Robert A. Weinberg, Ph.D., professor of biology at the Center for Cancer Research, Massachusetts Institute of Technology, Whitehead Institute for Biomedical Research, in Cambridge.

Oncogenes were discovered by two different lines of research that eventually converged.

The first was the study of *retroviruses* (viruses whose genetic material is RNA, ribonucleic acid, instead of DNA, deoxyribonucleic acid). Retroviruses have an unusual property: They can make a DNA copy of their genetic material that can then be integrated into the chromosomal DNA of the cell being infected. Some retroviruses carry among their genes a single gene that is responsible for transforming a normal cell into a cancer cell.

Such a gene was first identified about 15 years ago in Rous sarcoma virus (RSV), which causes cancer in chickens. This gene was named *src*, which stands for sarcoma. Subsequently discovered oncogenes were also given three-letter abbreviations.

It was then found, however, that *src* was not a true viral gene but that it was almost identical to a normal gene found in all chicken cells. This normal proto-oncogene had been picked up by a slightly *oncogenic* (capable of producing cancer) retrovirus during the course of infection. Somehow along the way the proto-oncogene became a cancer gene.

At least 20 oncogenes have now been isolated from various retroviruses that cause several different types of cancer in experimental animals. In each case, the oncogene was found to be very similar to a normal gene and to regulate an oncogenic protein similar to a normal protein.

Tumor oncogenes: The second, more recent line of research involving oncogenes focused on human and animal cells rather than retroviruses. Genes in the DNA of various kinds of tumor cells were found that could transform normal cultured cells into cancer cells.

The ras oncogene: The most frequently isolated tumor oncogene is very similar to the retroviral oncogene known as *ras*, a family of genes found in vertebrate cells.

"Damaged *ras* genes have been found associated with about 20 percent of human cancers," says W. Gary Tarpley, Ph.D., research scientist at The Upjohn Company in Kalamazoo, Mich.

"We are now studying the biochemical properties of the damaged product of the *ras* gene, called p-21, to determine exactly how it differs from normal and how it leads to the transformation of a normal cell to a cancer cell. If we could answer these questions, the hope is that it would then be possible to target this aberrant biochemical process selectively with anticancer drugs and ultimately halt the entire process," Dr. Tarpley says.

It has now been determined that p-21 is a member of the so-called G family of proteins, present in the cell's fluid, that mediate the signals which help regulate cell growth. "When a *ras* gene is damaged, the signal mechanism is altered, and the cells receive incorrect information that leads them to behave in an aberrant way," he says.

The retinoblastoma oncogene: Scientists have recently isolated the oncogene responsible for *retinoblastoma* (a cancer of the eye's retina that occurs in young children). This oncogene is of

continued on page 29

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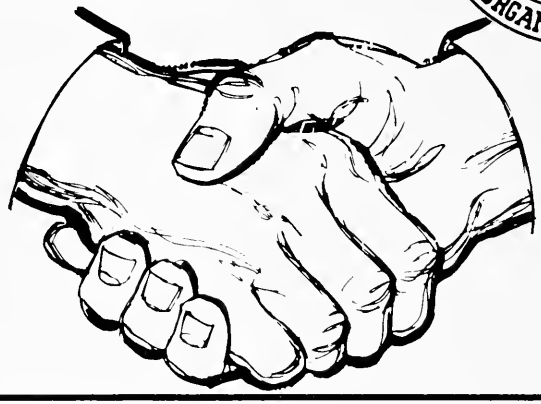

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GENES AND VIRUSES

Continued from page 27

particular interest because, contrary to all other known oncogenes, it is a recessive, rather than a dominant, gene. This means that a child will not develop the disease unless both parents have the gene; for other oncogenes, only one parent need have the gene.

Viruses and Cancer: Making the Connection

Scientists have long known that viruses can cause both natural and experimental tumors in animals. Only recently has a connection been for several different viruses and cancer in humans. The evidence to date is only indirect, however, because it would be unethical to infect a human subject experimentally with a suspected virus to see if it caused cancer.

