NoDak Pharmacy

Volume 21, No. 1, January 2008

Save The Date

North Dakota Pharmacists Association

123rd Annual Convention

April 25-26-27, 2008

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Mark Your Calendar

January Calendar Events

January 26-27, 2008
Midwinter Pharmacy CE Conference, Doublewood Inn, Fargo

February Calendar Events

February 16, 2008
NDPhA Board of Directors Meeting, Bismarck

March Calendar Events

March 13-18, 2008
NASPA Spring Meeting, San Diego, CA

April Calendar Events

April 25-27, 2008
NDPhA Annual Convention, Ramkota, Bismarck

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Seasons Greetings to all!

As many of you know, the ND Pharmacists Association and the ND Pharmacy Service Corporation, along with other program partners, are in the process of developing a Disease State Management Program of Diabetes for the ND Public Employees Retirement System (NDPERS). I want to take a couple of minutes of your time to provide you with an update related to the Disease State Management Program initiative.

To-date, our office has provided NDPERS with a "concept" proposal and we are just about finished with our formal proposal, which will be given to them by the end of the year. NDPERS has anticipated starting this program July 1, 2008 from the beginning. We are right on target to begin patient/employee enrollment by July 1, 2008. There is a good chance we will begin June 1, 2008. We have meet with NDPERS on numerous occasions and hope to enter into a contract for services by February of 2008.

At this point in time, NDSU College of Pharmacy has entered into a co-licensing agreement with the National Institute on Pharmaceutical Care Outcomes (NIPCO – NCPA) to provide the needed training for pharmacists to become accredited in diabetes care. We anticipate sending out the "home study" materials in January with "live" training sessions to follow in late February possibly in Fargo and Bismarck. Tara Schmitz with NDSU will be providing the facilitation of the training. All providers will have to sign a "network agreement" to participate as a provider and must complete the training requirements to be reimbursed for services. At this point in time, we would like all interested providers to send notification to our office expressing your desire to participate as a network provider. You can call, mail or email our office expressing your desire to participate. We will keep record of those that are interested, so you will be the first providers notified when network sign-up begins. We also will be sending out further updates as we move forward.

Our office will also be hiring a Clinical Coordinator to provide coordination and oversight of the program. We anticipate having a Clinical Coordinator hired no later than March of 2008. We anticipate the Clinical Coordinator being able to travel around the state to help fill in the "gaps" in service, as well. An essential component of this program is to identify an adequate data management entity. Our office formed an ad hoc group that looked at different data management entities that exist. We narrowed it down to 2 entities. We took one last look at their software data management systems and then we checked the references that were provided. We anticipate entering into a contract with Medication Management Systems (MMS) out of Minneapolis, Minnesota. They have an established track record and provide similar services covering 13 states. We anticipate entering into a contract with MMS no later than March of 2008. We will try to customize the software to meet our direct and immediate needs for this program.

With the funding available, we anticipate being able to see a maximum of 800 patients during the first year. This will be done on a first come first serve basis. For those of you who are potential providers, we ask for your patience while we implement this program and expand this program to cover additional lives. We feel we have established an adequate reimbursement for providers who wish to join our network and provide services.

It is our hope that we can continue this program into its second year. We anticipate utilizing the Telepharmacy Network and NDSU students moving forward into the second year of implementation. The development of a peer-to-peer mentoring network will also be explored moving into the second year of the program. Our office has applied for various grant resources to help leverage the dollars spent. Approximately, $430,000 has been sought and we will hear by January regarding the majority of the funding requests. We will continue to explore grant opportunities as they are presented.

Our office will continue to work closely with NDPERS, BC/BS of ND, NDSU College of Pharmacy and other program partners moving forward. We ask that you be patient while we expand this program over time to cover other disease states and other employer groups. You may not have program participants in your area initially, but again, we anticipate expanding our efforts to cover additional lives and other disease states moving forward.

Our office should be able to provide you with additional details once January has come and gone. Please feel free to call our office for specific details of the program and/or any questions that you may have. Thank you for your patience and interest in this program. We look forward to working with you in the future.

National Pharmacy Associations Team with NCPDP for Discounted Prescriber Data including the NPI

NCPDP announces that the National Provider Identifier (NPI) is now available on the HCIdea™ prescriber database as of November 1, 2007. This relational database, with over 1.3 million prescribers, is now more robust that ever before. Designed specifically for the pharmacy services sector of the healthcare industry, NCPDP's HCIdea™ is the premier product for prescriber information including NPI to DEA mapping or cross walking, and multiple practice locations.

The HCIdea™ online lookup tool (www.HCIdeaLookUp.org) allows pharmacies to obtain address, phone, licensure, DEA and NPI information on prescribers using a web browser. For a demo of this product please visit www.HCIdeaLookUp.org and click on "Watch the Demo." The HCIdea v2.0 relational database contains multiple addresses, legacy identifiers, DEA numbers, State License information and NPIs.

Pharmacies must contact their state pharmacy associations and verify participation and membership. State associations will then provide NCPDP with information on member pharmacies wishing discounted pricing and NCPDP will extend the discounted pricing to these pharmacies. You will only receive the discounted price, which is significant, only if you are a member to your local Association.

Please feel free to contact our office if you have any questions. Thank you.

Hold These Dates

NDSU College of Pharmacy, Nursing, and Allied Sciences

Midwinter Pharmacy CE Conference

January 26-27, 2008

Doublewood Inn • Fargo, North Dakota

Saturday morning

- preceptor training/development
- evaluation of pharmacy student posters - created by P3 pharmacy students under the supervision and mentoring of NDSU College of Pharmacy faculty

Saturday afternoon and Sunday morning

- focus on infectious disease management and vaccinations

Watch for your brochure coming in the mail!!

Striving for Renewal

North Dakota Pharmacists Association

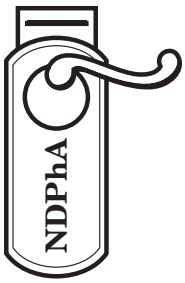
123rd Annual Convention

April 25-26-27, 2008

Best Western Ramkota Hotel, Bismarck ND

Donations Needed for Scholarship Auction

The scholarship auction will be held on Saturday, April 26 in conjunction with the President's Banquet. This year the auction is going to be fast paced with lots of action. Proceeds from the auction will go toward NDPhA scholarship endowment through the Pharmacy Advancement Corp. If you have any antique, collectible, unique pharmaceutical items, or handcrafted articles that you would like to contribute to the auction, please contact the NDPhA office at 701-258-4968 or email ndpha@nodakpharmacy.net.



Make Your Room Reservation Now

Convention activities will be held at the Best Western Ramkota Hotel 800 S 3rd St Bismarck, ND 58504 Ph: (701) 258-7700. Make your reservations early. Specify that you are with the North Dakota Pharmacists Association Convention.

2008 Award Nominations

Fax nominations by January 18, 2008 to: (701) 258-9312 or e-mail to: ndpha@nodakpharmacy.net

The NDPhA is accepting nominations for awards. Nominations should be submitted **along with biographical information**. The following awards will be presented.

Al Doerr Service Award

The recipient must: be a pharmacist licensed to practice in North Dakota; be living (not presented posthumously); not have been a previous recipient of the award; has compiled an outstanding record for community and pharmacy service.

Nominee: _____Submitted by _____

Elan Innovative Pharmacy Practice

The recipient should be a practicing pharmacist within North Dakota and a member of NDPhA who has demonstrated Innovative Pharmacy Practice resulting in improved patient care.

Nominee: _____Submitted by _____

Pharmacist Mutual Distinguished Young Pharmacist

The goal of this award is to encourage the newer pharmacists to participate in association and community activities. The award is presented annually to recognize one such person for involvement and dedication to the practice of pharmacy. The recipient must: have received his/her entry degree in pharmacy less than nine years ago; be a pharmacist licensed to practice in North Dakota; have practiced community, institutional, managed care or consulting pharmacy and who has actively participated in national pharmacy associations, professional programs, state association activities and/or community service.

Nominee: _____Submitted by _____

Wyeth Bowl of Hygeia

The recipient must: be a pharmacist licensed to practice in North Dakota; be living (not presented posthumously); not have been a previous recipient of the award; is not currently serving, nor has he/she served within the immediate past two years as an officer of the association in other than an ex-officio capacity or its awards committee; have compiled outstanding record of community service, which apart from his/her specific identification as a pharmacist, reflects well on the profession.

Nominee: _____Submitted by _____

Past Award Recipients

Bowl Of Hygeia

1959 FOSS, PALMER L. *
1960 HALBEISEN, J.G. *
1961 TROM, ORDNER S. *
1962 SUCKERMAN, ANSUL
1963 FOSS, ALDEN L.
1964 MOORE, JAMES W. *
1965 DOERR, ALBERT *
1966 BAILLIE, DAN *
1967 WAGNER, VERNON E.
1968 SCHULD, JOHN F. *
1969 SHELVER, GLEN D. *
1970 CHASE, EARL W. *
1971 WALTER, ANTHONY M.
1972 RODENHIZER, BRUCE G.
1973 DEHLIN, GLENN R.
1974 SOUTHAM, CLAIR O. *
1975 GROSZ, WILLIAM J.
1976 KROHN, ODELL Q.
1977 JACOBSEN, JOHN L.
1978 PLOWMAN, EDWARD DEAN
1979 HAAKENSON, PHILIP N. *
1980 IRGENS, JAMES
1981 ANDERSON, JR., HOWARD C.
1982 KRAMER, JR., JOHN H.
1983 JOHNSON, GERALD R.
1984 SOUTHAM, JOHN E.
1985 SWINLAND, THOMAS L.
1986 LEDOSQUET, JOHN J. *
1987 LEGRID, DONALD A. *
1988 ROGERS, RILEY H.
1989 MAYER, GORDON L.
1990 RONHOLM, ROY J.
1991 WELDER, ANTON P.
1992 HUBER, ARTHUR P. *
1993 MALMBERG, MARVIN M. *
1994 OLIG, HERMAN J.*
1995 DEWHIRST, GARY
1996 SCHWINDT, ALVIN
1997 IRSFELD, JAMES H.
1998 HERBAL, ELROY
1999 TOKACH, MARVIN
2000 ZUEGER, JR., EMIL E.*
2001 KRUGER, RUSSEL
2002 BAILLIE, F. DUANE
2003 SILKEY, RICHARD
2004 WAHL, GERALD
2005 THOM, BONNIE
2006 TREITLINE, ROBERT
2007 OLIG, DAVID J.

Innovative Pharmacy Practice

1996 SCHLITTENHARD, DEWEY
1997 TREITLINE, ROBERT L.
1998 OBERLANDER, KEVIN
1999 DAVIS, THOMAS D.
2000 STORANDT, HARRISON
2001 IRSFELD, STEVE
2002 FINCK, KAREN
2003 DOE, JODY
2004 McGARVEY, CURTIS
2005 CHRISTENSON, ERIK
2006 GODFREY, ANTHONY
2007 FINKEN, GERALD

