Published in final edited form as:

J Am Pharm Assoc (2003). 2009 ; 49(3): 446–452. doi:10.1331/JAPhA.2009.08036.

U.S. Public Health Service Commissioned Corps Pharmacists: Making a Difference in Advancing the Nation's Health

Louis Flowers, PharmD, MS,

Director Health Promotion Officer, Division of Training and Development, Office of Training and Communications, Center for Drug Evaluation and Research, Food Drug Administration, Rockville, MD

Jeannette Wick, RPh, MBA,

Senior Clinical Research Pharmacist, NCI/DCTD/CTEP/Pharmaceutical Management Branch, Rockville, MD

William Douglas Figg Sr., PharmD, MBA,

Head of the Molecular Pharmacology Section and the Clinical Pharmacology Program within the Medical Oncology Branch, Center for Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda, MD

Robert H. McClelland, PharmD, BCPS, NCPS,

Chief Pharmacist/Specialist, Indian Health Service, Elko, NV

Michael Shiber, BS Pharm,

Chief Clinical Pharmacist, Federal Bureau of Prisons, Washington, DC

James E. Britton, PharmD,

Senior Pharmacist II/Director of Inpatient, Federal Bureau of Prison National HIV Clinical Consultant Pharmacist, Springfield, MO

Diem-Kieu H. Ngo, PharmD,

Program Management Officer, Advisors and Consultants Staff, Office of Executive Programs, Center for Drug Evaluation and Research, Food and Drug Administration, Rockville, MD

Vicky Borders-Hemphill, PharmD,

Drug Utilization Specialist, Center for Drug Evaluation and Research, Food Drug Administration, Rockville, MD

Christina Mead, PharmD, NCPS,

Deputy Chief Pharmacist/Specialist, IHS, Bloomfield, NM

Jerry Zee, PharmD, and

Staff Pharmacist and Omak Satellite Clinic Site Manager, Indian Health Service, Omak, WA

Paul Huntzinger, BS Pharm, MA

Regional Pharmacy Consultant (Pacific) for the Coast Guard

Abstract

Correspondence: CDR Louis Flowers, PharmD, MS, DTD/OTCOM/CDER/FDA BLDG 51, Room 2316 10903 New Hampshire Avenue Silver Spring, MD 20993. Fax: 301-847-8718. louis.flowers@fda.hhs.gov.

Disclosure: The views expressed in this paper are those of the authors and do not reflect the official policy or position of the U.S. Public Health Service, U.S. Department of Health and Human Services (HHS) or non-HHS Federal agencies. The authors declare no conflicts of interest or financial interests in any product or service mentioned in this article, including grants, employment, gifts, stock holdings, or honoraria.

Objective—To describe how pharmacy officers in the Commissioned Corps are making a difference in protecting, promoting, and advancing health and safety of the Nation.

Summary—Pharmacists who serve in the Commissioned Corps of the United States Public Health Service fill roles that are considerably different than their counterparts in the private sector. Their work takes them out from behind the counter and into the world. Pharmacy officers advance the health and safety of the Nation by their involvement in the delivery of direct patient care to medically underserved people, national security, drug vigilance, research and policy-making endeavors. PHS pharmacists fill essential public health leadership and service roles throughout the U.S. Department of Health and Human Services (HHS) and certain non-HHS federal agencies and programs. The Federal Bureau of Prisons, Health Resources and Services Administration, Food and Drug Administration, United States Coast Guard, Indian Health Service, and National Institutes of Health are among the many federal agencies where pharmacy officers are assigned.

Conclusion—In each setting, pharmacists find traditional roles augmented with assignments and challenges that broaden the scope of their practice.

