HRSA Releases Results of Pharmacist Manpower Study

In December 1999, the US Congress asked the Secretary of the Department of Health and Human Services (HHS) to determine whether and to what extent there was a pharmacy manpower shortage. One year later in December 2000, the Health Resources and Services Administration (HRSA) of the HHS released The Pharmacist Workforce: A Study of the Supply and Demand for Pharmacists, which details the factors leading to the shortage of pharmacists and its impact on the practice of pharmacy and the public health.

HRSA confirms that a real shortage of pharmacists exists and notes. “This shortage is considered a dynamic shortage since it appears to be due to a rapid increase in the demand for pharmacists coupled with a constrained ability to increase the supply of pharmacists. The factors causing the current shortage are of a nature not likely to abate in the near future without fundamental changes in pharmacy practice and education.”

The report corroborates anecdotal accounts of unfilled pharmacist positions from employers in all practice settings and all regions of the country.

NABP contributed to the development of this report by furnishing the HRSA study group with pharmacist demographic information as supplied by the state boards of pharmacy for the Survey of Pharmacy Law and the reports of the Task Force on Pharmacy Manpower Shortage and the Committee on Law Enforcement/Legislation, as they pertained to the roles of technicians and regulating for pharmaceutical care outcomes.

The HRSA report is composed of five chapters entitled: The Pharmacist Shortage; Factors Influencing the Demand for Pharmacists and Pharmaceutical Care Services; Expanding Professional Roles, Quality of Pharmaceutical Care, and Prevention of Medication Errors; The Supply of Pharmacists and Pharmacy Education and Training; and Summary of Comments from Public and Private Sectors.

The Pharmacist Shortage

The HRSA points to several factors contributing to the shortage, including an increased use of prescription medications; market factors, including market growth and competition and third-party verification issues; and a change in the composition of the pharmacy workforce (ie, an increase in the number of women and the advent of other professional opportunities outside of the pharmacy). Wild cards that may affect the projected demand include increased reliance on automation and technicians in the dispensing process and unforeseen changes in the market.

The report suggests that the shortage of pharmacists may have a very real impact on pharmacies and the public, resulting in reduced time for

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patient counseling; job stress leading to a potential for increased medication errors; restricted service to underserved populations; and the recruitment of pharmacy practice faculty away from the colleges of pharmacy, which could lead to a restriction in class size.

Factors Influencing the Demand for Pharmacists

Between 1990 and 1999, the number of prescriptions dispensed in retail settings increased by 44% from 1.9 billion to 2.8 billion. The report attributes this increase to the usual suspects: a growing and aging population, increased third-party coverage (the report takes into consideration the proposed Medicare prescription drug benefit and projects that about 78% of US prescription volume is covered by third parties), direct-to-consumer marketing, and the introduction of new and better drugs. The use of prescription medication has increased as more diseases and medical conditions become treatable by medications. According to the HRSA report, spending on prescription drugs increased from 5.6% of total health care spending in 1993 to 8.5% in 2000 and is expected to increase to 10.3% by 2005. The report specifically points out that the projected growth of the prescription drug market will continue to outstrip the number of practicing pharmacists in the future.

Expanding Professional Roles, Quality of Pharmaceutical Care, and Error Prevention

The HRSA report recognizes and validates the need for the expanded range of services offered by practicing pharmacists in the 21st century. Key findings relevant to these issues include the following:

- Quality care as it pertains to pharmacists is extremely relevant at this time, in light of the existing shortage. The 1999 Institute of Medicine report, *To Err is Human: Building a Safer Health System* emphasized the importance of human factors in decreasing the number of medication errors: maintaining reasonable working hours, workloads and staffing ratios, and avoiding distractions;

- The expanding role of pharmacists increases as medications become more complex and diverse, which may lead to more drug misuse. In addition to patient counseling, the role of today’s pharmacist includes drug monitoring and disease management for defined conditions; patient education; and furthering public health initiatives such as smoking cessation programs, diabetes education, and immunizations;

- New drugs are appearing on the market at a faster rate, requiring the continuous updating of a pharmacist’s information base and counseling skills; and

- The increase in drug diversity and complexity have contributed to a greater number of medication errors in the United States.

The report points out that studies have shown that pharmacists can contribute to reducing the cost of health care while at the same time improving patients’ use of medications and health outcomes and that pharmacists play a key role in preventing medication errors.

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Behind the clicks and excitement of online shopping, the world of Internet pharmacy is complex and may assume various models of operation. Most online operations utilize one of four basic service models that reflect the evolving nature of these new pharmacy practice sites.

The “brick-and-mortar” model is most often used by online pharmacies that are typically an adjunct to existing pharmacies with a storefront presence. Examples of this model are CVS.com, Eckerd.com, Familymeds.com, and Walgreens.com. CVS’s purchase of Soma.com added an Internet presence to its 4,200 stores east of the Mississippi. Familymeds.com relied on the name recognition of its well-established chain stores in the northeastern part of the country to build an online mail-order sales division to attract patients nationwide. Name recognition is a benefit for these established pharmacies, and many brick-and-mortar operations offer prescription pickup services for their online customers, which maintain face-to-face counseling and interaction between the pharmacist and patient.

The second model is that of the exclusively mail-order company. These Internet sites appeared early on as a way to offer greater convenience to contract partners and other service entities, rather than to attract individual customers. Larger businesses of this type include Caremark, Inc, and Merck-Medco Managed Care, LLC, both of which promote pharmacy benefits management (PBM) services. PBMs contract with employers to provide volume discounts for employees’ medications. According to insure.com, an online insurance and research company, PBMs coordinate the transaction between the drug company, the insurer, and the pharmacies and administer about 85% of the prescription medication used by the nation’s insured.

The online-only model has no storefront presence. These entities were the first to become involved in online pharmacy practice. According to insure.com, businesses in this third category have difficulty signing contracts with PBMs, which earn revenue through mail orders. Moreover, unlike the brick-and-mortar online model, there are no physical facilities at which patients may pick up their prescriptions.