Some such evidence may have become available inadvertently in relation to *human immunodeficiency virus* (HIV), a virus believed to be a cause of acquired immune deficiency syndrome (AIDS).

"The unfortunate people who have become infected with the virus after blood transfusions give a clear indication that the virus is responsible for their subsequent development of AIDS," says Robert C. Gallo, M.D., chief of the laboratory of tumor cell biology at the National Cancer Institute and the co-discoverer with Dr. Luc Montagnier of the Institut Pasteur in Paris of the virus now known as HIV.

Although AIDS itself is not a cancer, it does lead frequently to the development of several types of cancer — Kaposi's sarcoma, Burkitt's lymphoma and chronic myelogenous leukemia.

HIV is actualy the third of a group of retroviruses called human T-cell leukemia viruses (HTLV), discovered by Dr. Gallo and others. The first one, called HTLV-I was discovered in 1979 and leads to a form of leukemia and lymphoma.

The second virus, HTLV-II was discovered in 1982 and causes a rare form of leukemia called hairy-cell leukemia. This disease has been the subject of much recent interest because nearly 90 percent of patients experienced remission when treated with *alpha interferon*, a type of biological therapy using agents derived from or similar to immune system agents.

Other viruses that show varying degrees of evidence of causing human cancers include the Epstein-Barr virus, linked to infectious mononucleosis, to a type of lymphoma called Burkitt's and to nasopharyngeal cancer; hepatitis B virus, linked to liver cancer; human papilloma virus, linked to genital warts and to cervical cancer; and herpes simplex virus type 2, possibly also linked to cervical cancer.

Human cancer viruses appear not to cause cancer by themselves, however. Other factors (called *cofactors*) are almost certainly involved, including cigarette smoking, diet, heredity, various *carcinogens* (cancer-causing agents), additional infections and the effectiveness of the individual's immune system.

Genetic Engineering: Hope for the Future?

"Remarkable advances have recently been made in genetic engineering that may relate to patients who inherit a tendency to develop cancer," says Henry T. Lynch, M.D., director of the Hereditary Cancer Consultation Center at Creighton University Medical Center in Omaha, Neb.

For example, the technology is now available to take from chick embryos the genetic material necessary for production of a specific enzyme (a substance that promotes a chemical reaction in the body) and insert it into cultures of mouse cells that are low in the same enzyme.

"If we could isolate cancer-resistant genes and transplant them into human cells that are deficient in them," says Dr. Lynch, "we could conceivably prevent the influence of the cancer-prone genes and produce a higher degree of resistance to carcinogens."

Researchers have yet to prove that cancer actually can be prevented in this way. It remains a question for the future.

This is the first in a series of ESP (Education Support for Pharmacy) articles, which is provided as a service to pharmacists by The Upjohn Company.

For more information on this topic, please write The Upjohn Company, 7000 Portage Road, 9812-88-99, Kalamazoo, MI, 49001 or call (616) 323-6902.

NOTICE OF PUBLIC HEARING

The North Carolina Board of Agriculture has announced a public hearing to receive statments on the implementation of rules and regulations pertaining to the registration of manufacturers, wholesalers and repackagers as authorized in G.S. 106-140.1, enacted in the 1987 session of the General Assembly. The public hearing is to be held March 9, 1988, at 10:00 a.m. in the Board Room, Agricultural Building, 1 West Edenton Street, Raleigh. Interested persons may present statements either orally or in writing at the public hearing by mail addressed to David S. McLeod, Secretary of the North Carolina Board of Agriculture, P.O. Box 27647, Raleigh, NC 27611.

The proposed regulations are:

2 NCAC 9M .0001; REGISTRATION PROCEDURES AND FORMS; is proposed for adoption as follows:

CHAPTER 9 — FOOD AND DRUG PROTECTION DIVISION

SUBCHAPTER 9M - DRUGS

.0001 MANUFACTURER REGISTRATION

(a) Every person doing business in North Carolina and operating as a prescription drug manufacturer, repackager or wholesaler shall submit a completed prescription drug registration form to the Department. A separate registration form shall be submitted for each establishment operating in the State of North Carolina. Each registration form shall be signed by the owner or individual in charge.