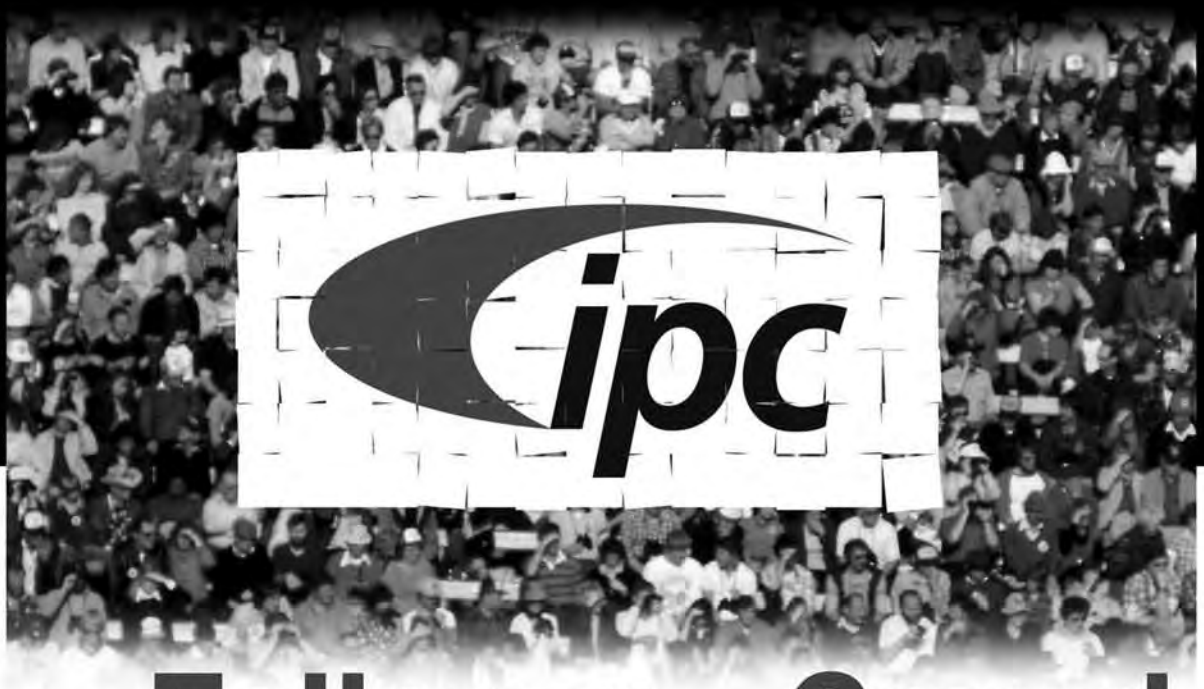
Al Doerr Award

1977 DOERR, AL *
1978 GROSZ, WILLIAM. J.
1979 FORBES, DAVID
1980 MAYER, GORDON
1981 BERNARDY, JACK *
1982 SCHULD, JOHN F. *
1983 LEE, JOHN
1984 KROHN, ODELL
1985 ROGERS, RILEY
1986 HAAKENSON, PHIL *
1987 WELDER, ANTON P.
1988 OLIG, HERMAN *
1989 IRSFELD, JAMES
1990 GEORGE, CLARENCE T.
1991 LINK, RAYMOND
1992 SCHLITTENHARD, DuWAYNE
1993 OLIG, DAVID J.
1994 ZUEGER, JR., EMIL E. *
1995 ANDERSON, JR., HOWARD C.
1996 AIPPERSPACH, LORETTA
1997 DEWHIRST, GARY W.
1998 HAROLDSON, LAUREL
1999 TREITLINE, ROBERT
2000 THARALDSON, TOM
2001 BILDEN, PAUL
2002 BIRKMAIER, GEORGE (SKIP)
2003 ABRAHAMSON, EARL
2004 OBERLANDER, KEVIN
2005 BUCHHOLZ, DENNIS
2006 CHURCHILL, PATRICIA
2007 DETWILLER, RICK

Distinguished Young Pharmacist

1987 ZEIGLER, GAYLE D.
1988 CARLSON, TIMOTHY S.
1989 OBERLANDER, KEVIN
1990 OLIG, JOLETTE M.
1991 BILDEN, WADE
1992 HANEL, HARVEY J.
1993 IRSFELD, STEVEN P.
1994 FINCK, KAREN M.
1995 MEESE, MARTIN G.
1996 SAYLER, DOREEN M.
1997 CLARENS, MARY LEE
1998 SCHNASE, SUSAN M.
1999 HORNER, KEITH
2000 WENTZ, MELISSA
2001 JONES, PAULA
2002 TREITLINE, DAWN
2003 NELSON, ROBERT
2004 ALTRINGER, TERRY
2005 GRONNEBERG, DAWN
2006 NOESKE, AMY
2007 KRUEGER, MEGAN

Sometimes it's OK



to Follow the Crowd

You don't have to be alone to be independent.

6,000 independent pharmacies have discovered the multitude of reasons to take advantage of Independent Pharmacy Cooperative (IPC) and our value-loaded programs. Our competitive pricing, top quality and superb service have made us one of the fastest growing alternative source vendors for independent pharmacy in the nation.

When you buy from us, you get the best of both worlds. You retain your independence and make all decisions affecting your direction and bottom line. Plus, you can take advantage of low volume-based pricing and vast selection with daily access to our 75,000 square-foot distribution facility.

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Be independent AND part of the winning crowd with IPC.

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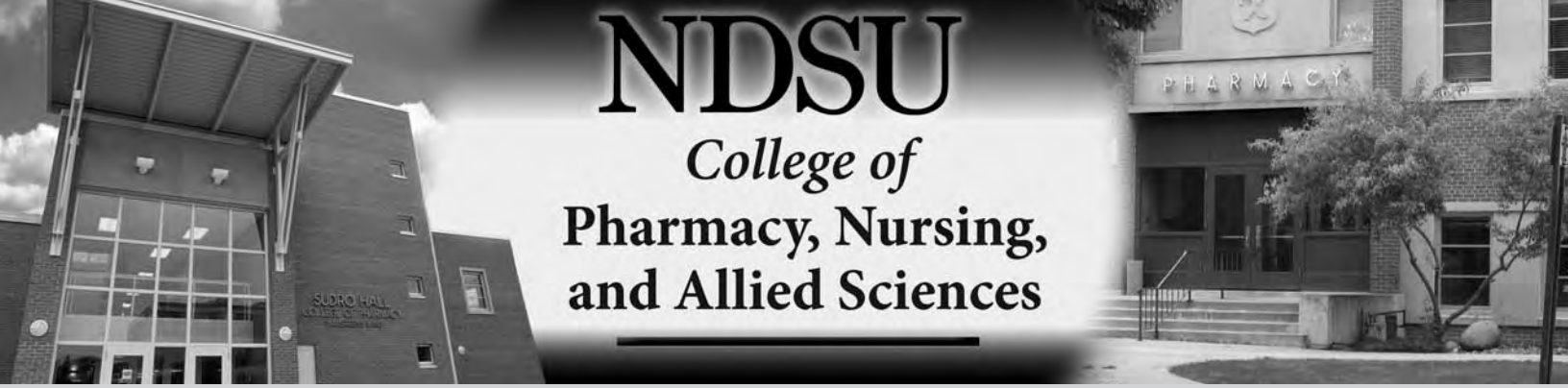

Charles Peterson, Dean
NDSU College of Pharmacy

College Develops New Strategic Plan

In the Summer of 2007, the College hired an outside consultant (Bernard Consulting, Group, Inc.(BCG), Kansas City, Missouri) to assist the College in the development of a new strategic plan which addresses the following issues: the comments and recommendations of ACPE in the Evaluation Team Report from their April 2006 visit of NDSU; the Board of Directors Actions and Recommendations from its June 2006 meeting; issues raised by faculty in the Self-Study; the new 2007 ACPE accreditation standards; and the recent reorganization of the College into a more interdisciplinary program involving pharmacy, nursing, and allied sciences.

On July 9-10, 2007, the BCG conducted an assessment with University and College administration, faculty, staff, students, and key stakeholders to solicit their input for the revised strategic plan. BCG conducted 14 focus groups with faculty, staff, students, and preceptors; and conducted seven one-on-one interviews with the President, Provost, Vice President for Research of the University as well as external constituents including the Executive Director of the North Dakota Board of Pharmacy, the Executive Vice President of the North Dakota Pharmacist Association, and the Chair and Vice-Chair of the Pharmacy National Advisory Board. In addition, BCG distributed on-line surveys to all pharmacy national advisory board members (PNAB) and to students enrolled in the pharmacy professional program.

On August 8, 2007, the BCG met with the Strategic Planning Committee to review and revise the College vision, mission, and core values statements. On August 14^th and 15^th 2007, the BCG facilitated a two day retreat with faculty and staff of the College to review the input received from key stakeholders. This retreat resulted in the development of a strategic plan first draft which outlines critical issues, strategic directions, objectives, and action steps. On September 19, 2007, the BCG facilitated a meeting with College administrative council and strategic planning committee to review the first draft and make enhancements to the strategic plan with input from the Dean. This meeting resulted in the second draft of the strategic plan. This second draft is the version being submitted to ACPE for the Interim Report.

The strategic planning process with the BCG outside consultants has not been fully completed. Future work remaining includes: (a) BCG working with the administrative council and planning committee to prioritize critical issues, strategic directions, and action steps and assign accountability representatives for each area with timelines; (b) BCG facilitating with each department within the College a specific departmental strategic plan which compliments the overall College strategic plan; and (c) distribution and review of the second draft of the overall College strategic plan by faculty. It is hoped that the strategic planning process with the BCG outside consultants will be completed during the 2008 Spring Semester and result in a faculty retreat to perform final review and approval of both the overall College and individual departments' strategic plans.

The College invites you to send us your comments, ideas, and suggestions as to what areas we should be focusing on and developing for our future plans and priorities which will best serve our students and the profession of pharmacy in North Dakota. Contact Charles. Peterson@ndsu.edu with any comments or suggestions.

North Dakota State University
College of Pharmacy, Nursing & Allied Sciences
Annual Scholarship Recognition Program
September 20, 2007, Fargo, ND

North Dakota Rexall Club Scholarship

Fifteen scholarships of $1,000 each year for four years were awarded to pharmacy students from North Dakota and Western Minnesota who have demonstrated superior academic achievement prior to entering the NDSU Pharmacy Program. Several scholarships were awarded In honor of William and Mary Anne Grosz, in memory of Arthur Huber/In honor of Jane Huber, and In memory of Emil Zueger/In honor or Darelene Zueger.

Award Recipients: Dr. William Grosz, Heidi Fritz – P4, Amanda Eastman – P4, Faith Wentzel – P2, Suzy Reisenauer – P1, Stephen Syverson – P3, Megan Axvig – P1, Jill Anstadt – P1, Lindsay Werre – P2, Jill Kertz – P3, Dana Opsahl – P3. Michelle Larsen – P1, Hannah Dyk – P3, Brooke Melicher – P1, Maari Loy – P2, Elliot Klapperich – P2.

North Dakota Pharmacists Memorial Scholarship

Back Row (l to r): Nicholas Rogers - P3, Lynde Monson - P#, Camen Loff - P#, LeNeika Gebauer - P4, Howard Anderson.
Front Row (l ro r): Sara Bopat - P2, Chelsea Greutman - P3, Kristin Gussiaas - P3, Tonya Mayfield - P3.

Continuing Education for Pharmacists

Volume XXV, No. 2

Women's Health: Breast Cancer and its Treatment: Focus on Lapatinib (Tykerb)


Gossel


Wuest

Thomas A. Gossel, R.Ph., Ph.D.
Professor Emeritus
Ohio Northern University
Ada, Ohio

and

J. Richard Wuest, R.Ph., PharmD
Professor Emeritus
University of Cincinnati
Cincinnati, Ohio

Goal. The goal of this lesson is to discuss breast cancer and its medical management with focus on lapatinib, a new targeted therapy for breast cancer.

Objectives. At the conclusion of this lesson, successful participants should be able to:

1. demonstrate knowledge of the pathophysiology, risk factors, symptoms, detection, and prognosis for breast cancer;
2. exhibit an understanding of the therapeutics of lapatinib including its pharmacologic and toxicologic profile, along with the role of targeted therapy for breast cancer; and
3. select examples of information to convey to patients on Tykerb therapy.

An estimated 178,480 new cases of invasive breast cancer are expected to occur among women in the United States during 2007. Breast cancer is the most frequently diagnosed cancer in women. Metastatic breast cancer is the leading cause of death from cancer among women around the globe, accounting for more than 400,000 deaths each year.

Signs and Symptoms. The earliest sign of breast cancer is most commonly an abnormality – a lump or mass – detected within the breast on a mammogram. Larger tumors may become noticeable as a painless mass. Other (less common) symptoms include changes to the breast such as distortion, scaliness, skin irritation, swelling, tenderness or thickening, or abnormalities to the nipple such as retraction, a spontaneous discharge other than breast milk, or ulceration. Breast pain from benign conditions is typically not an early symptom of breast cancer. Stromal invasion and metastasis to regional lymph nodes or distant organs are the hallmarks of fully developed breast carcinomas.

Most patients with breast cancer have disease localized to the breast and axillary (armpit) lymph nodes. Approximately half of the patients initially diagnosed with early breast cancer may develop metastatic disease.The most common sites of metastatic disease are bone, liver, lungs, skin, and brain.

Risk Factors. Age is the most important factor associated with development of breast cancer in women. Breast cancer is rare in women under 30 years of age; half of all breast cancers are diagnosed in women older than 60 years of age. Risk is also increased by high breast tissue density, hyperplasia (especially atypical hyperplasia), following a large dose of radiation to the chest as a result of medical procedures, by inherited genetic mutations in the BRCA1 and BRCA2 genes, and a family history of breast cancer. Having a first-degree relative (mother, sister, or daughter) with breast cancer increases a woman's risk, while having more than one first-degree relative who has or had breast cancer before the age of 40, or in both breasts, increases a woman's risk even more. Most women with breast cancer, however, do not have a first-degree relative with the disease. Reproductive factors, including a long history of menstrual periods (starting early and/or ending late in life), never having children or having the first child after age 30, and recent use of oral contraceptives increase the risk.