To remedy this situation, drugstore.com, one of the first online-only pharmacies, partnered with the Rite Aid chain to build a supply and mail-order facility in New Jersey. Another online-only company, Rx.com, has taken a different approach: it operates its own fleet of vehicles in major markets to provide same-day delivery.

The winds of change are being felt by the new online-only businesses. PlanetRx.com, a founding entity of the Internet that offers personal care and prescription sales, cut its staff 15% in June 2000. In February 2001, it announced that it was giving up its retail sales effective March 12, and purchasing an existing specialty prescription pharmacy, which it has yet to name. PlanetRx.com is referring its patients to former rival drugstore.com for retail services. Michael Beindorff, chairman and chief executive officer of PlanetRx.com, said, “Industry analysts estimate the specialty pharmacy segment to have approximately $14 billion in annual sales nationwide and a growth rate higher than the overall pharmacy market. With this agreement we are repurposing the extensive health care expertise, relationships, brand, and other assets of PlanetRx against a faster growing, less costly, higher margin business opportunity.”

The fourth online pharmacy model is also the newest and fastest growing. The network model is composed of independent pharmacies that partner with an Internet company to gain online marketing expertise and attract new patients. Most independents offer the convenience of same-day delivery. The online companies generate their revenue by either charging affiliates set fees or by claiming commissions from actual sales.

A modification of this model charges no maintenance fees and relies on the sales themselves to generate

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The procedures for investigating, prosecuting, and adjudicating a licensee can be complex, and such complexities may provide attorneys for licensees with the ability to contest board actions. Boards of pharmacy must be aware of these intricate procedures and have some working knowledge of the process by which information is gathered and eventually presented in an administrative disciplinary hearing. Board practices should be carefully scrutinized by the representative counsel to determine compliance with state and/or federal constitutions or statutes. Consider the following fact pattern.

Stemming from a call from a licensed pharmacist, the pharmacy board investigator scrutinized the prescription practices of a physician. Based upon the information gathered during the preliminary investigative process, charges were initiated by the state board of medical examiners, alleging substandard treatment of patients. Under applicable statutes, a “peer review panel” was convened to examine the medical records of 12 of the physician’s patients. After review, the panel expressed concerns regarding the amounts and frequency of scheduled drug prescriptions, antibiotic usage, open prescriptions and instructions for tranquilizers, and the availability of call coverage.

This investigative information led to a disciplinary hearing held by a three-member panel of the board composed of two practitioners and one public member. Substantial documentary evidence in the form of pharmacy records along with testimony of several individuals led to a recommendation of discipline to the board by the panel. A summary of the deficiencies or substandard care by the physician included: inadequately evaluating patients on an individual basis before prescribing medications, prescribing antibiotics for prolonged periods of time, and prescribing narcotic and anxiolytic medications to patients with non-terminal chronic pain without adequately pursuing and documenting use of available alternatives. Furthermore, the physician was found to have prescribed inappropriately large amounts of narcotics for inappropriately long periods of time to patients who were diagnosed with substance abuse or dependence.

Based upon the recommendations of the panel, the board placed the physician on probation for two years subject to the condition that he secure 60 hours of continuing education, including course work in recordkeeping as well as in management of chronic pain patients. The physician was also directed to maintain thorough and written treatment plans for all patients and to cease and desist from telephone refills for prescriptions of controlled substances. The physician appealed the matter to the district court which affirmed the ruling of the board in its entirety. Thereafter, the physician appealed the matter to the Iowa supreme court for review.

On appeal, the physician argued three principal issues:

1) The composition of the disciplinary panel, which included only two licensed professionals, violated the equal protection clauses of the Iowa and United States Constitutions;

2) The board policy of destroying original investigative materials upon filing the complaint violates applicable Iowa law;

3) The Doctrine of Laches, as well as the lack of patient complaints, deprives the board of jurisdiction.

The state supreme court addressed the issues in order, beginning first with the composition of the disciplinary panel. Citing previous cases, the supreme court held that, due to the lower evidentiary standard applicable to physician
disciplinary actions (as opposed to the higher criminal standard), the state was free to deal with different professions differently without violating the equal protection guarantees established under the applicable constitutions.

Because the rationale of providing sub-panels of the board to initially hear matters reflected the legislative intent to increase participation by public members on the medical board as well as reduce the time frames that expire during the disciplinary process justify the use of the sub-panel.

Therefore, the court found that the statute easily meets the constitutional protections of the equal protection clause.

Addressing the destruction of the investigative file, the supreme court was challenged by this unique procedure undertaken by the board. The investigator for the medical board revealed a board policy that called for the destruction of the investigator’s “field files” immediately upon the filing of a formal complaint against a licensee. That is, handwritten notes or memoranda relied upon by the investigator in the preparation of a report, but not included as an attachment, were destroyed. Consequently, these materials were not available for examination by the licensee through the discovery process.

In support of its policy, the board argued that all pertinent evidence is incorporated into the investigative report submitted to the board and made available for examination by the licensee. In its analysis, the supreme court held that the deliberate destruction of the investigative files casts doubt on the integrity of the entire disciplinary process. By its conduct, the court continued, the board had necessarily shifted the inquiry from what the board provided to the licensee to speculation about what it withheld.

Based upon an analysis of the statute, the court held that the board’s policy of destroying field files upon the filing of a formal complaint violated applicable Iowa law. However, the court also held that the failure to comply with the applicable statute did not entitle the licensee, under these circumstances, to relief. In other words, the licensee had failed to prove that his substantive rights had been prejudiced by the board action. Accordingly, the court held that while the board policy violated applicable law, in this case, such application did not prejudice the licensee.