Keywords

U.S. Public Health Service; Commissioned Corps Officers; U.S. Department of Health and Human Services (HHS); non-HHS Federal agencies

Public health—the art and science of preventing disease, prolonging life and promoting health—requires highly qualified public health professionals dedicated to delivering the Nation's public health promotion and disease prevention programs and advancing public health science. As one of America's seven uniformed services, the Commissioned Corps of the U.S. Public Health Service (PHS) is an essential component of the largest public health program in the world. Of the more than 6,000 Commissioned Corps officers, nearly 1,000 are pharmacists.¹ PHS pharmacists fill essential public health leadership and service roles throughout the U.S. Department of Health and Human Services (HHS) and certain non-HHS federal agencies and programs. Much of what PHS pharmacists have accomplished has been done behind the scenes and without fanfare.

During disasters, PHS pharmacists are likely to be among responders. After the September 11th attacks and anthrax exposures in 2001, PHS pharmacists were highly effective members of multidisciplinary disaster management teams. They coordinated logistics, selected and dispensed appropriate medications, screened and counseled patients, and assisted other members of the health care team.^{2,3,4,5} In addition, PHS pharmacists were administrative liaisons to the Federal Emergency Management Agency's Emergency Support Team; served aboard the floating hospital USNS Comfort while it docked and provided care in New York City; and staffed the Office of Emergency Preparedness (OEP) Emergency Operations Center in Rockville, MD.^{4,5}

In the aftermath of 2005 Hurricanes Katrina, Rita, and Wilma, PHS pharmacists established pharmacy operations, provided pharmaceutical care, and conducted outreach missions to victims.^{6,7} Furthermore, a PHS pharmacist coordinated the largest PHS deployment ever that involved 2,600 PHS officers, including about 400 pharmacists, who were deployed to the disaster sites.^{6,7}

Currently, a PHS pharmacist working within the Department of Defense (DOD)'s medical insurance program, Tricare, has been charged with developing and overseeing programs to reduce prescription drug costs while maintaining adequate patient care for 9.2 million active-duty service members and retirees and their families enrolled in Tricare.⁸ Moreover, PHS pharmacists provide strategic leadership for a national system of community-based volunteer

medical and public health professionals, HHS's Medical Reserve Corps (MRC), and the newly created Office of Security and Strategic Information (OSSI) responsible for identifying and coordinating the exchange of national-security-related information between the intelligence community and HHS.^{9,10}

Objective

The objective of this paper is to describe how PHS pharmacists serving in jobs that are normal for them, but considerably different than those found in the private sector, are making a difference in advancing the Nation's health.

Improving, Extending Life for People with HIV/AIDS

In the United States, more than one million people were living with HIV/AIDS at the end of 2003.¹¹ Now considered epidemic, HIV/AIDS represents a health crisis for all Americans, especially people who lack or have insufficient health insurance, or are disenfranchised from the health care system. One Operating Division of the HHS, the Health Resources and Services Administration (HRSA), works to improve and extend life for people living with HIV/AIDS. Within HRSA, the HIV/AIDS Bureau (HAB) directs the AIDS Drug Assistance Programs (ADAPs). Administered by the individual states, the District of Columbia, Puerto Rico, Guam, U.S. Virgin Islands, American Samoa, Marshall Islands, Federated States of Micronesia, and North Marianas, the ADAPs provide HIV/AIDS medications to low-income individuals living with HIV/AIDS who have inadequate insurance or no public or private insurance coverage.^{12,13} In 2006, Congress earmarked \$790 million to be used for the ADAP.¹² On average, the entire ADAP serves 73,000 clients each month.¹²

Pharmacists lead and manage the HRSA AIDS Drug Assistance Program. They evaluate data and interpret policy pertaining to drug purchasing, formulary management, and dispensing HIV/AIDS medications. They also monitor State ADAPs' pharmaceutical expenditures and client utilization trends, and consult with State ADAPs on adopting strategies to contain prescription drug spending. Pharmacists help State ADAPs access the 340B Drug Pricing Program, a program that requires drug companies to provide outpatient drugs at a reduced price to State operated ADAPs and certain covered entities specified in statute 42 U.S.C. 340B(a)(4).¹⁴ PHS pharmacists play a significant role in helping State ADAPs stretch limited resources.