Other factors that increase the risk include being overweight or obese following menopause, use of postmenopausal hormone therapy (especially combined estrogen/progestin therapy), physical inactivity, and consumption of one or more alcoholic beverages every day.

In contrast, risk is lowered by breastfeeding, moderate to vigorous physical activity, and maintaining a healthy body weight. Tamoxifen (Nolvadex, etc.) decreases breast cancer risk in women known to be at increased risk. Raloxifene

Table 1
Screening Guidelines for Early Detection of Breast Cancer in Asymptomatic Women

- Yearly mammograms are recommended starting at age 40.
- Clinical breast examination (as part of a periodic health examination) about every 3 years for women in their 20s and 30s, and every year for women 40 and older.
- Women should know how their breasts normally feel and report any change promptly to their physician. Breast self-exam is an option for women starting in their 20s.
- Women at increased risk (e.g., family history, genetic tendency, past breast cancer) should discuss with their physician about the benefits and limitations of starting mammography screening earlier, having additional tests (i.e., breast ultrasound and MRI), or having more frequent examinations.

(Evista) is as effective as tamoxifen in reducing the risk of invasive breast cancer in post-menopausal women, but is not approved for this purpose. Mutations in the BRCA1 and BRCA2 genes account for approximately 5 to 10 percent of all breast cancer cases; however, widespread testing for these mutations is not recommended at this time since they are present in less than 1 percent of women in the general population. Women with a strong family history of breast cancer may be counseled to determine if genetic testing is appropriate. Prophylactic removal of the breasts in BRCA1 and BRCA2 mutation carriers decreases the risk considerably.

Detection. The earlier breast cancer is discovered, the better the chance for successful treatment, thus enhancing the survival rate. A mammogram is currently the best method to detect cancers because it can often identify breast abnormalities that may be cancerous before symptoms appear. Guidelines for early detection of breast cancer in asymptomatic women are presented in Table 1.

Magnetic resonance imaging (MRI) is more sensitive than mammography in detecting tumors in women. However, MRI leads to more false-positive results than mammography. Such false-positive outcomes can lead to a high number of otherwise avoidable biopsies, thus creating unnecessary fear, anxiety, and other adverse health effects. It is important to carefully select those women who should be screened using this technology.

For women at high risk, the American Cancer Society recommends MRI and mammograms at age 30 unless otherwise determined by their physician. The 2007 guideline recommends MRI screening in addition to mammography for women who meet at least one of the following conditions:

- a BRCA1 or BRCA2 mutation;
- a first-degree relative with a BRCA1 or BRCA2 mutation, even if they have yet to be tested themselves;
- their lifetime risk of breast cancer is determined to be 20 to 25 percent or greater;
- they received radiation therapy to the chest between 10 and 30 years of age; and
- they have Li-Fraumeni syndrome, Cowden syndrome, or Bannayan-Riley-Ruvalcaba syndrome, or have one of these syndromes in first-degree relatives.

Treatment. Treatment may involve lumpectomy (surgical removal of the tumor with clear margins) or mastectomy (surgical removal of the entire breast) with removal of some axillary lymph nodes. It may also involve chemotherapy, radiation therapy, hormone therapy (tamoxifen; aromatase inhibitors, e.g., anastrozole/Arimidex, letrozole/Femara), or targeted biologic therapy, described subsequently. Trastuzumab (Herceptin) is a humanized monoclonal antibody that binds to the extracellular domain of the HER2 protein, a key component in the treatment of metastatic and early-stage HER2-positive breast cancer. Optimal management of breast cancer remains a significant therapeutic challenge, and multiple therapies are often used. Unless cancer has spread to the skin, chest wall, or distant organs, many studies have confirmed that long-term survival following lumpectomy plus radiation therapy is comparable to survival rates following mastectomy, and this procedure has replaced mastectomy as the preferred surgical approach for treating women with early stage breast cancer.

The percentage of DCIS (ductal carcinoma in situ) that would advance to invasive breast cancer without treatment is not known. Data from mammography screening trials suggest that the majority of such tumors will progress, and all patients with DCIS should be treated. Treatment options include lumpectomy with radiation therapy, or mastectomy. Either procedure may be followed with tamoxifen.

Current treatment goals for management of metastatic or advanced breast cancer include a delay in disease progression, prolongation of survival, amelioration of symptoms, and optimizing quality of life. Several factors influence the decision regarding treatment choices for metastatic cancer and include the patient's overall condition (e.g., presence of comorbidities), sites of metastases, previous treatment regimens, and biologic characteristics of the tumor. In addition, treatment of specific complications localized to selective tissues is now used routinely. Bisphosphonates (e.g., alendronate/Fosamax, ibandronate/Boniva, risedronate/Actonel) for example, can be used to reduce bone pain and other skeletal events in women with advanced breast cancer.

Targeted Therapy. Traditional cancer therapies (i.e., chemotherapeutics) have historically been developed without identification of a tumor-specific molecular profile that would predict their response. Patients were, therefore, at high risk of a wide variety of adverse effects from relatively non-specific

(non-targeted) treatments that may provide only limited therapeutic benefit. Recent advances in oncology have provided greater understanding of the biologic processes that regulate tumor cell growth, including their chemical characteristics, leading to the development of targeted cancer therapy.

The tyrosine kinase inhibitors (e.g., imatinib/Gleevec, erlotinib/Tarceva, gefitinib/Iressa), and more recently lapatinib (Tykerb) represent a class of targeted cancer drugs that has been developed based on these advances. These enzymes regulate multiple cellular processes that contribute to tumor development and progression, including cell growth, differentiation, migration, and apoptosis (natural or programmed cell death). Alteration of tyrosine kinase signaling can result in malignant transformation. The human genome encodes 90 proteins with tyrosine kinase domains, and many human tumors, including some breast cancers, display aberrant activation of tyrosine kinases caused by genetic alterations. For tumors whose growth is driven by these activated kinases, targeted drugs can potentially inhibit or reverse malignant progression.

Lapatinib, the latest of the approved tyrosine kinase inhibitors, is a small molecule that was designed to enter cells and selectively inhibit the tyrosine kinase activity of two members of the human epidermal growth factor receptor (HER) family, and is classified as a dual tyrosine kinase inhibitor. Receptor tyrosine kinases are divided into roughly 20 subfamilies, one of which is the HER subfamily consisting of four members: HER1 (ErbB1), HER2 (HER2/neu, ErbB2), HER3 (ErbB3), and HER4 (ErbB4). All members of this family have common structures. The dual inhibitory nature of lapatinib is unique, making the drug a promising addition to targeted cancer therapy. Moreover, metastatic breast cancer eventually develops resistance to trastuzumab and the cancer may return after adjuvant therapy. Early enzyme inhibitors are selective for only HER1 tyrosine kinase, while lapatinib inhibits both HER1 and HER2 including in women with HER2-positive metastatic breast cancer that has progressed after treatment with trastuzumab. HER2 is amplified and overexpressed in 20 to 25 percent of breast cancers. Several studies have demonstrated that breast cancers that overexpress HER2 have a more aggressive course, and higher relapse and mortality rates.

Survival. A five-year survival rate for cancer defines the percentage of patients alive at five years after diagnosis, whether disease-free, in remission, or under treatment. It does not imply that five-year survivors have been permanently cured of cancer.

Five-year survival for localized breast cancer (malignant cancer that has not advanced to lymph nodes or other non-breast tissues) has improved from 80 percent in the 1950s to 98 percent today. The five-year survival rate for cancer that has spread regionally (i.e., outside the original site but not to distant sites) is 83 percent. The rate for women with distant metastases is 26 percent. Survival at 10 years for all breast cancer at any stage, combined, is 80 percent, compared to 89 percent at five years.

Lapatinib (Tykerb)

Lapatinib has shown promise in results of clinical trials to be an additional tool for treating breast cancer that overexpresses the HER2 protein. Such tumors are particularly aggressive and difficult to treat.

Mechanism of Action/Activity. Lapatinib is a potent and reversible inhibitor of tyrosine kinase that mimics ATP and binds to the ATP binding site of tyrosine kinase. As a result, lapatinib blocks ATP from binding to tyrosine kinase and therefore inhibits the enzyme from using ATP as a cofactor for phosphorylation of tyrosine residues. As a result, the drug improves the treatment outcome of advanced breast cancer.

Geyer and associates studied 324 patients with locally advanced or metastatic breast cancer that had progressed after initial chemotherapy plus trastuzumab. Patients were randomly assigned to receive treatment with capecitabine (Xeloda), either alone or in combination with lapatinib. The primary end point was the time to progression, defined as the time from randomization to disease progression or death due to breast cancer. The median time to progression for the capecitabine-only group was 4.4 months versus 8.4 months for the combination-therapy group. The combination-therapy group also showed a higher tumor response rate (22 versus 14 percent), and fewer patients in the combination group had CNS metastases (4 versus 11 patients). There was no difference in survival between the two groups: 22 percent of patients had died by the end of the reported study.

Adverse effects were similar in the two groups except for diarrhea, dyspepsia, and rash, which, as expected, were more common in the combination-therapy group. Adverse events led to discontinuation of therapy in less than 15 percent of patients in either group. Cardiac toxicity was minimal in both groups.

Adverse Effects. The safety and adverse effects profile of lapatinib over a wide dosage range has been established in patients with cancer. Overall, lapatinib is remarkably well tolerated. The most frequently reported adverse effects over a dosage range of 500 to 1600 mg daily in Phase I clinical trials were diarrhea (42 percent), rash (31 percent), nausea (13 percent), and fatigue (10 percent). Of 140 reported drug-related adverse events, 135 were mild or moderate and five were judged severe (abdominal cramping, diarrhea, gastroesophageal reflux disease likely due to large pill burdens, rash). In all

Table 2
Patient Information for Tykerb

- Read the patient information provided by the manufacturer carefully before you start taking this medicine, and each time you get your prescription filled.
- Tell your doctor if you have heart or liver problems.
- Tell your doctor if you have ever had an allergic reaction to Tykerb or any other ingredient of this medicine. A list of ingredients is printed in the patient information leaflet that comes with this medicine.
- Take this medicine exactly as prescribed. The usual dose is 5 tablets taken at the same time once a day, in 21 day cycles. It should be taken at least 1 hour before or after a meal.
- This medicine is to be taken with another medicine called capecitabine (Xeloda), which is taken twice a day.
- The manufacturer warns not to eat or drink grapefruit products while taking this medicine.
- Tell your doctor about all other prescription and nonprescription (OTC) medicines, vitamin/mineral supplements, natural products and herbal remedies you are taking.
- If you forget to take a dose, take it as soon as you remember that day. If you miss a day, do not double your dose the next day. Just skip the missed dose.
- Store this medicine at room temperature in a tightly closed container.
- Women: The manufacturer warns that this medicine may harm an unborn baby. Notify your doctor if you become pregnant or intend to become pregnant. Consult your doctor before nursing a child while taking this medicine.

Phase I studies, the most frequently reported adverse effects at daily dosages up to 1800 mg have been rash, diarrhea, nausea, fatigue, and anorexia. Adverse effects in all published results from Phase II trials are nearly identical to those observed in Phase I trials. The majority of these were either mild to moderate, with one severe adverse event (death secondary to pulmonary embolism) reported as possibly due to lapatinib.

Data from clinical trials indicate that the new drug is safe and generally well tolerated at daily doses up to 1800 mg. Adverse events secondary to lapatinib have been rare in clinical trials.

Drug Interactions. Tykerb is likely to increase the action and adverse effects of concomitantly administered drugs that are metabolized by CYP3A4 or CYP2C8. Concomitant use of strong CYP3A4 inhibitors (e.g., ketoconazole, itraconazole, clarithromycin, atazanavir, indinavir, nelfinavir, ritonavir, saquinavir, telithromycin, and voriconazole) should be avoided. If any of these drugs must be given, the physician should consider dose reduction of Tykerb.

Concomitant use of strong CYP3A4 inducers (e.g., dexamethasone, phenytoin, carbamazepine, rifampin, rifabutin, rifapentin, phenobarbital) should be avoided, if possible. If unavoidable, the physician should carefully titrate the dose.

The manufacturer states that patients taking Tykerb should not eat or drink grapefruit products, and should not take St. John's Wort.

Indications and Uses. Tykerb is indicated for use in combination with capecitabine for patients with advanced, metastatic breast cancer that is HER2 positive. The combination treatment is indicated for patients who have received prior therapy with other cancer drugs, including an anthracycline, a taxane, and trastuzumab.