Finally, the court addressed the issue of whether the Doctrine of Laches and the failure of patient complaints divested the board of jurisdiction to discipline the licensee. A laches defense rests on the claim that sufficient time has passed to prejudice a licensee so that evidence may not be available to fully comprehend the circumstances in dispute.

While recognizing that a laches defense clearly applies in a professional disciplinary action in Iowa, the court held it must be proven that the delay was unreasonable and that prejudice to the licensee had occurred. Under the current circumstances, the court held that given the number of patients, the extent of medical and pharmacy records and the variety of quality of care issues involved, the length of time between the initial investigations and the ultimate prosecution was not unreasonable.

Finally, the court was unconvinced by the physician’s argument that because no complaints were filed by patients, the board could not render disciplinary action. Applicable Iowa law specifically authorized the licensing board to review and investigate alleged acts or omissions involving substandard care, whether “upon written complaint or upon its own motion pursuant to evidence received.” As stated by the supreme court, “actual injury to a patient need not be established.” The court also noted that patients who receive large quantities of controlled substances for pain are not likely to file complaints with a regulatory board.

Based upon the foregoing, the court upheld the actions of the board in disciplining the
Under the law, pharmaceutical products have traditionally been considered “unavoidably unsafe” products. Pharmaceuticals, even when prescribed appropriately, may produce injury or fail to relieve human suffering. Such therapeutic failures and toxicities have generally been considered regrettable and tragic, but they also have been viewed as unpreventable and legally have been deemed the fault of no one. They are the unfortunate costs of scientific uncertainty and the mysteries of human physiology. Because these unintended effects have been judged to be unforeseeable by pharmacists, regulators have not criticized pharmacists whose patients suffered from these effects.

Pharmacists have, with frustration, long observed the “idiosyncratic” effects of drugs that fail to help some patients and actually harm others. At least some of the problems with “idiosyncrasies” (the word is derived from the Latin “idiota” for “ignorant person” — not a particularly flattering phrase, but one that correctly connotes a lack of knowledge rather than a disregard for others) will soon be addressed by advances in pharmacogenomics. The field of pharmacogenomics is based on the assumption that patient variations in response to drugs are due to genetic differences. The hope is that a simple genetic test can predict how a patient will respond to a drug before it is taken.

Consider, for example, the drug 6-mercaptopurine, one of the mainstays of treatment for acute lymphoblastic leukemia, a common type of childhood cancer. Researchers have recently reported that the reason some patients are harmed by the drug is that they have an unusually low level of thiopurine methyltransferase (TPMT), an enzyme that helps the body metabolize and eliminate the drug. A blood test has been developed to facilitate adjustments in dose, but a quicker and more efficient DNA test that identifies the gene for producing TPMT may soon replace the blood test. Approximately 10 percent of people have inherited a bad copy of the TPMT gene, which makes them sluggish metabolizers of 6-mercaptopurine and necessitates a reduction in dose. A small percentage of people have inherited two bad copies of the gene, making them “exquisitely sensitive” to the drug and requiring as much as a 95 percent reduction in dose.

Another example of how pharmacogenomics can be applied to practice is based on variation in the enzyme cytochrome p4502d6 (2d6). This enzyme is necessary to metabolize many commonly used drugs. Learning whether a patient is a good or poor 2d6 metabolizer can enable physicians and pharmacists to predict how a patient will respond to beta blockers, antidepressants, antipsychotics, codeine, and tamoxifen, as well as to several other drugs. A genetic test will soon be available to test for variations in the gene for 2d6. It is possible that some patients, for whom codeine has been ineffective as an analgesic, may have been inaccurately labeled as “drug abusers” or “drug seekers” due to their requests for higher doses of the drug. These patients may now be identified as having an inactive form of the 2d6 gene and therefore be unable to metabolize codeine into its desired metabolite, morphine. This same gene leads to appropriate metabolism of fluoxetine, and an inactive form of the gene may cause toxic overaccumulation of that drug, leading to hypertension and other preventable side effects. With the advent of pharmacogenomics, these adverse effects will no longer be considered idiosyncratic. They will be known, predictable, and preventable.

The advent of pharmacogenomics will challenge pharmacy regulators to address new issues regarding the pharmacist’s standard of care and public health protection. At least four areas of pharmacy regulation will be profoundly affected by pharmacogenomics: (1) accuracy, (2) safety, (3) efficiency, and (4) quality.
These are traditional areas of pharmacy regulation, but standard approaches to regulation within these four traditional areas may fail to reflect the quantum leap in practice that occurs when the application of pharmacogenomics becomes widespread.

The accuracy mandate in pharmacy practice is widely recognized and is firmly established. Pharmacists have a responsibility to get the right drug to the right patient at the right time with the correct directions for use. As simple as this mandate seems, the reality is that pharmacists do make mistakes, and systems of pharmacy practice actually “set pharmacists up” to commit errors. One of the most basic reasons for error in order processing is that the opportunities for error are widespread. There are more drugs now than in the past, the medication use process is more complex than in the past, and complexity produces error.

Pharmacogenomics will lead to a more complex array of pharmaceuticals from which to choose. Abandonment of the one-size-fits-all approach to drug therapy will lead to an increased number of tailor-made drugs that present more opportunities to dispense the wrong drug. Pharmacy regulators will have to enable pharmacists to develop better systems to accommodate the increased opportunity for error.

The safety mandate in pharmacy practice has been widely publicized as of late, in part due to the report by the Institute of Medicine titled *To Err is Human: Building a Safer Health System*. Pharmacists are seen as a filter at the end of a chain of drug distribution events, having responsibility to ensure that decisions made earlier in the chain were valid and predictive of success in drug therapy. Through drug use review, pharmacists detect potential problems with drug therapy, and they act to remove those problems to prevent harm to patients. Pharmacists detect prescriber errors, and they contact the prescriber to correct circumstances that pose an unnecessary threat of harm to patients. Pharmacists also promote patient safety by detecting and reporting adverse drug reactions, so that product-related problems can be identified. Pharmacogenomics will challenge pharmacists to ensure that the drug variant prescribed for a patient is the appropriate one, given the patient’s genetic profile. Pharmacy regulators must enable pharmacists to perform this expanded patient safety activity.