(b) A registration fee of one hundred dollars ($100.00) shall be submitted with each prescription drug registration form.

(c) On or before December 31 of each year, every person registered in accordance with (a) of this Requisition shall submit a renewal form furnished by the Division.

(d) A fee of one hundred dollars ($100.00) shall be submitted with each renewal form.

(e) Prescription Drug Registration Forms may be obtained from the Food and Drug Protection Division.

Statutory Authority G.S. 106-140.1

LKS Plans For 75th Anniversary

Preparations are well underway for the Diamond anniversary of Lambda Kappa Sigma, to be celebrated August 2-6, 1988 at the biennial convention. Boston is the host city for this exciting event and accommodations have been reserved at the luxurious Copley Plaza Hotel. Along with the business and educational meetings, many fun-filled activities have been planned. Among these are a harbor cruise and clambake which promise to make this an outstanding convention. All LKS sisters are encouraged to come and enjoy a week of excitement as we celebrate 75 years of history and look forward to the future of LKS and women in pharmacy practice.

For more details, contact Mary Greer at: Lambda Kappa Sigma, International Pharmacy Fraternity, P.O. Box 981, Claremont, OK 74018.

REVIEW OF 1984-1986 HOSPITAL PHARMACY OPERATIONS

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Lilly Survey:

This review of 1984-1986 hospital pharmacy operations was abstracted from editions of the *Lilly Hospital Pharmacy Survey.* Table 1 lists summary information for the years 1984-1986. The average hospital has had a reduction of 4.1% beds (10 beds) from 1984 with a census decrease of 4%. The average census has been falling consistently since 1982 and is approximately 14% less than the 73% average rate observed from 1975-1981.

The average length of patient stay continued to decline from previous years to 6.0 days in 1986 which represented a 9.1 decrease since 1984. Although the number of hours the central pharmacy was open slightly declined in 1986, the figure is constant with the 1984 figure of 97 hours. The hours worked by pharmacists, technicians, and support personnel have slightly increased since 1984 (+1.4%, +3.8%, & +5.5%).

For the third year, total inventory showed a slight decrease (–.07%). However, inventory based on per patient day, per bed, per occupied bed, and per admission all increased (+4.8%, +3.0%, +4.8%, & +1.1%). It is interesting to note that purchases increased for all of these categories (+7.7%, +5.9%, +7.7%, & +3.8%). Once again the inventory turnover rate increased and was 8.7 in 1986 compared to 7.8 in 1984.

The ranking of services provided by pharmacy departments was the same in 1986 as in 1985 (Table 2). However, in 1985 these services were offered by over 70% of pharmacies compared to 1986 where they were offered by over 60% of pharmacies.

Effects of Cost Containment:

Current cost-containment for health care was initiated by the implementation of Medicare prospective pricing in 1984. The pressure continues for hospitals to further reduce costs and be more efficient in treating patients. The results are that length of patient stays have declined whereas the intensity of care has increased. Thus, the average hospital admissions have decreased.

In 1985, peer review organizations (PROs) were implemented which focused on unnecessary Medicare hospital use. These aspects of cost containment for Medicare patients created similar pressure for cost containment in the private sector of health care. It is possible that private use-review programs may have an even more profound effect than Medicare prospective pricing and PROs on hospital admissions, patient days, and average occupancy.

A number of insurance companies and employers are promoting the concept of private use-review programs. These programs include preadmission review, second-surgical-opinions, continued-stay review, and case-management services. Companies engaged in preadmission and concurrent review are predicting reductions of 15% to 20% for the number of hospital patient days.

These factors are resulting in a decreased use of hospital inpatient services. One report stated that in 1985, hospital out-patient visits increased by 4.7%, in-patient admissions decreased by 4.4%, and average hospital occupancy attained a new low of 64%. This decrease in the use of hospital in-patient services has resulted in a decline of revenue for hospitals. In an attempt to off-set this decline in revenue, hospitals are engaging in alternative-care (home-care) services and for-profit subsidiary corporations. These include home infusion therapy programs, durable medical equipment, and joint ventures with physicians.