Dosage, Administration, and Availability. The recommended dose of Tykerb is 1,250 mg orally once daily on Days 1-21 continuously, in combination with Xeloda 2,000 mg/m^2/day (administered orally in two doses approximately 12 hours apart) on Days 1-14 in a repeating 21-day cycle. Tykerb should be taken at least one hour before or one hour after a meal. Dividing the daily dose of Tykerb is not recommended. Xeloda should be taken with food or within 30 minutes after food. If Tykerb's dose is missed, the patient should not double the dose the next day. Treatment should be continued until disease progression or unacceptable toxicity occurs. Tykerb is supplied as oval, biconvex, orange, film-coated tablets containing 250 mg of lapatinib.

Patient Information. An extensive patient information leaflet is to be dispensed with each prescription for Tykerb; patients are advised to read the leaflet before taking the medication and with each refill. A summary of information to convey to patients is presented in Table 2.

Overview and Conclusions

Breast cancer is the most frequently diagnosed cancer in women in the United States and a public health problem worldwide. Tykerb is a dual tyrosine kinase inhibitor with potent activity selective for two members of the human epidermal growth factor receptor family, that are overexpressed in certain breast tumors. The new drug has been well tolerated in numerous clinical trials at therapeutic doses, with the most common adverse events being diarrhea and rash.

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Continuing Education Quiz

Women's Health: Breast Cancer and its Treatment: Focus on Lapatinib (Tykerb)

1. The earliest sign of breast cancer is most commonly:
   a. breast distortion, scaliness or skin irritation.
   b. abnormalities of the nipple such as retraction.
   c. swelling, tenderness or thickening of breast tissue.
   d. lump or mass detected on a mammogram.
2. The most common sites of metastases from early breast cancer include all of the following organs EXCEPT:
   a. bone. c. colon.
   b. liver. d. lungs.
3. The most important factor associated with development of breast cancer is:
   a. age. c. obesity.
   b. family history. d. progestin therapy.
4. Magnetic resonance imaging (MRI) leads to which of the following when compared to mammography?
   a. Fewer false-positive results
   b. More false-positive results
5. Which of the following is an aromatase inhibitor?
   a. Arimidex c. Herceptin
   b. Evista d. Tamoxifen
6. Which of the following are used to reduce bone pain and other skeletal events in women with advanced breast cancer?
   a. Aromatase inhibitors
   b. Bisphosphonates
   c. Prostaglandin inhibitors
   d. Narcotics
7. Lapatinib is a potent and reversible inhibitor of:
   a. aromatase.
   b. cytochrome oxidase.
   c. ribonuclease.
   d. tyrosine kinase.
8. The term apoptosis refers to which of the following?
   a. Cell differentiation
   b. Cell migration
   c. Cell death
   d. Cell growth
9. Tykerb is indicated for use in combination with:
   a. imatinib (Gleevec).
   b. gefitinib (Iressa).
   c. erlotinib (Tarceva).
   d. capecitabine (Xeloda).
10. The recommended dose of Tykerb is:
    a. 125 mg once daily.
    b. 200 mg every 12 hours.
    c. 1,250 mg once daily.
    d. 2,000 mg every 12 hours.

Women's Health: Breast Cancer and its Treatment: Focus on Lapatinib (Tykerb)

January 2008 ACPE **#129-047-07-009-H01**

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Note: Answer sheet may be copied as needed but original answers are required on each.

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COURSE EVALUATION

Evaluation Must Be Completed To Obtain Credit

How much time did this lesson require? _____

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Learning objectives on first page were addressed.

	1 Disagree - 5 Agree
Objective 1	1 2 3 4 5
Objective 2	1 2 3 4 5
Objective 3	1 2 3 4 5
Material was well organized and clear.	1 2 3 4 5
Content sufficiently covered the topic.	1 2 3 4 5
Material was non-commercial in nature.	1 2 3 4 5

Answer Sheet:

1. a b c d	6. a b c d
2. a b c d	7. a b c d
3. a b c d	8. a b c d
4. a b	9. a b c d
5. a b c d	10. a b c d

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Assessment of Pharmacy Technicians' Salary, Benefits, and Responsibilities in North Dakota

DAVID M SCOTT AND DIANE HALVORSON

Background: While the number of pharmacist workforce studies being published is growing, few studies report accurate information concerning the wages, benefits, and responsibilities of pharmacy technicians.

Objective: To evaluate the wages, benefits, and responsibilities of pharmacy technicians in North Dakota.

Methods: A mail survey for pharmacy technicians was modified based on the Wage and Benefit Survey for pharmacists used in the Upper Midwest Pharmacists Workforce Study. A list of responsibilities was added to this survey to represent technicians' responsibilities in North Dakota. A survey packet then was mailed to the 456 pharmacy technicians registered in North Dakota. A follow-up postcard and a second survey were mailed to nonrespondents at 4 and 8 weeks, respectively.

Results: Overall, 256 (56.1%) completed surveys were available for analysis. Pharmacy technicians reported that they worked in a primary employment setting (n = 228) an average of 36.8 hours per week and received an average of 2.3 weeks of vacation. The average hourly rate was $12.34 ($7.00–25.48) and the gross 2004 salary (excluding benefits) was $21,627 ($880–41,600). Hospitals had the highest average hourly pay rate ($12.40), followed by independent ($12.35) and chain ($12.01) pharmacies. Grandfathered technicians (those registered in 1994 when the registration requirement was passed in North Dakota) received the highest average hourly pay rate at $13.11, followed by 1 year, 2 year, and Pharmacist-Assisted Technician Self-Instructional Modules (PATSIM) graduates. The hourly rate for grandfathered pharmacy technicians who have since become certified ($13.30) was highest. Differences between certified and noncertified groups were $0.10 more for 1 year graduates and $0.20 for PATSIM graduates; the difference between grandfathered technicians and 2 year graduates was $0.30. Commonly reported benefits included paid vacation (80%), health insurance for the employee (67%), sick leave (56%), and tax-sheltered plans (54%). Other benefits received were discounts on purchases (61%) and discounts on prescription drugs (54%). Among the most frequently cited distributive functions that technicians perform in their work setting included retrieving products from stock, followed by working with inventory, checking in and putting away medications, filling routine stock supplies, and affixing prescription labels to containers.

Conclusions: Pharmacy technician wages, benefits, and responsibilities in North Dakota are reflective of levels of training, experience, and certification status. While similar assessments have been conducted on pharmacists in other states, there is a need for similar data on pharmacy technicians.

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Articles on the use and training of pharmacy technicians or supportive pharmacy personnel date back to the 1970s. Descriptions of early training programs were generally hospital-based.[1-3] In 1981, Stolar[4] presented the results of a national survey of hospitals, which showed that 75.4% of them used pharmacy technicians and that larger hospitals tended to use technicians more extensively than did smaller ones. Most of the pharmacy technicians were high school graduates who were trained informally on the job. In 1992, Raehl et al.[5] reported a positive association between pharmacy technician use and pharmacist provision of clinical pharmacy services. As pharmacists redesign their practices to assume a pharmaceutical care role, the importance of pharmacy technicians increases. Between 1991 and 1994, the Scope of Pharmacy Practice Project conducted a national study of pharmacy technicians in a variety of practice settings[6] that set the foundation for a model training curriculum and recommended a voluntary certification program.[7,8]

The Michigan Pharmacists Association in 1981 and the Illinois Council of Hospital Pharmacists in 1988 began administering certification examinations to pharmacy

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technicians. In 1996, the American Pharmaceutical Association (APhA) and the American Society of Health-System Pharmacists (ASHP) joined forces with these 2 state organizations to discuss emerging issues regarding technicians. A position paper was written regarding issues of registration, regulation, and training.[7,8] As a result of their efforts, the Pharmacy Technician Certification Board (PTCB) was formed to serve as the testing agency. The PTCB examination has been given to technicians from all areas of pharmacy practice on a voluntary basis, and approximately 250,000 pharmacy technicians have been certified.[9] PTCB certification is becoming the preferred criterion for technician employment in many pharmacy settings.

A key element in the profession's strategy for achieving pharmaceutical care is for the pharmacist to delegate routine functions to well-qualified, appropriately supervised pharmacy technicians.[7] The APhA/ASHP White Paper recommended that pharmacists should stimulate innovation in technician use to enhance the value of pharmacy's contributions to health care.[7,8] This report also stated that "although there is a compelling need for pharmacists to expand the purview of their professional practice, there is also a need for pharmacists to maintain control over all aspects, including dispensing and compounding."[7] Kennedy and Small[10] described pharmacy technician responsibilities in a pharmaceutical care model to include obtaining the prescription from the patient, completing intake data forms (medical and medication information), and entering prescription data. Desselle[11] reported on a national random survey of 3,200 Certified Pharmacy Technicians (CPhTs) concerning worklife attitudes by practice setting. CPhTs reported modest levels of job satisfaction, career commitment, and relatively low job turnover intention. While they perceived modestly high levels of support from supervisors and coworkers, they felt less support from their employers. The typical respondent was a white woman, 39 years of age, who was earning $12.87 per hour.

Background

At the North Dakota State College of Science (NDSCS), the pharmacy technician training program offers 2 on-campus program options. The program was established in 1994 and is designed to prepare students for careers performing and managing the distributive functions in pharmacies and pharmacy-related industries. One training option is a one year (39 academic credits) certificate. A second training option is the 2 year Associate in Applied Science degree. Both of these include internship of 8 weeks in community pharmacy and hospital pharmacy that occurs after all classroom requirements have been completed (www.ndscs.edu/phrmtech).

The Pharmacist-Assisted Technician Self-Instructional Modules (PATSIM) offer a standardized, all-inclusive, ASHP-accredited education for pharmacy technicians that can be earned on the job while being employed as a technician-in-training. The course can be completed through self-study at home. The PATSIM training program is a third NDSCS training option that was created in North Dakota to meet the needs of individuals living in rural areas who would have a difficult time (eg, housing costs and other student expenses, family considerations) in temporarily moving to a technical college offering a pharmacy technician program (Wahpeton on the east border of North Dakota).

A "grandfathered technician" is defined as one who registered in 1994 when the registration requirement was passed in North Dakota and did not complete one of the formal training programs in North Dakota. All pharmacy technicians (certified or not) are required to be registered with the North Dakota Board of Pharmacy.

▲

A "grandfathered technician" is defined as one who registered in 1994 when the registration requirement was passed in North Dakota and did not complete one of the formal training programs.

▼

A goal of the Northland Association of Pharmacy Technicians (NAPT) Board is to collect accurate information concerning the wages, benefits, and workload of pharmacy technicians working in North Dakota. Our objective in this study was to evaluate the wages, benefits, and responsibilities of pharmacy technicians.

Methods

SURVEY SAMPLE AND DISTRIBUTION

A mailing list of pharmacy technicians was obtained from the North Dakota State Board of Pharmacy. A survey packet was mailed to the 456 pharmacy technicians registered in North Dakota. Since the survey was intended for pharmacy technicians working in this state, the survey was mailed only to those with zip codes in North Dakota and to those living in those counties bordering North Dakota in Minnesota, Montana, and South Dakota. Each survey packet contained a letter of invitation, the survey, and postage-paid return envelope. Each survey

was assigned an identification number to track nonrespondents. A follow-up postcard was mailed 4 weeks after the initial mailing. A second survey packet was mailed to nonrespondents 8 weeks after the initial mailing.

DESIGN

A mail survey based on the Wage and Benefit Survey for pharmacists in the Upper Midwest Pharmacists Workforce Study[12] was modified for the pharmacy technician. To this survey, a list of technician responsibilities was added that was used in a previous survey of pharmacy technicians in Nebraska[13] and was adapted to represent technicians' responsibilities in North Dakota. Survey items (n = 24) included demographics, practice characteristics, work hours, compensation, benefits, and a list of responsibilities that are completed in the primary pharmacy setting and secondary practice setting. This survey was pilot-tested by asking 5 pharmacy technicians working in various practice settings to complete a survey and requesting feedback with respect to suggested revisions. The NAPT Board reviewed and approved a final draft of the survey and cover letter prior to the mailing.

DATA ENTRY AND ANALYSIS

All data were entered into an Excel spreadsheet (Microsoft Word 2000) and transferred into an SAS database.[14] Comparison of practice settings (community vs chain vs hospital), level of education, and training (grandfathered in, 1 year training program, 2 year training program, the PATSIM program, nationally certified) was done by χ^2 analysis for categorical measurements and *t*-test for interval level measurements. One-way ANOVA with Tukey's *t*-tests was conducted on practice setting and level of education where appropriate. An α level of 0.05 was used for all tests of significance.