The efficiency mandate has created responsibilities for pharmacists to ensure not only that patients receive an appropriate drug but also that funds are not unnecessarily expended on products and services that are of little value.

Generic substitution, therapeutic interchange, and drug utilization evaluation are all activities that require the application of patient care expertise, with an eye toward stewardship of available resources. Pharmacists will certainly be required to use pharmacogenomic expertise to prevent the use of therapies that are known to be ineffective based on a patient’s genetic makeup. This activity raises the specter of “therapeutic discrimination” because sometimes genetics are race-based, and pharmacists may have to deny a drug to a patient based on that patient’s race. Pharmacy regulators must ensure that decisions about access to therapy are made based on socially prescribed criteria and not on prejudicial personal attitudes.

The quality mandate derives primarily from the patient counseling responsibilities and the collaborative practices between physicians and pharmacists, which have become recognized under board of pharmacy acts and rules in a majority of states. Pharmacists will be required to educate physicians and patients regarding pharmacogenomics because it is a difficult field to understand, and there is the possibility of an elevated standard of care that will require provision to a patient of the most appropriate drug for that specific individual.

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New Online Pharmacy Models Expand Practice Landscape (continued from page 39)

revenue. For example, Miami, Fla.-based Clickpharmacy.com, designed for independents, handles purchasing on its own site and sends orders via e-mail to one of its 40 participating pharmacies in 38 states. It retains a commission for each purchase.

In addition to these four basic service models, there are also other specialty or local online pharmacies whose operations fall outside the established categories. These are generally niche market pharmacies that focus their efforts on a single market, such as home therapy, HIV, or intravenous materials.

The Future of Internet Pharmacies

The economic downturn in dot.coms during the last year has had an impact on Internet pharmacies, but the future remains bright for market growth. Online prescription drugs sales are expected to rise, from $23 million in 2000 to $1 billion by 2002, according to Internet business researcher Jupiter Communications. Drugstore.com announced in January 2001 that it was cutting 125 jobs, or 23% of its staff, in addition to the 60 jobs it cut in October 2000 to reduce its operating costs. Yet drugstore.com sales almost doubled in the fourth quarter of 2000, from $18.5 million to $36.2 million, according to online news service eBiz.

Pharmacies are finding that by forming partnerships they are able to broaden services and keep abreast of an evolving, competitive marketplace.

Whatever the service model, the largest online pharmacies provide similar perks, such as phone and e-mail answering services, health information, e-mail prescription refill reminders, and sometimes sitesponsored support groups.

With the continued growth of the Internet there is the need to ensure the protection of the public health through quality assurance and certification of online sites. When NABP created the Verified Internet Pharmacy Practice Sites™ (VIPPS™) program in January 1999, it was expected that most parties applying for certification would be individual pharmacies acting alone. However, medium and large organizations compose the majority of applicants. Other VIPPS-certified pharmacies not mentioned above are: accuratepharmacy.com, DrugEmporium.com, HealthScript Pharmacy Services, Inc, PrescriptionOnline.com, Teldrug, Inc, and VitaRx.com.

In general, pharmacies have found that they benefit from the high level of Internet sophistication available through networks or other forms of partnerships that they usually cannot provide themselves.

NABP Awards VIPPS Certification to Eckerd.com

Eckerd.com is the most recent online pharmacy to receive Verified Internet Pharmacy Practice Sites™ (VIPPS™) certification from NABP. Eckerd’s Web site is located at www.eckerd.com.

Eckerd Corporation, a wholly owned subsidiary of Clearwater, Fla.-based JC Penney Co, is one of the United States’ largest retail drug chains with 2,600 drug stores in 20 states. Eckerd employs more than 78,000 associates company-wide, including 9,000 pharmacists.

“Eckerd is dedicated to providing the highest quality of service for our online pharmacy customers,” says Mike Fidella, Eckerd vice president of e-commerce. “Our online pharmacy customers can be assured that the Eckerd Web site complies with the highest standards in the industry.”

Participation in the VIPPS certification program is voluntary. The program was developed to provide consumers with a reliable means to identify those online pharmacies that have proven their preparedness to meet the unique challenges of the practice of pharmacy via the Internet.

For more information about the VIPPS program, call NABP at 847/698-6227, or log on to NABP’s Web site at www.nabp.net.
As more patients turn to the Internet for medication purchases, NABP’s Verified Internet Pharmacy Practice Sites™ (VIPPS™) program is finding its way into the recommendations of magazines, medical journals, and online medical referral sites. *Consumer Reports* magazine, in its February 2001 issue, suggested to its 4.1 million subscribers that they look for the VIPPS seal when purchasing prescription drugs online.

The article, “Prescription for Trouble,” warns readers against using online pharmacies that sell drugs without a prescription or those that sell unsafe or counterfeit drugs. It also refers to legitimate VIPPS sites, and suggests that patients look for sites bearing the VIPPS seal. The article explains that the VIPPS seal is “designed to help consumers identify sites that are licensed and in good standing with regulatory agencies.”

*Consumer Reports* is the latest consumer-oriented publication to endorse NABP’s VIPPS program since it debuted in 1999. In January 2001, the US Department of Health and Human Services released a guide to Medicare patients regarding Internet pharmacy safety. The two-page bulletin explained, “VIPPS certifies that the Internet pharmacy is fully licensed and complies with standards including protection of your medical information.” It can be accessed at www.medicare.gov/Prescription/Home.asp.

Additional support for the VIPPS program comes from *USA Today* and *Physician News*, and the popular news portal About.com, which recommended the program in a recent legal column. MedWebPlus.com, one of the most relied-upon health science information search sites on the Web, keeps VIPPS on its approved database list, and the American Medical Association pledged to cooperate with NABP on the program. VIPPS is also mentioned on many other Internet health information portals and news services.