This decrease in the length of patient stay has resulted in an increase in the intensity of care provided patients. These aspects are directly affecting pharmacy services in hospitals because aggressive drug therapy is resulting in an increase use of injectable dosage forms. The increased costs of using parenteral products results in a disproportionate increase in costs for pharmacy services. Unfortunately, hospital administrators may exert even greater pressure on pharmacy managers to obtain a proportionate decrease in

Continued on page 32

Table 1 Average hospital pharmacy (general private nonprofit)

	1984	1985	1986	Change 1984-85	Change 1985-86	Change 1984-86
Bed capacity	245	244	235	– .4%	–3.8%	– 4.1%
Census (occupied beds)	64%	60%	59%	–3%	–1%	–4%
Admissions	8582	8566	8416	– 0.2%	–1.8%	– 1.9%
Patient days	56338	53436	50607	– 5.2%	–5.3%	–10.2%
Length of patient stay (days)	6.6	6.2	6.0	– 6.1%	–3.2%	– 9.1%
Hours central pharmacy open/week	97	100	97	+ 3.1%	–3.1%	0%
Pharmacist hours/week	290	309	294	+ 6.6%	–5.1%	– 1.4%
(FTE)	7.3	7.7	7.3			
Technician hours/week	260	276	268	+ 6.2%	–3.0%	+ 3.1%
(FTE)	6.5	6.9	6.7			
Support personnel hours/week	109	114	115	+ 4.6%	+0.9%	+ 5.5%
(FTE)	2.7	2.9	2.9			
Inventory	$121414	$121198	$120397	– 0.2%	–0.7%	– 0.8%
/patient day	$2.16	$2.27	$2.38	+ 5.1%	+4.8%	+10.2%
/bed	$498	$497	$512	– 0.2%	+3.0%	+ 2.8%
/occupied bed	$786	$828	$868	+ 5.4%	+4.8%	+10.4%
/admission	$14.15	$14.15	$14.31	0%	+1.1%	+ 1.1%
Purchases	$944569	$1032831	$1053736	+ 9.4%	+2.0%	+11.6%
/patient day	$16.77	$19.33	$20.82	+15.3%	+7.7%	+24.2%
/bed	$3855	$4233	$4484	+ 9.8%	+5.9%	+16.3%
/occupied bed	$6118	$7055	$7600	+15.3%	+7.7%	+24.2%
/admission	$110.06	$120.57	$125.21	+ 9.6%	+3.8%	+13.8%
Inventory turnover rate	7.8	8.5	8.7	+ 9.0%	+2.4%	+11.5%
Floor area central pharmacy (square feet)	1734	1799	1712			

REVIEW OF 1984-1986

Continued from page 31

pharmacy expenses as compared to other departments. A task which may be almost impossible. Thus, hospital pharmacy managers are being forced to reevaluate pharmacy services. This reevaluation may equate to a decrease in pharmacy services to patients.

Conclusion:

The pressure on pharmacy to reduce costs is tremendous. Hopefully, the pharmacy profession will create innovative cost-reduction programs which will not sacrifice patient care. Our goal must remain, "to deliver the highest level of patient care at the least possible costs."

Table 2. Services offered by Pharmacies

	1986	1985
% pharmacies offering services	>60%	>70%
Monitoring patient profiles	94.4%	96.5%
Monitoring drug interactions	91.2%	92.6%
Providing drug information services	74.6%	82.5%
Drug therapy consultation	67.9%	71.25

HYPOTHERMIA IN ELDERLY

With the onset of cold weather the National Institute on Aging issues a reminder about accidental hypothermia. Hypothermia can afflict anyone — but older people are at particular risk from this potentially fatal condition. It often takes a victim by surprise because the weather need not be bitter cold for it to strik the vulnerable.

Medicallly the condition exists when the inner body temperture falls to 95° F or below. In addition to cold weather, other factors that can affect control of body temperature include certain medications, chronic illness, and/or lack of warm clothing and heat. Fortunately, this condition can be prevented. Older people should be encouraged to dress warmly, turn thermostats to at least 65°, and eat properly.