Results

RESPONSE RATE

Overall, 456 surveys were initially mailed and 267 (58.6%) were returned from pharmacy technicians working in North Dakota. Eleven refused to participate or sent back a blank survey, resulting in 256 (56.1%) respondents. Twenty-eight participants were eliminated from analysis (5 not practicing, 2 retired, 13 employed in a nonpharmacy career, 8 unemployed). Of the final respondent sample, 2 technicians were semi-retired (still practicing) and 226 were practicing; thus, 228 were left for further analysis.

CHARACTERISTICS

Table 1 summarizes respondent characteristics by practice setting and training level. Most technicians were female and white. Level of education and training of the responding pharmacy technicians included: 44.3% as a part of the original grandfathering of pharmacy technicians in North Dakota, 14.5% as a graduate of a 1 year pharmacy technician program, 22.4% as a graduate of a 2 year pharmacy technician program, 26.3% as a graduate of the PATSIM Program of NDSCS, and 57.9% as certified with the PTCB (n = 132).

In comparison with independent and chain settings, pharmacy technicians working at hospitals generally were older, had worked longer in their current primary work facility, and tended to be grandfathered. Those grandfathered tended to be older, spent more years working as a pharmacy technician, and spent more years working at their current work facility compared with technicians with the other levels of training. When tested by one-way ANOVA, each of the 3 variables had a significant F-value, and contrasting *t*-tests showed a statistically significant difference between those grandfathered versus the 1 year training, 2 year training, and PATSIM program.

PHARMACY PRACTICE CHARACTERISTICS

Data on practice settings are shown in Table 2. Unique to our state is the North Dakota Telepharmacy Project, and 6 reported working in a telepharmacy remote site (pharmacist at another site supervises via audio-video links) and 3 at a telepharmacy central site (pharmacists at the same site). More prescriptions were filled in the chain setting than in independent pharmacies and hospitals. There were more technicians working in chains and hospitals than in independents in urban locations and relatively more in independents in rural locations.

Table 2 also reports on pharmacy practice setting characteristics by the level of training. A higher percentage of grandfathered technicians compared with the other training levels worked in independent settings. More prescriptions were filled by 1 year graduates, followed by 2 year graduates, those grandfathered, and PATSIM graduates. One- and 2 year graduates were more likely to work in urban than rural areas. Respondents in the PATSIM program were more likely to work in rural areas. Grandfathered technicians were relatively evenly distributed in rural and urban areas.

WORK HOURS AND COMPENSATION

Table 3 shows the data on hours worked and compensation in the respondents' primary practice setting. Some (n = 15) pharmacy technicians reported working in a secondary employment setting. An average of 11.4 hours (range: 1 to 40) and an additional gross salary of $6759 (range: $1040 to $16,400) was received.

Table 3 also summarizes work hours and compensation by practice setting. Those who worked in hospitals had the highest average hourly pay rates and the highest gross average salary. Technicians employed in indepen-

Table 1. Pharmacy Technician Characteristics by Practice Setting and Training Level

	PRACTICE SETTING								TRAINING LEVEL							
	TOTAL (n = 228)		INDEPENDENT (n = 104)		CHAIN (n = 37)		HOSPITAL (n = 50)		GRANDFATHERED (n = 101)		1 YEAR (n = 33)		2 YEAR (n = 51)		PATSIM (n = 60)	
VARIABLE	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Employment status																
practicing as a pharmacy technician	226	99.1	102	98.1	37	100.0	50	100.0	100	99.0	33	100.0	51	100.0	60	100.0
retired, but still working as a pharmacy technician	2	0.9	2	1.9	0	0.0	0	0.0	2	2.0	0		0		0	
Sex																
male	14	6.1	7	6.7	1	2.7	6	12.0	7	6.9	1	3.0	5	9.8	2	3.3
female	214	93.9	97	93.3	36	97.3	44	88.0	94	93.1	32	97.0	46	90.2	58	96.7
Ethnic or racial background																
American Indian	4	1.8	3	2.9	0		1	2.0	1	1.0	0		3	5.9	1	1.7
Asian	1	0.4	1	1.0	0		0		0		1	3.0	0		0	
Hispanic	1	0.4	0		0		0		0		0		0		0	
white	222	97.4	100	96.2	37	100.0	49	98.0	100	99.0	32	97.0	48	94.1	59	98.3
Level of education/training obtained[a]																
grandfathered 1 year	101	44.3	38	36.5	13	35.1	24	48.0	74	73.3	0		0		1	1.7
graduate of a 1 year program	33	14.5	8	7.7	4	10.8	7	14.0	0		19	57.6	0		1	1.7
graduate of a 2 year program	51	22.4	21	20.2	7	18.9	12	24.0	0		0		40	78.4	6	10.0
graduate of the PATSIM program	60	26.3	35	33.7	13	35.1	8	16.0	1		1	3.0	6	11.8	48	80.0
PTCB certified	132	57.9	52	50.0	20	54.1	25	50.0	20	19.8	14	42.4	24	47.1	34	56.7
Age																
mean[b]	41.5		39.3		37.1		41.6		48.5		32		30.3		37.6	
SD	31.7		12.6		11.1		12.8		10.1		8.6		10.2		9.7	
Years worked as a pharmacy technician																
mean[c]	9.5		9.1		8.4		12.2		17.5		7.7		3.7		4.8	
SD	7.6		7.3		6.1		9.9		7.2		3.3		2.8		3	
Years at current primary setting																
mean[d]	8.8		8.5		9		11.5		15.5		5.7		3.4		6.1	
SD	8.2		7.5		7.2		10.7		9.3		3.7		3.4		4.6	

PATSIM = Pharmacist-Assisted Technician Self-Instructional Modules; PTCB Pharmacy Technician Certification Board.
[a]Respondents could select more than one choice.
[b]F-value = 29.32, df = 3, $p < 0.0001$.
[c]F-value = 68.47, df = 3, $p < 0.0001$.
[d]F-value = 27.58, df = 3, $p < 0.0001$.

Table 2. Pharmacy Practice Setting Characteristics by Practice Setting and Training Level[a]

	PRACTICE SETTING								TRAINING LEVEL							
	TOTAL (n = 228)		INDEPENDENT (n = 104)		CHAIN (n = 37)		HOSPITAL (n = 50)		GRANDFATHERED (n = 101)		1 YEAR (n = 33)		2 YEAR (n = 51)		PATSIM (n = 60)	
VARIABLE	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Primary pharmacy setting																
independent community pharmacy	104	45.6	104	100.0					38	37.6	8	24.2	12	23.5	10	16.7
telepharmacy (pharmacist at another site supervises via audio-video links)	6	2.6														
chain (>4 stores)	37	16.2			37	100.0			13	12.9	4	12.1	7	13.7	13	21.7
hospital	50	21.9					50	100.0	23	22.8	7	21.2	12	23.5	6	10.0
Location[b]																
urban (>25,000)	146	64.0	40	38.5	20	54.1	35	70.0	34	33.7	14	42.4	22	43.1	23	38.3
rural (<24,999)	132	57.9	60	57.7	15	40.5	14	28.0	37	36.6	4	12.1	16	31.4	32	53.3
Total prescriptions filled (n = 124)																
mean	202.1		199		250		207		208.8		241.6		236.1		198.1	
range	8–700		8–650		100–500		30–700		8–500		74–400		60–550		30–700	
Inpatient/LTC setting (n of beds = 37)																
mean	159.3						159.3		166.2		153.8		190.9		26.7	
range	20–430						20–430		20–430		65–300		20–400		20–35	

LTC = long-term care; PATSIM = Pharmacist-Assisted Technician Self-Instructional Modules.
[a]Items with an overall response less than 5 were deleted.
[b]Respondent may have answered more than once.

dent settings tended to work fewer average hours per week (35.8 hours) than did those working in chains (38.5 hours) and hospitals. Length of paid vacation was highest among hospital employees. While base salaries were lower for technicians working in independent pharmacies, additional compensation helped to minimize the difference.

BENEFITS

Table 4 summarizes the number and percentage of pharmacy technicians who reported benefits received by their employer (practice setting) at the time of this survey. Health insurance for the technicians was provided by the majority of institutions, and nearly one-half of the respondents had spouse, and dependent coverage. The most common retirement benefits were tax-sheltered retirement plans, followed by pension plans. For the vacation and leave category, the most frequently cited were paid vacations and sick leave. About one-third of the respondents reported maternity leave, nonpaid leave, and paid personal days. Other benefits included discounts on personal purchases, discounts on prescriptions, and flexible schedules. A similar pattern of distribution of benefits was reported among practice settings for most of the benefits. Chains tended to have the highest coverage of benefits, such as health insurance, followed by independents and hospitals. Independents and chains were more likely than hospitals to provide discounts on prescriptions. Paid vacation generally was provided in all 3 settings. Hospitals were most likely to provide sick leave, followed by chains and independents. Generally, the distribution of benefits (health insurance, paid vacation, sick leave) was similar for the various training levels. Overall, 1 year graduates reported slightly lower levels of benefits (health insurance, vacation) than the other training levels.

DISTRIBUTIVE RESPONSIBILITIES IN PRIMARY PRACTICE SETTINGS

Pharmacy technicians were asked whether or not (yes or no response) they performed certain listed distributive tasks or functions in their work setting (Table 5). Most respondents reported that pharmacy technicians were performing a number of distributive activities. Their most common responsibility was to retrieve products from stock.

Pharmaceutical care–related activities were also reported by participants: 26.8% (n = 61) counseled patients on nonprescription products, 21.5% (n = 49) assessed patient's adherence, and 8.3% (n = 19) performed drug monitoring assessments. In hospitals, pharmacy technicians were involved

Table 3. Work Hours and Compensation by Practice Setting and Training Level

VARIABLE[a]	PRACTICE SETTING				TRAINING LEVEL			
	TOTAL (n = 228) MEAN	INDEPENDENT (n = 104) MEAN	CHAIN (n = 37) MEAN	HOSPITAL (n = 50) MEAN	GRANDFATHERED (n = 101) MEAN	1 YEAR (n = 33) MEAN	2 YEAR (n = 51) MEAN	PATSIM (n = 60) MEAN
Scheduled weekly hours	36.8	35.8	38.5	37.1	36.9	35	37.2	36.4
Compensated overtime (n = 14)	3.5	3.8	4	2.4	2.8	4.0	2.5	5
Work weeks per year								
working (15–52)	48.5	49	48.7	47.7	48.9	47.9	46.8	49.7
paid vacation (0–6)	2.3	2.1	2.5	2.7	2.9	2.0	1.8	1.8
other paid or unpaid days away from work (0–60)	8.8	8.2	8.7	10	8.8	10.0	8.3	8.7
Base compensation (gross earnings)								
hourly rate ($) (n = 220)	12.34	12.35	12.01	12.40	13.11	12.49	11.68	11.54
range	7.00–25.48	8.50–25.48	8.50–16.69	8.54–18.15	8.50–25.48	10.25–17.00	8.50–20.00	8.50–15.76
number	177	97	36	48	70	19	40	48
gross 2004 salary ($, excludes benefits)	21,627	20,560	21,262	23,180	23,558	22,408	19,031	20,003
range	880–41,600	880–41,600	12,000–31,000	4119–37,900	3500–38,270	11,000–28,000	880–41,600	7000–37,600
number	132	72	26	38	52	12	30	38
Additional compensation ($)								
overtime (25–6000)	714	768	174	571	1109	70	321	288
number	28	13	5	11	10	1	7	10
bonus (35–10,000)	785	1,062	211	722	1,364	292	365	760
number	55	42	12	2	19	5	7	24
profit sharing (45–4000)	1,553	2,179	1,373	423	1,831	1,867	3,000	1,042
number	14	7	5	2	5	3	1	5
Other	593							

PATSIM = Pharmacist-Assisted Technician Self-Instructional Modules.
[a]Not all respondents answered some of these items.

with activities specific to that setting: 25.4% (n = 58) completed daily cart fill and 23.3% (n = 53) prepared intravenous solutions.

Most distributive responsibilities were done in all 3 settings; however, technicians employed in hospitals and independent pharmacies reported a slightly higher percentage compared with those working in chain settings. Generally, most responsibilities were similar among the various training levels. Overall, 1 year graduates reported a lower percentage of technicians completing those responsibilities (retrieve product from stock, affix prescription label to container, work with inventory) than for the other training levels.