Adhering to a few simple, common sense precautions, such as looking for the Verified Internet Pharmacy Practice Sites™ (VIPPS™) seal, offers consumers significant protection when purchasing prescription medicines online, says the CybeRx-Smart Safety Coalition. Organized by the US Food and Drug Administration (FDA) and comprised of 14 government, professional, and industry related organizations, including NABP, the Coalition has launched a national public service campaign featuring public service radio announcements, news releases, and an information brochure that appears on the FDA Web site at www.fda.gov.

Through the efforts of the Coalition, FDA has made a significant commitment to educating consumers about the “do’s and don’ts” of buying prescription medication online. Consumers are advised to:

- Meet with their doctors to obtain any new prescription;
- Look for the VIPPS seal to ensure they are dealing with a legitimate pharmacy;
- Buy only from US-based sites;
- Look for easy-to-find and understandable privacy and security policies; and
- Use the same standards when purchasing prescription medications online as you would when selecting any reputable pharmacy.

Consumers are also encouraged to report any site they believe to be unlicensed or a problem to the FDA.

FDA’s future plans to widely promote the Coalition brochure include the distribution of a card with every tax refund check listing the new brochure.
Nestled on the coast of the Pacific Ocean, Seattle is a playground for those who enjoy the great outdoors. NABP has arranged an assortment of optional events for attendees and their guests to explore Seattle during the 97th Annual Meeting, May 5-9, 2001, at the Sheraton Seattle Hotel and Towers in Seattle, Wash.

Optional Events
NABP’s fourth annual golf tournament will be held at Seattle Harbour Pointe, one of Puget Sound’s most popular and challenging courses. The first nine holes wind around acres of wetlands and lakes, while the forested back nine, with island-like fairways, offer glimpses of Puget Sound and Whidbey Island. Buses for the tournament will leave the Sheraton at 1:30 PM on Monday, May 7, with a “shotgun” start scheduled for 2 PM. The cost is $150, including greens fee, cart rental, and prizes. Interested golfers are encouraged to complete the appropriate section of the registration form and mail it to the NABP office along with the activity fee by April 20, 2001.

Meeting attendees and their guests won’t want to miss the Sunday, May 6, optional walking tour of Underground Seattle and Pioneer Square, which will be followed by dinner at the Pyramid Ale House. Beginning beneath the sidewalks of Pioneer Square, visitors will glimpse the city as it looked in 1889 before the Great Seattle Fire. Moving topside, the tour will continue through Pioneer Square, Seattle’s oldest neighborhood, and home to many of the city’s galleries and eateries. Guides will be sensitive to the fitness level and desired intensity of their group. The walking guide will narrate the walk, pointing out interesting sights, architecture, and public art highlights.

Seattle has become the art glass capital of the United States, and spouses and guests can explore glass blowing and the Pioneer Square Galleries firsthand on a tour Tuesday, May 8. This optional tour will visit art glass galleries located in such diverse neighborhoods as Pioneer Square, Belltown, and Eastlake. Participants will see glass blowing demonstrations by prominent glass artists creating beautiful works of art. There may even be a chance to purchase some of these works. After the tour participants will have an opportunity to explore Pike Place Market, the historical farmers’ market in downtown Seattle. There will be enough time to enjoy lunch in the Market before heading back to the hotel. Cost of the tour is $42. Advance registration is required.

Meeting attendees and their guests won’t want to miss the Sunday, May 6, optional walking tour of Underground Seattle and Pioneer Square, which will be followed by dinner at the Pyramid Ale House. Beginning beneath the sidewalks of Pioneer Square, visitors will glimpse the city as it looked in 1889 before the Great Seattle Fire. Moving topside, the tour will continue through Pioneer Square.

Historic cobblestone streets lead to Seattle’s Pike Place Market, one of the last remaining working farmers’ markets in the country.

Spouse/Guest Events
NABP has arranged several programs for spouses and guests of meeting attendees. On Sunday, May 6, spouses and guests will glimpse the
97th Annual Meeting

May 5-9, 2001
Sheraton Seattle Hotel and Towers
Seattle, Wash

Friday, May 4
3 - 5 PM
Registration Desk Open

Saturday, May 5
7 AM - 7:30 PM
Registration Desk Open
7:30 AM - 5:30 PM
Pre-Meeting Seminar
Pharmacy-Based Immunization Delivery: A Certificate Program for Pharmacists
Presented by the American Pharmaceutical Association
Program #: 202-000-00-105-L01
(1.8 CEUs – 18 contact hours including home study module)
1 - 3 PM
Public Board Member Session
(Subject to advance registration of at least 10 public members.)
1 - 5 PM
Presentation Area Open
1 - 5 PM
Hospitality Suite
Sponsored by the Food Marketing Institute
3 - 5 PM
New Member Seminar
4 - 5 PM
Meeting of the Nominating Committee
7 - 9 PM
President’s Welcoming Reception

Sunday, May 6
7:30 AM - 4:30 PM
Registration Desk Open
7:30 - 9:30 AM
Continental Breakfast
7:30 AM - 2 PM
Presentation Area Open
8:30 - 8:45 AM
Welcoming Remarks/Presentation of Colors
8:45 - 9:30 AM
Keynote Address
Dr Robert D. Ballard, oceanographer
10 AM - 12:30 PM
First Business Session
12:30 - 5 PM
Meeting of the Nominating Committee
Meeting of the Committee on Resolutions
1:30 - 3 PM
Spouse/Guest Tea
Microsoft Home of the Future
2:30 - 4:30 PM
Executive Officer and Board Member Programming
Electronic Prescribing and Electronic Signatures
Program #: 205-000-01-001-L03
(0.2 CEUs – 2.0 contact hours)
Compliance Officer Programming
Assessing the Pharmacy Workplace – Nevada Survey Results
Program #: 205-000-01-002-L03
(0.2 CEUs – 2.0 contact hours)
Pharmacy Practice Programming
Opioids and the Law
Program #: 205-999-01-003-L03
(0.2 CEUs – 2.0 contact hours)
5:30 - 10:30 PM
Optional Tour
Underground Seattle and Pioneer Square