Winter is also a good time to be a good neighbor and check in on those living alone. While only a special low-reading thermometer can truly diagnose hypothermia, other signs may help to identify the condition: an uncontrollable shivering, stiff muscles, slurred speech, slow and labored breathing, a weakened pulse, and sometimes even confusion and disorientation. Any suspicion that hypothermia exists should be referred without delay for medical attention.

A brochure published by the National Institute on Aging entitled "Accidental Hypothermia —A Winter Hazard for Older People," summarizes risk factors, signs, and symptoms, as well as precautions and treatment. For a free copy you may write to: Hypothermia, NIA Information Center, 2209 Distribution Circle, Silver Spring, MD 20910.

HIGHLIGHTS OF NARD CONVENTION

The National Association of Retail Druggists is now NARD. The association's House of Delegates, in its meeting on Thursday, October 22, voted to discontinue the association's full name in favor of the acronym that has long been synonymous with independent retail pharmacy and with political action in Washington, DC. The vote came on the final day of NARD's 89th Annual Convention and Trade Exposition, held October 18-22 in Las Vegas, NV.

The vote to adopt NARD as the association's full name, said incoming NARD President Darwyn Williams, "is the best kind of compromise. It enables us both to maintain that which is synonymous with out 89-year tradition of service and political action on behalf of the independent — the acronym NARD — and to be responsive as well to the growing numbers in our profesion for whom the word pharmacist most accurately reflects their current role and stature as health professionals in the community."

The mission of NARD, however, remains unchanged, stressed Williams. "We are and will continue to be the national association representing the professional and proprietary interests of the nation's independent retail pharmacists."

The House of Delegates also approved another important change in the association's constitution and by-laws during the Las Vegas convention. The NARD membership category for employee pharmacists was changed from Association Member to Pharmacist Member. Employee pharmacists in all practice settings are eligible to be Pharmacist Members of NARD. The Active Member category continues to be for the owners and managers of independent pharmacies.

The NARD convention drew a record number of 4,500 attendees, including more first-time registrants than ever before. the trade exposition was also again a sell-out.

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HOSPITAL POSITIONS OPEN

The Department of Pharmacy Services at Sampson County Memorial Hospital has opportunities available for hospital pharmacy practice. This 145 bed JCAH approved hospital is located within 1 hour drive of the coast. Good working conditions with Nursing and Medical Staff. Excellent starting salary, plus comprehensive benefit package. Activities include complete computerization, unit dose, IV admixture, patient profile and inventory control. Patient care services include: antibiotic monitoring, TPN, Aminoglycoside dosing and support for continuing education. Contact Patricia Britt, director, Personnel or Jenny Strickland, Director Pharmacy at (919) 592-8511.

STAFF PHARMACIST WANTED: Position at Kings Mountain Hospital. Modern 102-bed facility with computerized unit dosage. Hospital experience preferred but not necessary. Will consider a May graduate. Contact Jerry McKee at (704) 739-3601 Ext. 472.

STAFF PHARMACIST: Moore Regional Hospital, a 316-bed, acute care facility has an opening for a staff pharmacist. This pharmacy offers unit dose, IV Admixture, chemotherapy, support for C.E. education, patient profile, and a mobile medication service. Moore Regional Hospital is located in Pinehurst, a beautiful part of the Sandhills. Excellent starting salary, on-site Day Care, plus comprehensive benefit package. Contact Cornelia Perry, Vice President Human Resources, 919-295-7808 or Robert Beddingfield, Director of Pharmacy, 919-295-7112 or send resume to: Moore Regional Hospital, Human Resources, P.O. Box 3000, Pinehurst, NC 28374. EOE.

PHARMACIST WANTED: Director of Pharmacy for 64-bed hospital in Southeastern North Carolina. Excellent hours, salary negotiable, and good fringe benefits. Contact Tom Smart at (919) 582-2026.

PHARMACISTS NEEDED: Due to expansion, pharmacists are needed 1st and 2nd shifts. Pharmacy is decentralized with unit dose and IV-Admixtures. Other services include: nutrition support and drug information. Salaries are negotiable depending on experience. For more information send resume or call collect: Letha Huffman, NC Baptist Hospital, 300 S. Hawthorne Road, Winston-Salem, NC 27103. (919) 748-4717. EOE.