CERTIFIED AND NONCERTIFIED TECHNICIANS' COMPENSATION AND BENEFITS

On average, 36.8 hours were worked each week and did not vary much based on the level of training. Length of paid vacation averaged 2.3 weeks per year, and grandfathered technicians had the highest level at 2.9 weeks per year, followed by 2.0 for 1 year and 1.8 for 2 year and PATSIM program graduates. Grandfathered technicians received the highest average hourly pay rate at $13.11, followed by 1 year, 2 year, and PATSIM graduates. There was a similar trend for gross 2004 salaries, with grandfathered technicians at the highest ($23,558) level, followed by 1 year ($22,408), PATSIM ($20,003), and 2 year graduates ($19,031). Overall, the hourly rate was slightly higher for certified pharmacy technicians. The hourly rate for grandfathered pharmacy technicians who have since become certified ($13.30) was highest. The differences between certified and noncertified groups were $ 0.10 for 1 year graduates, $0.20 for PATSIM graduates, and $0.30 for grandfathered technicians and 2 year graduates. Similarly, gross salary was highest for the certified grandfathered pharmacy technician ($26,458), followed by the noncertified grandfathered technician ($22,688). For the other groups, the certified technicians

Table 4. Benefits by Practice Setting and Training Level[a]

	PRACTICE SETTING								TRAINING LEVEL							
	TOTAL (n = 228)		INDEPENDENT (n = 104)		CHAIN (n = 37)		HOSPITAL (n = 50)		GRANDFATHERED (n = 101)		1 YEAR (n = 33)		2 YEAR (n = 51)		PATSIM (n = 60)	
VARIABLE[b]	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Insurance																
health, self	167	73.2	58	55.8	33	89.2	46	92.0	58	57.4	16	48.5	29	56.9	37	61.7
health, spouse	115	50.4	29	27.9	29	78.4	36	72.0	36	35.6	11	33.3	24	47.1	27	45.0
health, dependents	116	50.9	33	31.7	27	73.0	34	68.0	33	32.7	12	36.4	24	47.1	28	46.7
dental	113	49.6	24	23.1	29	78.4	40	80.0	37	36.6	13	39.4	22	43.1	25	41.7
life	103	45.2	20	19.2	28	75.7	34	68.0	32	31.7	10	30.3	20	39.2	23	38.3
disability	83	36.4	21	20.2	18	48.6	27	54.0	29	28.7	8	24.2	15	29.4	16	26.7
Savings/retirement																
tax-sheltered plan (401k)	135	59.2	47	45.2	30	81.1	38	76.0	48	47.5	13	39.4	24	47.1	34	56.7
retirement/pension plan	84	36.8	22	21.2	10	27.0	33	66.0	27	26.7	8	24.2	17	33.3	13	21.7
Vacation/leave																
maternity	97	42.5	30	28.8	17	45.9	31	62.0	32	31.7	8	24.2	18	35.3	20	33.3
nonpaid	85	37.3	28	26.9	14	37.8	23	46.0	23	22.8	5	15.2	21	41.2	22	36.7
sick	140	61.4	48	46.2	26	70.3	41	82.0	46	45.5	14	42.4	21	41.2	35	58.3
vacation	203	89.0	89	85.6	34	91.9	45	90.0	69	68.3	18	54.5	33	64.7	48	80.0
personal days	77	33.8	19	18.3	12	32.4	27	54.0	24	23.8	11	33.3	13	25.5	13	21.7
Other benefits																
flexible schedule	89	39.0	37	35.6	19	51.4	17	34.0	25	24.8	6	18.2	16	31.4	27	45.0
discounts on personal purchase	153	67.1	85	81.7	32	86.5	14	28.0	53	52.5	11	33.3	29	56.9	41	68.3
discounts on prescriptions	136	59.6	75	72.1	28	75.7	13	26.0	43	42.6	10	30.3	28	54.9	39	65.0

PATSIM = Pharmacist-Assisted Technician Self-Instructional Modules.
[a]Items with an overall response rate of <30.0% deleted.
[b]Scale: received benefit; 1 = yes, 2 = no.

reported higher gross salaries than the noncertified technicians (Table 6).

Table 6 also summarizes benefits for each training level by certified and noncertified pharmacy technician groups. Generally, certified pharmacy technicians were more likely to receive benefits (health insurance, dental insurance, tax sheltered plans, paid vacation) than were noncertified technicians. One exception is that noncertified 2 year graduates were more likely than the certified graduates group to receive those benefits.

COMMENTS

Pharmacy technicians were asked in an open-ended response format to comment on the survey concerning workforce issues that they had. Several technicians expressed favorable comments concerning the survey and felt that it was needed to determine the wages, benefits, and responsibilities in North Dakota. It is quite apparent that some technicians are experiencing stress and tension in the work environment. Since many of the distributive responsibilities are delegated to them, the technicians typically expressed a desire to be adequately compensated. Several felt underpaid and have found jobs outside of pharmacy that pay as much or more and are less stressful and more rewarding. Thirteen (5.1%) of the respondents were employed in a nonpharmacy setting. Two technicians reported that they feel they are not valued and respected by the pharmacists for whom they work. For instance, a technician reported, "I feel for what is required to know and to do as a registered pharmacy technician, we are underpaid! But I love what I do and at the age of 41, I don't plan to go to college to become a pharmacist. But would really like to see the technicians getting the respect and wage we deserve!" A second technician stated, "I find the field of pharmacy technicians is one of the most unappreciated fields of work that I have ever done. The technicians fill 98% of the scripts on a daily basis and 100% of the work in the long term area of the pharmacy with very little respect from a pharmacist and the pay is not impressive. Some of the technicians I have met in the past will not go into the field of pharmacy, due to the lack of appreciation and respect as well as poor pay." These issues or problems related to

Table 5. Pharmacy Technician Responsibilities in Primary Pharmacy Practice Setting and by Training Level

RESPONSIBILITY DESCRIPTION[a,b]	TOTAL (n = 228)		PRACTICE SETTING: INDEPENDENT (n = 104)		PRACTICE SETTING: CHAIN (n = 37)		PRACTICE SETTING: HOSPITAL (n = 50)		TRAINING LEVEL: GRANDFATHERED (n = 101)		TRAINING LEVEL: 1 YEAR (n = 33)		TRAINING LEVEL: 2 YEAR (n = 51)		TRAINING LEVEL: PATSIM (n = 60)	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Retrieve product from stock	220	96.5	102	98.1	32	86.5	50	100.0	73	72.3	18	54.5	38	74.5	55	91.7
Count solid dosage forms	209	91.7	99	95.2	32	86.5	45	90.0	69	68.3	18	54.5	36	70.6	54	90.0
Fill routine stock supplies	215	94.3	99	95.2	33	89.2	49	98.0	71	70.3	18	54.5	37	72.5	55	91.7
Pour liquid dosage forms	206	90.4	99	95.2	33	89.2	49	98.0	67	66.3	18	54.5	37	72.5	54	90.0
Receive written prescription from patient	186	81.6	102	98.1	33	89.2	20	40.0	58	57.4	14	42.4	33	64.7	49	81.7
Input prescriptions into computer	177	77.6	84	80.8	31	83.8	28	56.0	52	51.5	15	45.5	34	66.7	44	73.3
Affix prescription label to a container	214	93.9	102	98.1	32	86.5	44	88.0	68	67.3	18	54.5	37	72.5	54	90.0
Request refill authorization from the prescriber	162	71.1	92	88.5	30	81.1	9	18.0	46	45.5	11	33.3	30	58.8	44	73.3
Obtain patient medication history information	172	75.4	90	86.5	33	89.2	18	36.0	50	49.5	13	39.4	30	58.8	46	76.7
Order from wholesaler to maintain adequate stock	187	82.0	90	86.5	29	78.4	35	70.0	59	58.4	16	48.5	32	62.7	47	78.3
Work with inventory, checking in and putting away medication order	218	95.6	104	100.0	33	89.2	44	88.0	70	69.3	18	54.5	37	72.5	56	93.3
Responsible for outdated drug products	174	76.3	76	73.1	25	67.6	41	82.0	44	43.6	12	36.4	36	70.6	48	80.0

[a]Scale: received benefit; 1 = yes, 2 = no.
[b]Items with an overall response rate of <70.0% deleted.

respect in the workplace suggest that pharmacists may benefit from a seminar or presentation on awareness of this important issue and the need to value all of their employees and look into ways to motivate and reward technicians in the workplace.

Discussion

CHARACTERISTICS

Respondents were typically white, middle-aged, and female, and had practiced for 10 years as a pharmacy technician. Sample characteristics of North Dakota pharmacy technicians were generally similar to those reported in other pharmacy technician workforce studies.[11,13] Mean prescription fill levels were higher in chain store settings (average 250/day) than in the independent store settings (average 199/day). In North Dakota, a greater proportion of pharmacy technicians work in independent store settings than in chain stores. This finding was expected, as North Dakota has a 51% ownership law, which requires that North Dakota–licensed pharmacists own 51% of each pharmacy. This law has restricted the number of publicly held chain stores and is an advantage to independent community pharmacy owners. The 2004 National Pharmacist Workforce Study reported a greater proportion of pharmacists working in chain store settings (27.7%) than in independent store settings (18.1%).[15] While national pharmacy technician workforce information is not available, it is reasonable to assume that there are more technicians working in chain stores than in independent community pharmacies.

WORK HOURS AND COMPENSATION

Desselle's[11] study of CPhTs reported modest levels of job satisfaction and career commitment and relatively low job turnover intention. While they perceived modestly high levels of support from supervisors and coworkers, they felt less support from their employers. The typical respondent was a white woman, 39 years of age, who was earning $12.87 per hour compared with the $12.34 per hour reported by our respondents, which is a $0.53 difference. Since the Desselle hourly rate information was collected in January 2004, this figure should be adjusted by the consumer price index to reflect a comparative 2005 hourly rate ($12.87 × 1.04 = $13.39). With this adjustment factor, there is a difference of $1.05 per hour (or $2,080 × 1.05 = $2,184 per year). While not directly measured, an assessment of comments from our survey provides support for Desselle's findings concerning job satisfaction and career commitment.

Technicians reporting their hourly rate of pay had a higher response rate (72.2% for certified, 68.3% for

Table 6. Compensation and Benefits for Training Level by Certified and Noncertified Pharmacy Technicians[a]

	GRANDFATHERED				1 YEAR				2 YEAR				PATSIM				TOTAL	
	CF (n = 26)		NCF (n = 75)		CF (n = 22)		NCF (n = 11)		CF (n = 35)		NCF (n = 16)		CF (n = 43)		NCF (n = 17)		CF (n = 126)	NCF (n = 119)
Variable[b]	**mean**		**mean**		**mean**		**mean**		**mean**		**mean**		**mean**		**mean**		**mean**	**mean**
Compensation																		
hourly rate, $ (n = 220)	13.3		13		12.5		12.4		11.8		11.5		11.6		11.4		12.3	12.1
minimum	10		8.5		10.3		11		10		8.5		8.5		10		8.5	8.5
maximum	17		25.5		17		13		14.4		20		15.8		15.5		17	25.5
number	19		51		14		5		24		16		34		14		91	86
Gross 2004 salary, $ (excludes benefits)	26,458		22,688		21,613		24,000		18,732		19,422		19,911		20,261		21,679	21,593
minimum	21,000		3500		11,000		22,000		4400		880		7000		14,000		4400	880
maximum	36,000		38,270		28,000		26,000		31,142		41,600		37,600		28,900		37,600	41,600
number	12		40		8		4		17		13		28		10		65	67
Variable[c,d]	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**		
Insurance																		
health, self	19	73.1	39	52.0	12	54.5	4	36.4	17	48.6	12	75.0	25	58.1	5	29.4		
health, spouse	12	46.2	24	32.0	8	36.4	3	27.3	13	37.1	11	68.8	19	44.2	2	11.8		
health, dependent	12	46.2	21	28.0	9	40.9	3	27.3	14	40.0	10	62.5	21	48.8	2	11.8		
dental	15	57.7	22	29.3	9	40.9	4	36.4	12	34.3	10	62.5	16	37.2	3	17.6		
life	14	53.8	18	24.0	8	36.4	2	18.2	12	34.3	8	50.0	16	37.2	3	17.6		
disability	12	46.2	17	22.7	6	27.3	2	18.2	10	28.6	5	31.3	11	25.6	2	11.8		
Savings/retirement																		
tax-sheltered plan	15	57.7	33	44.0	10	45.5	3	27.3	13	37.1	11	68.8	21	48.8	7	41.2		
retirement/pension plan	7	26.9	20	26.7	5	22.7	3	27.3	12	34.3	5	31.3	8	18.6	2	11.8		
Vacation/leave																		
maternity	11	42.3	21	28.0	7	31.8	1	9.1	11	31.4	7	43.8	13	30.2	3	17.6		
nonpaid	5	19.2	18	24.0	4	18.2	1	9.1	13	37.1	8	50.0	10	23.3	5	29.4		
sick	12	46.2	34	45.3	9	40.9	5	45.5	14	40.0	7	43.8	27	62.8	3	17.6		
vacation	19	73.1	50	66.7	13	59.1	5	45.5	21	60.0	12	75.0	31	72.1	11	64.7		
personal days	13	50.0	11	14.7	8	36.4	3	27.3	9	25.7	4	25.0	8	18.6	1	5.9		
Other benefits																		
flexible schedule	11	42.3	14	18.7	4	18.2	2	18.2	8	22.9	8	50.0	17	39.5	6	35.3		
discounts on purchases	17	65.4	36	48.0	8	36.4	3	27.3	15	42.9	14	87.5	24	55.8	10	58.8		
discounts on prescriptions	11	42.3	32	42.7	7	31.8	3	27.3	15	42.9	13	81.3	23	53.5	9	52.9		

CF = certified; NCF = noncertified; PATSIM = Pharmacist-Assisted Technician Self-Instructional Modules.
[a]Certified, n = 126; noncertified, n = 119.
[b]Not all respondents answered some of these items.
[c]Scale: received benefit; 1 = yes, 2 = no.
[d]Items with an overall response of <30.0% deleted.

noncertified) compared with those reporting their gross salary (51.6% for certified, 53.2% for noncertified). One explanation for this difference is attributed to a lower response rate for this section of the questionnaire on a sensitive issue. Nonrespondent bias is considered a possibility and is a shortcoming of this study.