Monday, May 7
7 - 11:30 AM
Registration Desk Open
7 - 8 AM
NABP/USP Breakfast
Sponsored by the US Pharmacopeia, Inc
8 - 9:30 AM
Executive Officer and Board Member Programming
Legislative and Regulatory Update
Program #: 205-000-01-004-L03
(0.15 CEUs – 1.5 contact hours)
Compliance Officer Programming
Electronic Prescribing and Electronic Signatures
Program #: 205-000-01-005-L03
(0.15 CEUs – 1.5 contact hours)

We Gone Wrong in Managing Pain?
The Compliance Perspective
Program #: 205-000-01-006-L04
(0.15 CEUs – 1.5 contact hours)

Tuesday, May 8
6:30 - 7:30 AM
Fun Run/Walk
8 AM - 5 PM
Registration Desk Open
8 - 9 AM
Past Presidents’ Breakfast
8 - 9 AM
Continental Breakfast
9 - 11 AM
Joint CE Programming
Socratic Dialogue: Regulating for Pharmaceutical Care Outcomes
Program #: 205-000-01-007-L03
(0.2 CEUs – 2.0 contact hours)
9 AM - 1:30 PM
Optional Spouse/Guest Tour
Glass Blowing and Pike Place Market Tour
11 AM - 10:00 PM
Open Mike Session
1 - 2:30 PM
Executive Officer and Board Member Programming
HRSA Report on Pharmacy Manpower Shortage
Program #: 205-000-01-008-L04
(0.15 CEUs – 1.5 contact hours)
Compliance Officer Programming
Pharmaceutical Care Outcomes: The Compliance Perspective
Program #: 205-000-01-009-L03
(0.15 CEUs – 1.5 contact hours)
Pharmacy Practice Programming
Hooked on a Feeling: Where Have We Gone Wrong in Managing Pain?
Program #: 205-999-01-010-L01
(0.15 CEUs – 1.5 contact hours)
3 - 4:30 PM
Third Business Session
7 - 10:30 PM
Annual Awards Dinner

Wednesday, May 9
7:30 - 8 AM
Continental Breakfast
8 - 11:30 AM
Final Business Session

NABP and the NABP Foundation are approved by the American Council on Pharmaceutical Education (ACPE) as providers of continuing pharmaceutical education. ACPE Provider Number: 205.
The American Pharmaceutical Association is approved by the ACPE as a provider of continuing pharmaceutical education. ACPE Provider Number: 202.

Participants may earn up to seven hours of ACPE-approved continuing education credit from NABP. Participants in continuing pharmaceutical education programs will receive credit by completing a “Certificate of Continuing Pharmaceutical Education Participation,” and submitting it to the NABP office. A validated Certificate will be sent as proof of participation within approximately six weeks. Full attendance and completion of a program evaluation form for each session are required to receive continuing pharmaceutical education credit and a Certificate of Participation.
The overall number of active pharmacists is expected to grow by 28,500 in the next 10 years, from 196,000 in 2000 to 224,500 in 2010. This is slightly less than the total growth during the past decade (29,300). There has also been a decline in pharmacy school applications, with the number of 1999 applicants 33% lower than in 1994, the high point of the past decade. The composition of practicing pharmacists is changing, too. Continuing the pattern of the last decade, the report projects that by 2010 the number of women in the profession will increase, outnumbering their male counterparts by almost two to one. The number of women in the profession increased from 12.5% in 1970 to 46.1% in 2000. While this increase has positive aspects in terms of gender equality, this shift has had an impact on productivity because many women opt to work a part-time schedule. The Bureau of Census’ Current Population Survey reported that between 1979 and 1998, 28% of the women worked less than 35 hours a week, as opposed to 11% of the men; almost 10% of the women worked less than 20 hours a week as opposed to four percent of the men.

The Census report also showed that the “pharmacist supply varies considerably from state to state. In 1991, during the last nationwide census, the number of pharmacists per 100,000 population varied from a low of 39 in Alaska to a high of 103 in Nebraska. The nationwide average was 68 (pharmacists per 100,000 population), up from 65 in 1978. Among states with the largest populations, California, with only 54 pharmacists (per 100,000 population), was well below the national average.”

Another factor in the pharmacist shortage equation is pharmacy education and training. Although the number of pharmacists has grown over the past 20 years, the growth pattern for new graduates has been somewhat irregular. A decline in the number of pharmacy graduates in the late 1990s was accompanied by a corresponding decline in the number of applications to schools of pharmacy. Two factors that influenced the decline in graduates were the economic recession during the 1980s and the conversion from the bachelor of science in pharmacy (BS Pharmacy) to doctor of pharmacy (PharmD) as the entry-level degree for pharmacists. Although currently the BS Pharmacy programs are eligible for accreditation by the American Council on Pharmaceutical Education (ACPE) and meet the state boards of pharmacy licensure requirements, they are slowly being phased out. After 2003 the ACPE will only accredit PharmD programs. The PharmD program requires at least eight semesters of professional-level work, usually over a four-year period, including at least two semesters of supervised practice experience. As a result, the number of pharmacy graduates has been fewer during this conversion process due to the extra year required to complete the PharmD program.