Serving the Nation's Medical Research Agency

With its 27 Institutes and Centers, The National Institutes of Health (NIH) is counted among the world's foremost medical research centers. It is also the lead Federal agency conducting and supporting medical research world wide. Its mission: to uncover new knowledge, produce important medical discoveries, and be the harbinger of progress in medical research. NIH's *intramural* program conducts research in its own laboratories. Its *extramural* program supports research conducted by non-Federal scientists in universities, medical centers, hospitals, and research institutions globally. To ensure continuity, NIH trains the current and next generation of investigators in medical research, and promotes medical information communication. NIH scientists investigate the causes, treatments, and cures for common and rare diseases, and fosters disease prevention. Although opportunities for pharmacists exist in the extramural program, this article examines the pharmacist's role in NIH's intramural program located on the Bethesda, MD campus.

The NIH Clinical Center (CC) is the nation's largest hospital devoted exclusively to clinical research. The CC facility currently has 242 inpatient beds, 90 day-hospital stations, and 15 clinics. The CC Pharmacy Department serves patients via a 24-hour inpatient pharmacy, an outpatient pharmacy, a satellite pharmacy for the National Cancer Institute (NCI), and full-

time clinical pharmacy support. Direct patient-oriented pharmaceutical care is the department's cornerstone. This benefits inpatients and outpatients enrolled in NIH intramural research protocols, and supports sophisticated research for health care providers and clinical investigators, resulting in rational, safe, and cost-effective pharmacotherapy.

As outlined in Table 1, NIH Clinical Center Pharmacy Services, CC pharmacists are involved in a variety of services and program areas.

Training others is a focus at the CC Pharmacy. Pharmacists train students, residents, and fellows who participate in American Society of Health Systems Pharmacy-accredited residency and fellowship programs. Annually, CC pharmacists present Pharmacotherapy Frontiers, a continuing education program that provides state-of-the-art information about latest drug therapy and pharmacy developments. Attendance usually exceeds 400, with pharmacists from all over the Mid-Atlantic region attending.

Fifty pharmacists work in various roles, including clinical specialties like oncology, infectious diseases, critical care, bone marrow and solid organ transplant, mental health, pediatrics, drug information, and ambulatory care. Pharmacists conduct and participate in approximately 1,000 research protocols (including 200 blinded studies) designed to enhance knowledge of commercially available and investigational agents. These pharmacists may also serve as principal and associate investigators on various NIH studies. For example, a pharmacist in the NCI's Medical Oncology Branch may be involved in antineoplastic drug development, pharmacogenetics and pharmacogenomics, evaluation of drug efficacy, clinical protocol development and implementation, and management of a pharmacokinetics core laboratory. Pharmacists may also serve as investigators in other NIH institutes, performing basic and clinical research. Good research often takes years; to ensure seamless transfer of responsibility, research pharmacists mentor the next generation of pharmacists interested in translational research.

Pharmaceutical Care in the Federal Bureau of Prisons (BOP)

Since 1930, PHS Commissioned Corps officers have provided and managed a variety of physical and mental health care services in the BOP. Throughout the United States, more than 100 PHS pharmacists practice in urban and rural federal correctional facilities. The BOP Pharmacy Program is comprised of a National Pharmacy Director, Clinical Pharmacy Director, Regional Pharmacy Consultants, HIV Clinical Pharmacy Consultants, managerial and staff institutional pharmacists. PHS pharmacists dispense medications from a National Pharmacy Formulary and fill prescriptions directly from patients' charts, counsel patients, provide drug utilization reviews, monitor labs, perform chart reviews, work in the chronic-care clinics, immunize patients, administer medications, and assist in daily duties of the correctional facility.