BENEFITS

At the time of this survey, health insurance for the employee was provided by 73.3% of the institutions, and nearly one-half of the respondents also had spouse and dependent coverage. Among savings and retirement benefits, the most common type was tax-sheltered retirement plans. In the vacation and leave category, the most frequently cited benefit was paid vacations, followed by sick leave, maternity leave, nonpaid leave, and paid personal days. These results have not been reported in other technician studies,[11,13] so comparison with national data or other state data is not possible. A similar distribution of benefits was reported among practice settings. Generally, the distribution of benefits was similar for the various training levels. Overall, 1 year graduates reported slightly lower levels of benefits than the other training levels. Certified pharmacy technicians were more likely to receive benefits than were noncertified technicians.

DISTRIBUTIVE RESPONSIBILITIES

A slightly higher percentage of technicians working in completed hospitals and independents reported performing distributive responsibilities compared with technicians working in chain settings. A lower percentage of 1 year graduate technicians reported completing responsibilities compared with those in the other training levels.

STUDY LIMITATIONS

One limitation of this study is the self-reported nature of the data. Actual pharmacy technician functions can be determined only by using direct observation techniques or work sampling techniques, but these were beyond the scope of this study. Another probable limitation is the low response rate for a few of the survey items. While most (59.7%) of the respondents answered all items, fewer respondents answered the gross salary item, which may have affected the actual reported gross salary levels. However, most (79.4%) respondents did provide the hourly rate; that information is a more accurate reflection of actual pay than the gross salary item.

Conclusions

While there are a number of pharmacist workforce studies examining wages, benefits, and other workforce issues, there are very few pharmacy technician studies. Our findings show that pharmacy technicians are being used for distributive functions at a moderate to high level. Since this study involved only North Dakota, these findings cannot be generalized to other states. Further national research that is similar in methodology to that used in the National Pharmacy Workforce Consortium studies should be conducted in this area (wages, benefits, responsibilities). ≃

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MISC0142-03-07

NAPT Updates

By Brittany Muchow – NAPT Presidnet

- NAPT will be offering traveling meetings in February. We will be traveling to all 8 districts or their surrounding areas to have a district meeting and offer a 1 hour CE. It will be your chance to voice any comments, questions, or concerns to the NAPT Board. If you are interested in assisting in the setting up of these meetings in your district, please contact any member of the board.

- The NAPT Executive Board meeting minutes are posted on the NDPhA website.

• www.nodakpharmacy.net
• Select "Connect Rx" from the menu bar
• Enter your username and password

Note: If you have trouble accessing this site, please contact Lori Giddings at the NDPhA office.

- The NAPT Executive Board is attempting to recruit any ND registered Pharmacy Technician who would like to serve on the board. If you are interested in possibly accepting this role, please contact any member of the current NAPT Executive Board and we can provide you with the information on the positions and hopefully add your name to the list. The following positions are available:

• Vice-President-Elected position with a 3 year commitment (vice-president to past-president)
• Treasurer-Elected position with a 2 year commitment
• Secretary-Elected position with a 1 year commitment
• Parliamentarian-Appointed position with a 1 year commitment
• Member At Large (2)-Appointed position(s) with a 1 year commitment

- Diane Halvorson of Fargo has volunteered to chair the planning committee for the 2008 Fall Conference. Angela Buchanan, Barb Lacher, Becky Prodzinski, Brittany Muchow and Melissa Heley will be co-chairing with Daine Halvorson at Fall Conference. Additional updates will be provided, as they become available.

Northland Association of Pharmacy Technicians (NAPT) Announces New Awards

- ***Distinguished Young Pharmacy Technician***
- ***Diamond***
- ***Friend of NAPT***

In the continual quest to promote the profession of Pharmacy Technicians, on behalf of the NAPT, the NAPT Executive Board is excited to announce the implementation of the above awards!

These awards are targeted to acknowledge the individuals who meet the outlined selection criteria. Please review the criteria and consider your nominee carefully. We are also accepting nominations for our previously established award "Pharmacy Technician of the Year".

All nominations shall be submitted in writing; including name of nominee, name of award they are making the nomination for and list the outstanding achievements of the nominee. The nominator shall also include their contact information.

All nominations must be postmarked no later than January 31, 2008. Please mail your nominations to Jodi Hart, NAPT Vice President/President Elect, 1314 North 4th Street Apt #1, Bismarck ND 58501-2628 or email to rphtechnd@yahoo.com

Northland Association of Pharmacy Technicians

Guidelines for Northland Association of Pharmacy Technicians (NAPT) Awards

Each award is given annually to an individual or company who has been an outstanding achiever in the Practice of Pharmacy and excel in the criteria of each specific award. Each award specifies the facilitation of such award. The decision of each facilitator shall be final.

Annual Awards:
NAPT Technician
Distinguished Young Technician
Diamond
Friend of the NAPT

I. SELECTION COMMITTEE:

A. Each award shall have a specific process determining the selection committee.

B. Each award shall have a specific process determining who shall be a voting member of the selection committee.

II. GUIDELINES FOR NOMINEE QUALIFICATIONS:

A. Each award shall have a specific process determining the criteria for qualifications of such award.

B. No nominee shall be a member of the Selection Committee of the specific award or past recipient of specific award.

C. Each nominee shall be an outstanding achiever in the Profession of Pharmacy.

III. GUIDELINES FOR NOMINATIONS:

A. The nominator shall prepare a letter of recommendation listing the outstanding achievements of the nominee. The nominator shall also include the name of the award they are making a nomination for.

B. The nominator shall send the letter of recommendation to the Selection Committee, attention Chairperson of such committee. Such letter shall arrive within the determined due dates as posted yearly by the Selection Committee.

IV. GUIDELINES FOR SELECTION:

A. The Chairperson of each award shall make a request for nominations, and a listing of all prior recipients of specific award to be published in the winter issue of the ND NoDak.

B. All nominations shall be received within the specific due dates as posted in the winter issue of the ND Nodak.

C. All nominations are to be forwarded to the Chairperson of each specific award. Such nominations can be mailed, emailed or faxed depending on the Chairperson's specific requirements for that year.

D. The Chairperson shall proceed with processing of nominations based on specifics of each award.

E. Once a recipient is selected, the Chairperson will make arrangements with the nominator to make sure the award recipient is present at the Annual Convention Banquet to receive the award.

F. It shall be the decision of the nominator and the Chairperson as to whether the recipient of the award should be told about the award, or surprise the recipient at the convention Banquet.

V. PRESENTATION OF THE AWARD:

A. Each award has a designated gift to be presented at the Annual Convention Banquet. It is the responsibility of the Chairperson of each award to ensure contacting the sponsor yearly of such award ensuring the award is prepared and available for presentation.

B. The award shall be presented by the Sponsor of the award or the Committee Chairperson or by the Nominator of the specific award.

C. The recipient shall give a short thank you. The recipient shall also write a brief article of thanks to be submitted to the ND Nodak. The Chairperson of such award shall follow through with this responsibility to make sure the recipient is aware of such responsibility.

Specific Award Criteria:

DISTINGUISHED YOU PHARMACY TECHNICIAN:

Minimum Selection Criteria

1. Practicing as a Pharmacy Technician for less than 10 years.
2. Registered as a Pharmacy Technician in North Dakota.
3. Practice sites shall include but are not limited to; Institutional, Managed Care, Retail, or consulting pharmacy in the year selected.
4. Nominee should demonstrate an outstanding work experience in the Profession of Pharmacy. Participation in national technician association, professional programs, state association activities, and or community services is not required but would be good examples of dedication to the profession.
   I. Nominations will be accepted from any member of the NAPT, NDPhA or NDSHP.
   II. The Vice President of NAPT shall be the designated chairperson for this award. The selection committee shall be the Executive Board of NAPT. Once all nominations are compiled, the chairperson shall forward to the selection committee. The chairperson, with the assistance of the President, shall schedule a meeting to discuss the nominations and vote accordingly.
   III. Award received shall be a plaque. This award shall be sponsored by _____

DIAMOND AWARD:

Minimum Selection Criteria:

1. Current or past registration as a N.D. pharmacy technician is required.
2. The nominee must be living, awards are not posthumously.
3. The nominee is not a past recipient of this award.
4. The nominee is not currently serving as an officer of the NAPT Association.
5. The recipient has demonstrated and outstanding record of community service such as; involved in church, community (scouts, school, PTA, Jaycees or other organizations). The recipient also demonstrates an outstanding service to the Profession of Pharmacy.
   I. Nominations will be accepted from any member of NAPT, NDPhA or NDSHP
   II. The Vice President of NAPT shall be the designated chairperson for this award. The selection committee shall be the Executive Board of NAPT. Once all nominations are compiled, the chairperson shall forward to the selection committee. The chairperson, with the assistance of the President, shall schedule a meeting to discuss the nominations and vote accordingly.
   II. Award received shall be an etched jade glass award.
   III. Thrifty White Drug shall sponsor this award.

FRIEND OF THE NAPT:

Minimum Selection Criteria:

1. The nominee has not been a previous recipient of this award.
2. The nominee has been an advocate of NAPT and the Profession of Pharmacy Technicians.
3. The nominee may include but are not limited to; Registered Pharmacy Technician, Registered Pharmacist, or any related Pharmacy Business. The recipient is not limited to a specific person; a company can also be noted as a recipient.
   III. Nominations will be accepted from any ND Registered Pharmacy Technicians.
   IV. The Vice President of NAPT shall be the designated chairperson for this award. The selection committee shall be the Executive Board of NAPT. Once all nominations are compiled, the chairperson shall forward to the selection committee. The chairperson, with the assistance of the President, shall schedule a meeting to discuss the nominations and vote accordingly.
   V. Award received shall be a Mortar and pestle
   VI. This award shall be sponsored by NAPT.

PHARMACY TECHNICIAN OF THE YEAR AWARD:

Minimum Selection Criteria:

1. The nominee shall be a Registered Pharmacy Technician in North Dakota.
2. No nominee shall be a member of the Selection Committee or past recipient of the award.
3. Each nominee shall be actively practicing as a Pharmacy Technician in North Dakota. However, need not be actively involved with NAPT.
   - I. Nominations will be accepted from any member of NAPT, NDPhA or NDSPH.
   - II. The Vice President of NAPT shall be the designated chairperson for this award. The selection committee shall be past recipients of this award.
   - III. The chairperson shall compile the nominee information and a ballot to be mailed to the selection committee. Such ballot should include nominee's names, due date and an envelope marked with appropriate address information to return the ballot.
   - IV. Each selection committee participant shall review the information, complete the ballot and return to the chairperson by the due date as posted on the ballot.
   - V. The Chairperson shall count the ballots and notify the President and NAPT in writing of the results. In case of a tie, the Chairperson shall be cast the deciding vote. The ballots shall then be sent to the NAPT Secretary for storage.
   - VI. Award shall be a plaque.
   - VII. Dakota Drug shall sponsor this award.