Summary of Comments from Public and Private Sectors

Comments to the study group largely supported HRSA’s findings that there is a true, long-term shortage of pharmacists affecting the practice of pharmacy and the public health, not a short-term problem resulting from market competition. The pharmacist shortage has had crucial consequences affecting the procurement of pharmaceutical services and the practice of pharmacy including:

- Limited services in some pharmacies due to the inability to fill vacant positions and fulfill staffing;
- Job stress, poor work conditions, and reduced job satisfaction due to longer working hours and less flexibility in scheduling work;
- The possibility for increased risk of medication errors due to pharmacist fatigue and inadequate time for patient counseling and/or error checking;
- Increased burden of populations and communities that are medically underserved or otherwise at risk; and
- Critical vacancies among faculty in pharmacy schools.
The HRSA report does not attempt to offer solutions to the pharmacist shortage. Several individuals and groups commenting on the report did, however, discuss the value of some remedies. Although the use of technicians and the application of automation and technology were viewed as useful first steps toward relieving the shortage, neither was judged to be a comprehensive, long-term solution. It was stressed by some respondents to the HRSA report that technicians must have effective and suitable training.

Within the last 18 months, several professional associations have assessed the pharmacist shortage and presented their perspectives.

The HRSA report is available on the Web at [www.bhpr.gov/healthworkforce/pharmacist.html](http://www.bhpr.gov/healthworkforce/pharmacist.html). For information about NABP, visit [www.nabp.net](http://www.nabp.net). NABP

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**CybeRx-Smart Coalition Offers Tips for Online Rx Safety**

(continued from page 45)

Radio public service announcements (an audience of over five million has been reached to date); a banner page on the FDA Web site; and an exhibit booth at several professional meetings during 2001.


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**The Academic Perspective**

(continued from page 43)

Patient. The collaboration with physicians and patients will require not only expertise regarding therapy, but also expertise in values and ethics as well because some physicians and patients will object to pharmacogenomics due to a perceived “unnatural” aspect. Pharmacy regulators will have to adjust their expectations of pharmacists to reflect the expanded responsibility of individualized drug therapy.

Every advance in therapy brings with it solutions to old problems, along with an array of new problems that require creative new solutions. Pharmacogenomics is no exception to this general rule. Pharmacists will be prominently involved with pharmacogenomic decisions, and they will, at times, fail to meet their responsibilities. The job of the regulatory agency is to define for pharmacists the profession’s expectations of them, so that practitioners are not left to guess what they should do in their practice. Regulators also have the ability to empower practitioners to avail themselves of productive advances in care, such as pharmacogenomics. It is regulators who must ensure the competence of licensed practitioners by acting to provide opportunities for practitioners to learn how quantum advances in therapy, such as pharmacogenomics, can be applied productively to patient care. Perhaps most importantly, pharmacy regulators must educate themselves about pharmacogenomics, so that when the time comes – and it will be soon – they will be well positioned to provide leadership to the profession regarding the role pharmacists must play in the improvement of outcomes and reduction of costs from drug therapy based on pharmacogenomics. NABP

Attorney David Brushwood is a professor at the University of Florida College of Pharmacy. He holds degrees from the University of Kansas, Schools of Pharmacy and Law.
NABP’s Examination Committee Members

The review committees for NABP’s competence assessment programs are charged with safeguarding the integrity and validity of the Association’s examinations. These committees meet regularly to review examination content and ensure that the specified Competency Statements are met. The individuals listed below currently serve on NABP’s examination committees.

Members of the North American Pharmacist Licensure Examination (NAPLEX®) Review Committee, the Multistate Pharmacy Jurisprudence Examination (MPJE™) Review Committee, and the Disease State Management (DSM) Examination Review Committee start their terms at the beginning of the year, while members of the Foreign Pharmacy Graduate Equivalency Examination (FPGEE®) Review Committee begin their terms in the summer.

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<td>David Young</td>
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Association Committee and Task Force Volunteers Needed

NABP is seeking volunteers from among its active member boards of pharmacy to serve on the Association’s 2001-2002 committees and task forces. Interested executive officers and board members are encouraged to submit a letter of interest and a current curriculum vitae to NABP Executive Director/Chef Carmen A. Catizone by Thursday, May 31, 2001. Letters should outline the volunteer’s applicable experiences and accomplishments, along with the reasons he or she wishes to be considered for appointment to a task force or committee. All letters and vitae will be forwarded to NABP President-elect Richard K. “Mick” Markuson, who will make the appointments following the Association’s 97th Annual Meeting, May 5-9, 2001, in Seattle, Wash. [NABP]

Optional Events, Programs Enhance 97th Annual Meeting (continued from page 46)

house of the future during a presentation by Microsoft’s Rick Bakken, who will explain how computers will someday work with wireless networks and intelligent devices and appliances to help the busy people of the 21st Century live a digital lifestyle both at work and at home. The future may not be too far away after all.

Interested in restoring positive energy in your life? Plan to attend the Feng Shui Demonstration on Monday, May 7, to gain insight into this 5,000-year-old Chinese philosophy that seeks to enhance the flow of positive energy in an environment. Participants will learn how to diagnose missing elements that disrupt the flow of positive energy and adopt certain strategies to restore harmony and balance to their surroundings. [NABP]
Mississippi Board Pursues Diversion Problem

A pharmacy technician employed for more than four years at a moderate-volume, major chain pharmacy in Gulfport, Miss, allegedly diverted more than 35,000 dosage units of hydrocodone and alprazolam over a seven-month period. Another pharmacy technician in a similar size chain in Long Beach, Miss, allegedly inflated her drug orders for medications such as Lorcet 10 and Vicodin ES over a period of five months. The diversions were detected internally by staff pharmacists who looked at records of delivered drugs. Both technicians were arrested.

Drug diversion occurs throughout the country, and state boards that are focusing efforts at educating pharmacies are curtailing abuses. In both cases above, the diversions could have been avoided if the pharmacist-in-charge (PIC) had simply reviewed the purchase invoices and kept a closer watch over the drug purchase procedure, says Mississippi State Board of Pharmacy Director of Compliance Harold J. Stamps.