There are about 190,000 persons held in the federal prison system. Approximately, 1,900 federal prisoners have tested HIV positive. Moreover, 22% of the BOP's total pharmaceutical outlay goes towards HIV/AIDS medications. In 2004, to improve the quality and control the cost of providing pharmaceutical care for their HIV/AIDS population, the BOP selected PHS pharmacists to train in HIV disease and pharmacotherapy at the Johns Hopkins University Hospital, Baltimore, MD. PHS pharmacists provide HIV/AIDS therapeutic consultations for six BOP regions throughout the United States. They evaluate the appropriateness of drug regimens, monitor CD4 counts and viral load, and interpret genotype/phenotype resistance reports. In addition, PHS pharmacists serve as editors for the BOP National HIV Clinical Practice Guidelines and make recommendations to the BOP National Pharmacy and Therapeutics Committee. Furthermore, PHS pharmacists have entered into collaborative HIV drug therapy management agreements with the clinical directors. Under a clinical director's supervision and prescriptive authority, a PHS pharmacist may manage the care for up to 50

patients. The collaborative agreement grants PHS pharmacists the authority to initiate treatment, modify existing antiretroviral therapy, and order laboratory tests to stage the severity of infection. PHS Pharmacists thus play an integral role in managing care for the BOP's HIV/AIDS population.

Attracting and Retaining Clinicians: PHS Pharmacists Take Action

The Indian Health Service (IHS) is the PHS Agency responsible for providing health services to approximately 1.5 million American Indians and Alaska Natives (AI/AN) representing more than 557 federally recognized tribes in 35 states.¹⁵ IHS and tribally managed programs operate in over 230 hospitals and ambulatory clinics, many of which are located in rural communities in the western half of the United States and Alaska. The goal of IHS health care is to elevate the status of the AI/AN to the highest possible level.¹⁶ However, providing quality health care is often complicated by the geographical location. Many Indian Health Service (IHS) facilities have difficulties attracting and retaining clinicians because of concerns about isolation, limited health facilities, or lack of employment and education opportunities for their families. To address this concern, PHS pharmacists who have worked in isolated hardship, hazardous duty, and hard-to-fill environments were asked to provide input and assistance with designing and developing policy for incentives and improving family support for PHS officers assigned to isolated hardships, hazardous duty, and hard-to-fill sites. PHS pharmacists served on Working Policy and Design Groups to help implement an Assignment Incentive Pay program. This program will enable the U.S. Department of Health and Human Services (HHS) and certain non-HHS Federal agencies and programs to offer additional compensation to officers who accept assignments in hard-to-fill locations. PHS pharmacists are a part of multidisciplinary teams that refined and designed policy to deal with the challenges of attracting and retaining clinicians.

IHS's Invitation: Broaden Scope of Practice

An IHS pharmacy career invites pharmacists to broaden their scope of practice. Clinical advantages include full access to patient records, collegial relationships with multi-disciplinary medical staff, opportunities to participate in pharmacy specialized clinics, and direct patient care that foster patient trust. Many PHS pharmacists, as integral members of the emergency team, become certified in advanced cardiac life support (ACLS) and pediatric advanced life support (PALS). Many rural hospitals lack surgery and anesthesia staff. In that case, PHS pharmacists may coordinate and administer medications during sedation, rapid sequence intubation, traumatic injury, and cardiac codes.

Other health care professionals and administrators working in the Indian Health Service with PHS pharmacists have come to appreciate pharmacists' keen clinical abilities and managerial skills. Because of this, expanded clinical and leadership roles are often available. With their extensive education, particularly as it applies to medication management, PHS pharmacists are good candidates to become disease state experts, often managing and participating in chronic care specialty clinics in addition to their dispensing functions (Table 2). In these clinics, pharmacists typically have authority to order labs, perform physical assessments and execute medication changes via medical staff-approved treatment algorithms. Although these pharmacist-managed clinics are not a substitute for a corresponding medical specialist in the field of expertise, clinical pharmacists' skills and abilities (e.g. therapeutic medication knowledge of treatment goals and endpoints) are applied creatively to help patients who lack access to specialists.