NAPT Fall Conference 2008

The Annual NAPT Fall Conference for 2008 has been scheduled for September 26 & 27, 2008, to be held in Fargo.

It will be a 2 day conference, Friday session will be held at the NDSU College of Pharmacy Concept Lab offering hands on experience with aseptic technique or Telepharmacy. Saturday session will be held at the Skills and Technology Center.

Details to follow in the next Nodak.

Submitted by the NAPT Fall Conference 2008 Planning committee

John Savageau
President, NDSHP

Recently all NDSHP members received a letter from the board of NDSHP requesting information regarding each pharmacist's practice setting. This information is going to be used by the board to determine membership status. The question many of you may have is why is this now necessary since it was not required in the past? There are a couple reasons for this. Firstly, The Board of NDSHP is unable to take a position on academy status until a vote is taken by the membership. Secondly, in order to be in compliance with the by-laws of NDSHP, the membership status must be determined because only active members have voting privileges. The Board of NDSHP, in the past, did not have the comprehensive list of members it now has. The by-laws are as follows:

The membership of the Society shall consist of individuals interested in the objectives of the Society. All active members of the Society should be members of the American Society of Health-System Pharmacists.

(a) Active Members

1. are engaged in the administration, planning or supervision of a health-system pharmacy, or
2. are primarily teaching health-system pharmacy classes in colleges of pharmacy, or
3. are primarily engaged in health-system pharmacy organizational work, or
4. are approved as active members by action of the Board of Directors.

Active members shall be pharmacists as defined in Article II of the Constitution.

(b) Associate Members

Associate Membership shall consist of supporting members and student members. Associate members shall receive publications and general communications of the Society, may attend meetings, and may be granted the privilege of the floor but shall not be entitled to vote or hold elected office, except as otherwise provided in these Bylaws. Pharmacy supportive personnel members shall receive publications as determined by the Board of Directors.

1. Supporting members may be individuals other than health-system pharmacists who by their work in the health services, the teaching of prospective health-system pharmacists, or otherwise contributing to health-system pharmacy, make them eligible for membership.
2. Student members may be from among individuals enrolled in undergraduate programs in accredited colleges of pharmacy.
3. Pharmacy supportive personnel members may be individuals who are employed as pharmacy supportive personnel (i.e. technicians) in an organized health care setting work under the supervision of a licensed pharmacist; and assist in the non-professional (i.e. non-judgmental) aspects of preparing, distributing or administering medication.

(c) Honorary Members

Honorary members may be elected by the Board from those individuals who are, or have been, especially interested in, or who have made outstanding contributions to, health-system pharmacy practice. Honorary members shall not pay dues but may vote or hold office if otherwise eligible for active membership.

Once the membership status has been determine, the Board of NDSHP will be seeking input from the active members regarding academy affiliation with NDPHA. This process will take time, but is absolutely necessary to be in compliance with NDSHP bylaws. Any questions or concerns, feel free to e-mail at jsavageau@btinet.net.

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Immunization Protocol
Authority to Immunize
Authority to Initiate Immunization
Standing Prescription Order to Administer Immunizations

_____ND License #_____, acting as an authorized pharmacist on behalf of the undersigned physician, according to and in compliance with the North Dakota State Pharmacy Practice Act, may administer the medications listed below to patients ages 18 and older on the premises of _____ _____(address), or elsewhere upon notification of sponsoring physician for a time period equal to two years from the date this document is signed.

NDPHA Immunization program 11/18/2001

To protect people from preventable infectious diseases that cause needless death and disease, the above pharmacist may administer the following immunizations to eligible adult patients, ages 18 and older, according to indications and contraindications recommended in current guidelines from the Advisory Committee on Immunization Practices (ACIP) of the U.S. Centers for Disease Control and Prevention (CDC) and other competent authorities:

Influenza Vaccine, IM or IN
Hepatitis A Vaccine, IM
Hepatitis B Vaccine, IM
Human papillomavirus (HPV-4) Vaccine, IM
Measles, mumps rubella (MMR) Vaccine, SC
Meningococcal conjugate (MCV-4) Vaccine, IM
Pneumococcal polysaccharide (PPV-23) Vaccine, IM or SC
Tetanus, diphtheria, pertussis (Td/Tdap) Vaccine, IM
Varicella (chickenpox) Vaccine, SC
Varicella zoster (shingles) Vaccine, SC

All IM injectable vaccines will be given in the deltoid muscle. All SC injections will be given in the fatty tissue over the triceps muscle. IN influenza vaccine will be given by intranasal route.

Other vaccines may be added or deleted from this list by supplementary instruction from the undersigned.

In the course of treating adverse events following immunization, the pharmacist is authorized to administer epinephrine (in the form of an Epi-Pen at 0.3mg per dose) and diphenhydramine (at a dose of 1mg/kg; maximum 50-100 mg per dose) by appropriate routes as necessary. The pharmacist will maintain current certification in CPR.

In the course of immunization, the pharmacy will maintain perpetual records of all the immunizations administered. Before immunization, all vaccine candidates will be questioned regarding previous adverse events after immunization, food and drug allergies, current health, immunosuppression, recent receipt of blood or anti-body products, pregnancy, and underlying diseases. All vaccine candidates will be informed of the specific benefits and risks of the vaccine being offered. All vaccine recipients will be observed for a suitable period of time after the immunization for adverse events.

All vaccine recipients will be given a written immunization record. The immunization will be reported to their primary care provider by fax or mail within 48 if pursuant to an order. The immunization will also be reported to the North Dakota Immunization Information System (NDIIS) within 14 days of administration per 61-04-11-06(1)(b).

The pharmacist will not endeavor to disrupt existing patient-physician relationships. The pharmacist will refer patients needing medical consultation to a physician. The pharmacist will make special efforts to identify susceptible people who have not previously been offered immunizations.

The pharmacist shall submit evidence of adequate liability insurance (a claim limit of $1 million and an aggregate limit of $3 million) upon signature of this agreement.

The authorization will be valid two years from the date indicated below, unless revoked in writing.

Pharmacist Name:_____ Pharmacist Signature:_____

Pharmacy License #:_____ Date:_____

Physician Name: _____ Physician Signature:_____

Address: _____ City: _____State:_____Zip:_____

Medical License #:_____ Date:_____

Reminder: Submit evidence of adequate liability insurance.

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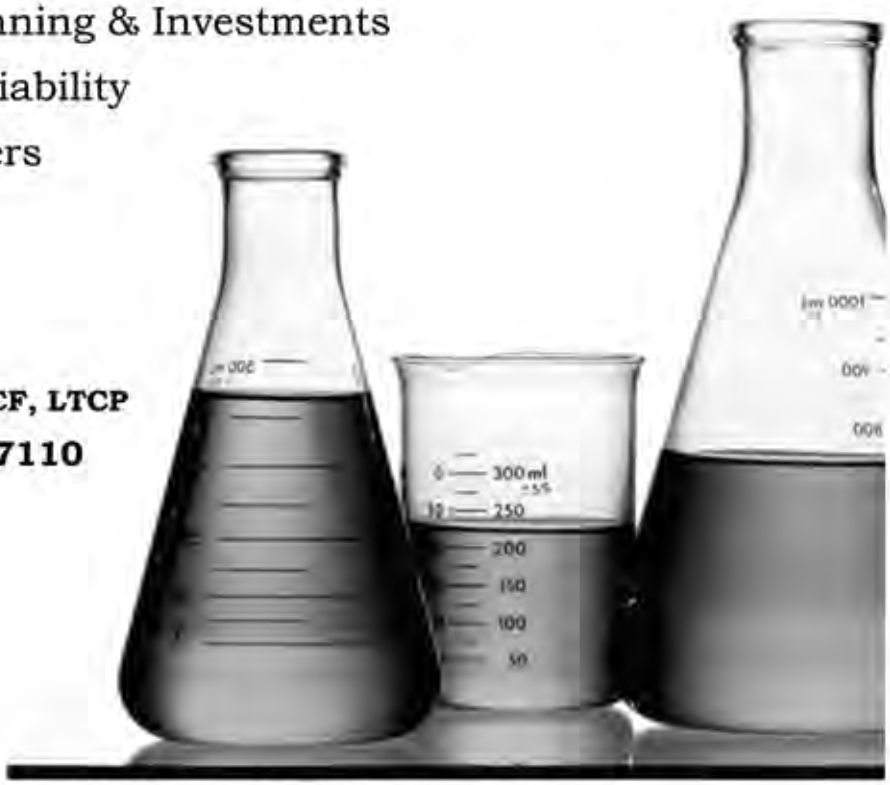

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And The Law

By Don R. McGuire Jr., R.Ph., J.D.

This series, **Pharmacy and the Law**, is presented by Pharmacists Mutual Insurance Company and your State Pharmacy Association through Pharmacy Marketing Group, Inc., a company dedicated to providing quality products and services to the pharmacy community.

Patient Counseling: A "Two Bird" Opportunity

Patient counseling has been an unofficial part of the services provided by pharmacists to their patients for many years. When Congress passed OBRA '90, regulations were then promulgated by the states. These regulations take a number of forms; mandatory counseling on new prescriptions, mandatory counseling on all prescriptions, or a mandatory offer to counsel on either new prescriptions or all prescriptions. Regardless of the form imposed, the profession has not done its best to implement effective patient counseling. This was highlighted in a recent TV news magazine story.

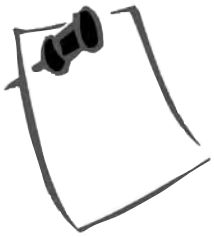
The profession needs to improve its provision of effective patient counseling for two reasons. First, patient counseling is essential for patients to understand their therapy and achieve significant outcomes. New therapies are becoming increasingly effective, but many times not without specific usage. For example, "generic Fosamax®" has specific directions regarding timing and body position after taking the drug. It is essential that patients understand these directions and follow them. Asthmatic patients can live much more normal lives than in the days before metered-dose inhalers and the drugs they can deliver. However, many patients do not know the proper order or techniques to properly use their inhalers. The increasing number of insulin products and delivery systems can be confusing to patients who are use to the traditional bottle and syringe therapy (which has its own inherent problems). Providing effective patient counseling will improve patient outcomes and demonstrate the pharmacist's value in the health care system.

The second reason to counsel patients is as a further protection for the pharmacist. The data in the Pharmacists Mutual Claims Study indicates that a significant number of claims might have been avoided with patient counseling. These claims include those where patients receive the wrong drug, patients who receive prescriptions belonging to someone else, doses that are inappropriate for the patient (typically pediatric or geriatric patients), and claims where patients do not receive the correct directions or don't understand them. In these examples, among others in the study, patient counseling is an excellent method of detecting prescription errors before the patient is harmed. But it requires engaging the patient in a real dialogue about their medications, including "Show and Tell" counseling.

The limited data pool of the TV story indicated a counseling rate of 27%. While this may not be statistically significant as to the entire pharmacy profession, it is a long way from 100%. Imagine the chaos if only 27% of drivers chose to obey stop signs. This is the pharmacist's opportunity to kill two birds with one stone as the old cliché goes. Pharmacists can improve their compliance with law and regulations by providing effective patient counseling. The profession shouldn't allow patients to sign away their right to counseling unknowingly. This patient counseling will then result in additional positive patient outcomes by a better-educated patient population. Throw in additional protection for the pharmacist from liability claims and the reasons to counsel become a no-brainer. Will it be easy? No. Is it worth it? Of course.

This article discusses general principles of law and risk management. It is not intended as legal advice. Pharmacists should consult their own attorneys and insurance companies for specific advice. Pharmacists should be familiar with policies and procedures of their employers and insurance companies, and act accordingly.

Classifieds



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Membership in the North Dakota Pharmacists Association

Opt-Out Affidavit

Name _____
(First) (MI) (Last)

Address _____
(Address) (City, St, Zip)

Telephone _____ (ND License Number)_____

In accordance with Article 1 :Section 1. B. of the North Dakota Pharmacists Association By-Laws, I hereby choose to withdraw my membership in the North Dakota Pharmacists Association. I understand that I will receive, and each year thereafter, a full refund of the portion of the fee paid to the Association by the State Board of Pharmacy.

By submitting this affidavit, I do so with the understanding that I will no longer be afforded any of the benefits of membership in the Association, its Districts, or Academies.

In order to be reinstated, I must sign an affidavit asking for reinstatement.

The opt-out period is a permanent opt-out and may only be rescinded by submitting a signed affidavit expressing my wish to be reinstated.

_____
(Signature) Date

Mail to: NDPhA, 1641 Capitol Way, Bismarck, ND 58501

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