“We’ve noticed a huge increase of diversion involving pharmacy technicians,” Stamps says, noting that the increase began around April 1999, the same time that a new state pharmacy regulation required pharmacy technicians to be registered with the state Board. He says it is unclear why diversion increased simultaneously with the technician registration requirement, but stresses that the Board has been aggressively pursuing the drug diversion problem during the last year-and-a-half through articles in the Mississippi State Board of Pharmacy Newsletter.

Stamps recommends that background checks be done on every prospective employee. He also suggests that different persons order and check in drug shipments and that someone look over the purchase process. Problems arise, he notes, when the same person is allowed to place and check the order without requiring anyone else to verify it. Sometimes invoices have been replaced to show lower amounts delivered.

“We’re getting better at detection and education,” notes Stamps. “PICs are doing a better job watching and handling routine invoices, watching purchasing patterns, and maintaining normal, good business practices.”

According to Stamps, pharmacists are making more reports to the state Board. Constant vigilance is important, he says, since in many cases it has been the most trusted employee who has been diverting medication for a long time. Stamps estimates that in the case of more than half of the arrested technicians, there is strong reason to believe that they have taken the job to have access to drugs.

The drugs may be given to friends, sold on the street, or taken for personal use. Street prices for hydrocodone tablets range from $6 to $10 per tablet, while prices for alprazolam range from $2 to $4 per tablet. In one case, Lorcet 10 and Vicodin ES tablets were sold for $3 each to an out-of-state person, who then sold the drugs for $10 per unit.

The Mississippi Board has conducted about 20 such investigations since fall 1999, which account for 300,000 dosage units of missing prescription drugs. Twenty-one technicians have been arrested, and four more have voluntarily surrendered their registrations. Six investigations are presently underway.

Legal Briefs (continued from page 41)

physician under these circumstances. Boards of pharmacy must be careful in adopting policies relative to the investigative process and disclosure of information. Several laws must be examined to determine whether such policies will withstand legal scrutiny. Obviously, more than the practice acts must be examined in making such determinations.

Miller v. Board of Medical Examiners of the State of Iowa, 609 N.W.2d 478 (IA 2000) NABP

Attorney Dale J. Atkinson is a partner in the law firm of Atkinson & Atkinson, counsel for NABP.
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In Memoriam: Sidney H. Willig

Sidney H. Willig, a pharmacist and attorney who was recognized as a leading scholar in pharmaceutical law and who served as counsel to some of the nation’s largest drug makers, died suddenly on November 19, 2000. He was 81. Willig served as professor, lecturer, and head of the drug law institute at Temple University in Philadelphia, Pa, where a chair in pharmaceutical law was established in his name.

He authored several books on nursing, pharmacy, and drug law and was considered an expert on product liability as it relates to pharmaceutical law.

“He took his knowledge as a pharmacist and used it with his knowledge of the law, so he became an expert on things like labeling and certification,” said his son, Kenneth Willig.

Mr Willig received the President’s Award of the American Society for Pharmacy Law and the 1988 President’s Medal from St John’s University.

Johnson, Gladstein New Roles in New Jersey

Lois D. Johnson has been appointed the new executive director of the New Jersey State Board of Pharmacy. Johnson holds a BS in elementary education from Fairleigh Dickinson University. Prior to joining the Board, she was the executive director of the New Jersey marriage and family therapy department for two years.

H. Lee Gladstein is now the director of pharmacy for the New Jersey State Board of Pharmacy.

Harold Sparr Re-elected Sixth Consecutive Term

Massachusetts Board of Registration in Pharmacy member Harold B. Sparr was re-elected to a sixth consecutive year as Board president. Massachusetts Board Executive Director Charles R. Young praised Sparr’s contributions to the Board and noted that in his 25-year tenure as a Board member. “Harold never missed an annual meeting or a district meeting. He has always dedicated the most amount of time possible to the Board.”

In September 2000, Sparr, chairman of NABP’s Advisory Council on Examinations, was awarded the President’s Pharmacist of the Year Award by the Massachusetts Pharmacy Association.

New Board Members

Following are newly appointed state board of pharmacy members.

Thomas A. Dickson, member, Minnesota Board of Pharmacy

Lynda C. Staggs, member, Alabama State Board of Pharmacy

Malcolm “Mickey” Tatum, Jr, member, Georgia State Board of Pharmacy

Richard P. Zarek, member, Nebraska Board of Pharmacy
NABP Meeting Dates

**Friday, March 30, 2001**
Committee on Constitution and Bylaws Meeting,
NABP Headquarters, Park Ridge, Ill

**Friday-Saturday, May 4-5, 2001**
Pre-convention Executive Committee Meeting,
The Sheraton Seattle Hotel and Towers,
Seattle, Wash

**Saturday-Wednesday, May 5-9, 2001**
NABP 97th Annual Meeting,
The Sheraton Seattle Hotel and Towers,
Seattle, Wash

**Wednesday, May 9, 2001**
Post-convention Executive Committee Meeting
The Sheraton Seattle Hotel and Towers,
Seattle, Wash

**Sunday-Tuesday, August 5-7, 2001**
NABP/AACP District III Meeting,
Amelia Island Plantation, Amelia Island, Fla

**Thursday-Saturday, August 16-18, 2001**
NABP/AACP District V Meeting,
Rushmore Plaza, Rapid City, SD

**Thursday-Sunday, October 4-7, 2001**
NABP/AACP District VI Meeting,
TBA, Lawrence, Kan

**Thursday-Sunday, October 11-14, 2001**
NABP/AACP District VII & VIII Meeting,
Sheraton Old Town Hotel, Albuquerque, NM

**Thursday-Saturday, November 1-3, 2001**
NABP/AACP District I & II Meeting,
Otesaga Hotel & Resort,
Cooperstown, NY

**Friday-Sunday, November 9-11, 2001**
NABP/AACP District IV Meeting, Concourse Hotel,
Madison, Wis