Other growth opportunities such as becoming a certified immunizer make an IHS pharmacy career diverse and rewarding. Today, 46 states have enacted regulations permitting properly trained pharmacists to immunize patients within their guidelines. In September 2003, the Omak

Indian Health Station located in the north central Washington opened and was operated solely by a pharmacy staff. With no physicians or nurses on staff, Omak had to refer patients who were in need of immunizations to the main outpatient facility in Nespelem, WA located approximately 1 hour away. Patients' expenditures and time were substantial and were often barriers to adequate immunization. To improve the effectiveness and efficiency of care provided to these patients, in November 2006, a PHS Pharmacist successfully completed the American Pharmacists Association Pharmacy-Based Immunization Delivery, a national certificate program for pharmacists providing comprehensive immunization education and training. As of June 2007, a PHS pharmacist has immunized more than 40 patients at the Omak Indian Health Station.

Growing Generic Drug Needs - PHS Pharmacists' Role

Access to health care, including prescription medications, has been a growing problem in the U.S. and around the world in the past few decades as the cost of health care rises. According to the Agency for Healthcare Research and Quality (AHRQ), Americans spent more than \$553 billion for health care in 1997, of which \$72 billion was spent for prescription medicine.¹⁷ Since 1991, the cost of prescription drugs has surpassed the inflation rate, and has been the fastest growing segment of national health expenditures.^{17,18} Thus, it is not surprising that access to health care is one of the ten health indicators focused on in the federal government's *Healthy People 2010*.¹⁹ *Healthy People 2010* outlines the nation's public health goals in the 21st century; the astute pharmacist will find many opportunities for involvement in it.

PHS Pharmacists at the FDA's Office of Generic Drugs (OGD), working as project managers or scientific reviewers, advance *Healthy People 2010*'s goals through their work in the generic drug approval process. The Congressional Budget Office has concluded that generic drugs save consumers an estimated \$8 to \$10 billion annually at retail pharmacies, and more can be saved when hospitals use generics.²⁰ In 2006, the OGD received a record 793 abbreviated new drug applications (ANDAs) from generic drug firms and approved 510 (full and tentative) of these applications in a median of 16.6 months. At the OGD's Division of Bioequivalence, PHS pharmacists serve in many roles, one of which is Regulatory Review Officer. In this role, pharmacists review and evaluate ANDAs to ensure compliance with applicable regulations/guidance and to determine protocol, analytical methodology, in vitro dissolution testing, and in vivo bioequivalence study data adequacy. PHS pharmacists ensure that high quality, lower cost, safe, and effective generic drugs are available to the American public.

In addition to their contributions to domestic goals for improving access to health care, PHS pharmacists also contribute on a global level through their review of ANDAs that fall under the President's Emergency Plan for AIDS Relief (PEPFAR) program. In 2003, HHS implemented the PEPFAR Program to provide \$15 billion of AIDS relief over five years to countries with high HIV/AIDS incidence rates. In support of the PEPFAR program, the OGD implemented a rolling review process that gives PEPFAR ANDAs high priority; PEPFAR submissions are reviewed as they are received. Expedited review of PEPFAR ANDAs has accelerated generic antiretroviral availability to the fifteen PEPFAR focus countries in Africa, Asia, and the Caribbean. As of March 2007, PHS pharmacists have been involved with making generic antiretrovirals available to more than 1.1 affected individuals in the focus countries.²¹

Another FDA Role for PHS Pharmacist: Drug Safety

PHS pharmacists' mission is to support and recognize interventions that promote community health and prevent community health problems. Community health problems often include those related to or compounded by issues of drug safety. Under the purview of the Food and Drug Administration (FDA), many PHS pharmacists participate in the drug safety program. The FDA assesses safety during drug development and throughout the drug's marketing life

after approval. The FDA reviews clinical trial safety and efficacy data before approving drug and biologic products for marketing to the U.S. public. During the review process involving clinical trial data from hundreds to thousands of study subjects, FDA reviewers usually identify common adverse events. The common adverse events are included in professional labeling and, depending on the seriousness of the identified drug risks, FDA reviewers may recommend risk management plans to mitigate these risks. However, once a drug product is FDA-approved and marketed in the U.S., less frequent (rare) serious adverse events may emerge as larger numbers of people are exposed to the drug's benefit and risks. Thus, the FDA employs a life-cycle management approach to assess and manage medication safety.