HOSPITAL PHARMACIST WANTED: Staff position at Humana Hospital-Greensboro, includes unit dose, IV admixture, and clinical services, e.g. antibiotic monitoring, heparin and aminoglycoside pharmacy protocols. Rotating shifts, no third. For more information, call or write: Dir/Pharmacy, Humana Hospital Greensboro, 801 Green Valley Road, Greensboro, NC 27408, (919) 378-2826.

HOSPITAL PHARMACIST WANTED: Contact Doris Osborne, Randolph Hospital, Asheboro. (919) 625-5151.

PHARMACIST WANTED: Pharmacist position available at Cabarrus Memorial Hospital located in Concord. Seeking full-time pharmacist position with competitive salary with generous shift and work differentials. Contact Emmett Robertson, Human Resources, (704) 786-2111 Ext. 5995.

RETAIL POSITIONS OPEN

STAFF PHARMACISTS needed for retail grocery chain in Elizabeth City, Rocky Mount and Goldsboro, NC. Pharmacy degree required. Salary ranges from $37K (40 hour work week), comprehensive benefit package. Moving expenses covered by client. Call Marybeth Gaiani (704) 529-1940.

PHARMACY MANAGER needed for retail grocery chain in Elizabeth City, NC. Pharmacy degreed, license and some managerial experience required. Salary ranges from $41K (42 hour work week), 30% bonus, and comprehensive benefits package. Moving expenses covered by client. Please call Marybeth Gaiani (704) 529-1940.

PHARMACIST WANTED: Excellent opportunity to work in independent professional pharmacy (80% Rxs) in large medical complex in Sandhills. No nights or Sundays. Excellent salary & benefits. Box 1119, Pinehurst, NC 28374. (919) 295-2222 (day or night)

PHARMACIST WANTED: Call Norwood at 259-2676.

PHARMACIST WANTED: Pharmacist wanted for new store in medical complex located in Red Springs, NC. Projected opening date is May 1988. Competitive salary. Send resumes to Hunters Bay Drugs, Rt. 2 Box 180, Red Springs, NC 28377.

WANTED: Full time pharmacist. Western part of the state. Two 10 hour days in two different locations. Three consecutive days off, no Sundays, no nights. Both in resort setting. Contact Jack Alexander, (704) 526-2366.

PHARMACIST WANTED: We are seeking an ambitious, and professional career-minded individual for a pharmacist position in Greensboro, High Point and Winston-Salem, NC. We offer excellent salary, stock ownership, educational subsidy, extensive benefits, retirement plan, 401K tax plan, annual salary merit reviews. "Pure pharmacy setting." If interested call Lew Thompson 1-800-233-7018 or send resume to: The Kroger Company, Attn: Personnel, PO Box 14002, Roanoke VA 24038. EOE.

PHARMACISTS WANTED: Greensboro and Greensboro market area. Contact David Cox, Revco Drug Stores, at (919) 766-6252.

PHARMACIST WANTED: For retail and consultant practice. Excellent salary and benefits. Located in Western NC. Call Bill Morris at (704) 456-8607.

PHARMACISTS NEEDED: For Rite-Aid stores in Greensboro, High Point and Asheboro. For more information contact Sharon Reynolds at (803) 582-0982.

PHARMACIST MANAGER AND STAFF PHARMACISTS WANTED: For Kroger stores in Fayetteville and Southern Pines. Pharmacist Manager and 1 Staff Pharmacist is needed in Fayetteville and 1 staff pharmacist is needed in Southern Pines. For more information contact: April Clifton or Frank Delvero at (919) 864-3340 or Mike Spector at (704) 572-5830.

PHARMACIST WANTED: Pharmacist position available at Reynolds Health Center Pharmacy in Winston-Salem. Pharmacy hours 8-5, Monday through Friday. Salary negotiable. Excellent benefits. Contact Forsyth County Personnel at (919) 727-2851 or Janet Foster, Pharmacy Director at (919) 727-8264, for further information.