Staff in the FDA's Office of Surveillance and Epidemiology (OSE) in the Center for Drug Evaluation and Research (CDER) evaluate drug risks and promote the safe use of drugs by the American people. During the post-market phase, the FDA continues to evaluate spontaneous adverse event and medication error reports, data from epidemiological safety studies, and drug utilization data associated with over-the-counter and prescription medications. The spontaneous adverse event reports, filed by consumers, healthcare professionals, and the pharmaceutical industry, form the framework of post-marketing surveillance program. In addition, OSE utilizes and interprets drug use data, epidemiological study protocols and study reports addressing drug safety issues, risk communication and management programs designed to promote the safe and effective use of drug products. Although OSE has the lead responsibility for post-marketing drug safety surveillance, detection and evaluation of adverse events and medication errors, it collaborates very closely with many other Offices and Divisions across CDER.

PHS Pharmacists are employed in various roles within OSE to accomplish the goals of the Office. Pharmacists as safety evaluators critically review adverse event reports submitted by manufacturers, health care professionals and consumers with the goal of identifying and evaluating new safety signals. When primarily serving in this capacity, safety evaluators work closely with epidemiologists and medical reviewers to develop the scientific basis for assessing and establishing the clinical significance of the identified safety signals. They play an active role in preparing for FDA advisory committee meetings and are often asked to present summaries of their safety reviews at these meetings. Furthermore, PHS pharmacists participate in risk management program development, pre-approval safety conferences between the FDA and drug sponsors, and in monitoring the impact of risk management programs.

Another role often filled by PHS pharmacists is as a safety evaluator whose primary responsibility is for pre- and post-marketing identification and assessment of medication errors related to nomenclature, labeling, and packaging. Their role in medication error surveillance requires the review of reports received by MedWatch, the United States Pharmacopeia, and the Institute for Safe Medication Practices. When serving in this capacity, safety evaluators collaborate with medical review divisions to implement intervention to minimize potential user error and risk with respect to drug labels, labeling, packaging, and/or nomenclature. They work closely with the Division of Drug Marketing and Advertising Communications to decide on acceptability of proprietary drug names to minimize medication errors.

PHS pharmacists may serve as project managers in OSE. They are responsible for planning, focusing, and coordinating all OSE review teams. Also, they manage and coordinate interactions between reviewers in OSE and other offices within CDER. In this function, they are considered to be the hub of the wheel that ensures the efficient flow of activities within each area of OSE and across disciplines in other CDER offices and divisions.

PHS pharmacists may serve as Drug Utilization Analysts in OSE and play a critical role in post-marketing drug safety surveillance. The Drug Utilization team, currently composed

entirely of pharmacists, is involved with acquisition, analysis, and interpretation of data from several proprietary drug use databases. They use these data to describe and analyze the manner in which drug products are employed throughout the United States. Drug Utilization Analysts query and analyze drug utilization databases and provide evaluative consultations on these data. National drug utilization data are often used as denominator data for evaluating rates of adverse event reports received by OSE safety evaluators for marketed drug products, and to understand and describe the context of adverse event occurrence. Drug use data may be used

- to describe prescribing patterns and use by specialty, patient demographics, or associated diagnoses/procedures.
- during risk management surveillance, and to assess impact of labeling changes or legislative changes on use of drug products.
- to provide insight into concurrent use of multiple drugs and assess market share of drugs in cases of withdrawal or drug shortage.
- to provide background information for Human Drug Advisory Committee members for vital meetings that are designed to help determine the approval or continued marketing of drugs.