PHARMACISTS: Due to rapid growth Kerr Drug Stores now have positions available for pharmacists in Rocky Mount, Tarboro and Fayetteville. Kerr Drugs offers opportunity for growth and in store management. Excellent benefits. Send resume to Jackie Gupton, P.O. Box 61000, Raleigh, NC 27661, or call (919) 872-5710.

FIXTURES

FIXTURES FOR SALE: Streater fixtures for sale. 2½ years old, like new. 40 ft full islands with end caps; 80 ft wall w/lighted cornice. Available approximately 5/1/88 — $3,200.00. Call or write: Roland Thomas — 3555 Tryclan Drive, Charlotte, NC 28217. (704) 525-5300.

Rx SHELVING FOR SALE: Used metal Rx shelving, approximately 50 ft. $700.00. Available now. Call or write: Roland Thomas, 3555 Tryclan Drive, Charlotte, NC 28217. (704) 525-5300.

(Continued on page 36)

CLASSIFIEDS

(Continued from page 35)

ANTIQUE STORE FIXTURES FOR SALE: includes display cases, soda fountain, wall fixtures. Contact Charles Chapman at (704) 933-7775.

COSMETIC FIXTURES FOR SALE: Noxell wall units. These are the most popular cosmetic fixtures on the market today. Expandable to 36" length. Black & chrome finish. Comes with interchangeable manufacturer signs. Both peg and shelves. Excellent condition. Priced to sell quick. Contact Micky Whitehead at R&M Mutual Discount Drugs, Ramseur, NC (919) 824-2151.

WANT TO BUY: Pharmacy Collectibles, Apothecary Jars, Show Globes, Soda Fountain, Mahogany Pharmacy Center, or Fixtures. Contact G.C. Jones, Knightdale Pharmacy, P.O. Box 370, Knightdale, NC 27545 or (919) 266-3369.

COLUMBUS STORE FIXTURES FOR SALE: Complete Prescription Department, and 30 foot greeting card fixtures. Contact Bud O'Neal, Work: 919-943-2462, Home: 919-943-3751.

FIXTURES FOR SALE: Streater Fixtures, 24 years old. 2 cash registers, balance, card racks. Call Albert Clay at (919) 552-2838.

FIXTURES AVAILABLE AFTER JAN. 31. Complete store fixtures for a 5,000 square foot store in excellent condition including wall, gondolas, end pieces, one or more glass showcases and Rx department. Contact Hamp Langdon, Kernersville at 919-993-2195.

OLD SODA FOUNTAIN WANTED: Send specifics or call: John Cooper, Mast Store, Box 714, Valle Crucis, NC 28691, (704) 963-6551.

RELIEF

RELIEF PHARMACIST: Relief Pharmacist available. Has RV, will travel. Call Robert Lucas at (919) 383-1421.

PHARMACIST: Professional Services/-Consultation — Temporary and/or continual. Contact: L.W. Matthews at (919) 967-0333 or 929-1783. 1608 Smith Level Road, Chapel Hill, NC 27514.

RELIEF PHARMACIST AVAILABLE: Available for all of NC. Call Albert Clay at (919) 552-2838.

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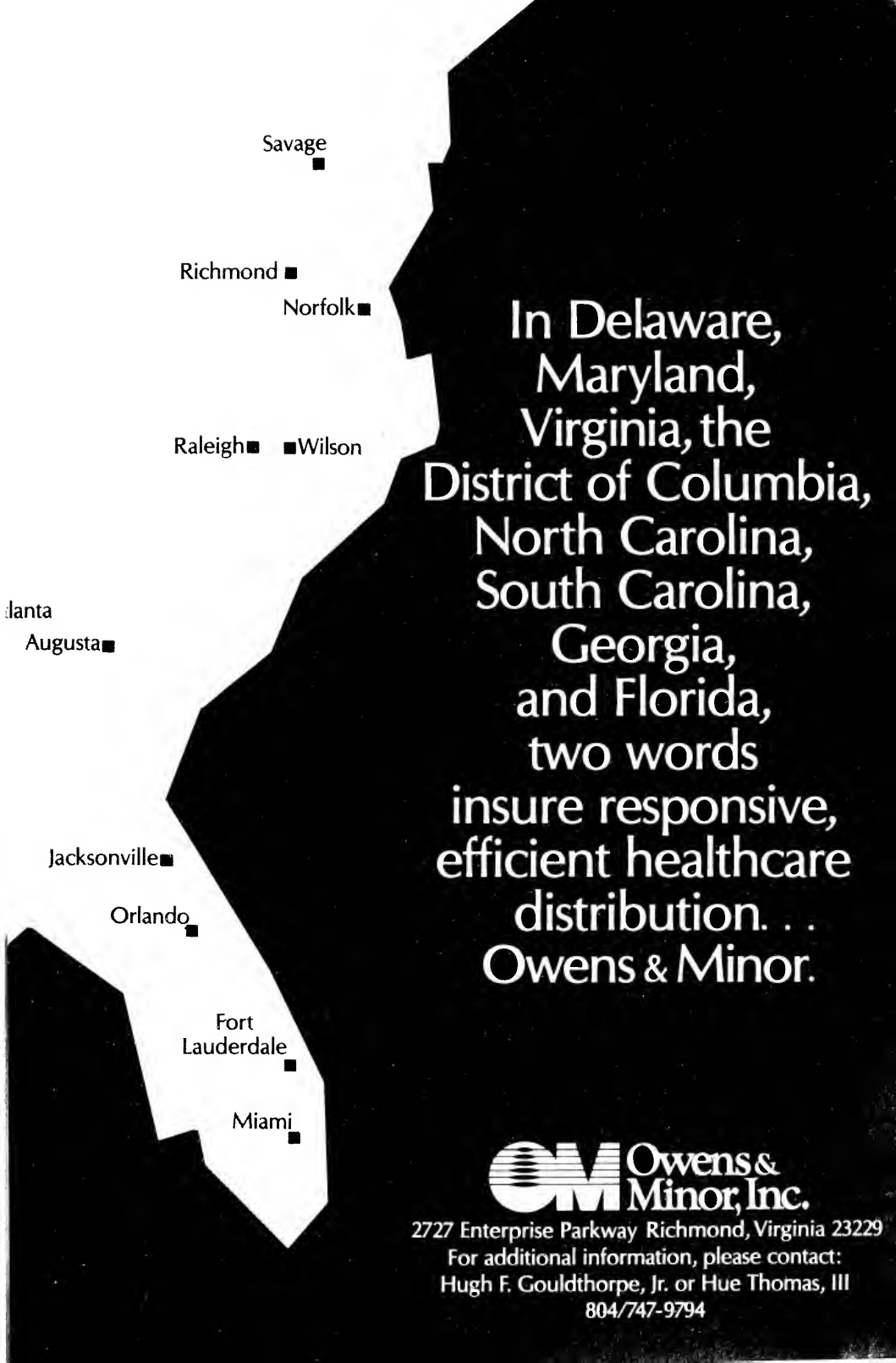
PHARMACIES FOR SALE

FOR SALE: Henderson's pharmacy in Franklinton, NC. Owners wish to retire. Sales price: $55,000 (inventory + $5,000). Call (919) 494-2321 days.

PHARMACY FOR SALE: Owner wishes to retire: 25 yr. same location. 30 miles from Charlotte. $270,000 Annual Sales, Inventory $85,000. Sales Price $80,000. Includes inventory, fixtures etc. $11,000 Accts Recv & Delivery Car. 75% Rx 40% Chg. Accts. Reply JNR c/o NCPHA PO Box 151 Chapel Hill, NC 27514 or call 1-704-933-6551 after 6 PM.

PROFESSIONAL PHARMACIES: Several small prescription-oriented pharmacies are currently available for individual ownership in North Carolina. These opportunities provide the vehicle to practice pharmacy the way you were taught, while offering an attractive income and more time to be with your family. In some of these cases, financing is also available to qualified candidates. For more information write: Jan Patrick, 10121 Paget Dr., St. Louis MO 63132.



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