Although the OSE Drug Utilization Analyst, the Safety Evaluator, or the Project Manager do not intervene directly at the patient level like the hospital or retail pharmacist, the post-marketing drug surveillance process affords PHS pharmacists the opportunity to shape drug safety programs at the national level. This program urges clinicians who do work directly with patients to increase vigilance of suspected adverse events. They ask patients, healthcare professionals, or caregivers treating these patients to report adverse events via the MedWatch Safety Information and Adverse Event Reporting Program 1(800)FDA-1088; fax 1(800)FDA-0178; web www.fda.gov/medwatch/report.htm. Should these reports indicate that a safety signal exist, OSE staff including PHS pharmacists evaluate the situation and determine the next course of action for the best interest of public health.

National Security: Coast Guard Pharmacy

The United States Public Health Service (USPHS) provides the U.S. Coast Guard (USCG), a division within the Department of Homeland Security, with many of its healthcare professionals such as family nurse practitioners, physicians and pharmacists. PHS pharmacy officers detailed to the USCG are subject to the Uniform Code of Military Justice and wear USCG uniforms; however, their uniform epaulets (“shoulder boards”) or “collar devices” have the anchor and caduceus emblem of the USPHS. There are 16 pharmacists who serve with the USCG; 13 of whom serve in ambulatory care clinics and 3 as administrators. The pharmacists’ role in the USCG is to ensure the Coast Guardsmen and women they support receive the pharmaceuticals they require in order to carry out the missions of the USCG. The missions of the USCG include illegal drug interdiction, illegal immigrant interdiction, national defense operations, search and rescue operations, and ensuring that aids to navigation, such as buoys, are operational.

The field pharmacists are assigned to ambulatory care clinics located on the coasts of the continental U.S. as well as Kodiak, Alaska. In addition to running the pharmacy clinic to which they are assigned, USCG pharmacists have “collateral duty units” they support.²² Collateral duty units are defined as those “units with medical personal that have a pharmacy,” but no pharmacy officer.²³ USCG policy specifically regulates what these collateral duty unit pharmacies are permitted to stock.²⁴ and how they are to be run.²⁵ All of these units have at least a “corpsmen” (specially trained non-officer, medical technicians who are responsible for medical operations at the unit at which he/she works) and many times physicians or physician assistants. These units include air stations, cutters, port security units and many others. To

support these units USCG pharmacy officers conduct regular visits to the units, assist in the pharmacy and therapeutics committee process for their assigned units, and serve as the primary point-of-contact on all pharmacy-related issues for their assigned units.

USCG pharmacy officers also play a pivotal role in preparing units for deployment to the Middle East. For example, they serve as the points-of-contacts for the management of procuring and storing smallpox and anthrax vaccinations for the USCG. In addition, they coordinate the procurement and management of biological and nerve agent antidotes such as auto-injectable diazepam and atropine for USCG personnel. These roles are obviously outside mainstream pharmacy practice and add an interesting component to their pharmacy practice. Although few in number, USCG pharmacy officers provide a critical role in a very specific situation of the public healthcare scene in keeping with the vision of the USPHS.

Conclusion

Agencies in the USPHS offer a variety of assignment possibilities in numerous geographic locations for pharmacists. Pharmacists employed by the USPHS may spend a career in one agency, but transfer among the agencies is more likely. This translates to considerable potential for assignment variety and professional challenge, all while maintaining employment (and benefits) with the same organization. This uniformed service's unique structure creates an unusual and lasting bond among its members that is unrivaled in the civilian sector.

Acknowledgments

To RADM Robert E. Pittman, CAPT Robert Tosatto, CDR Judy L. Rose, CDR Mark McClain, and CDR Kenneth Hill, for helpful comments provided during the preparation of this manuscript.

References

1. Young, D. Public Health Service Evolves to Meet a Nation's Needs. *Am J Health-Syst Pharm*. 2006 [December 28 2007]. Accessed at http://www.ashp.org/s_ashp/article_news.asp?CID=167&DID=2024&id=13857
2. Haffer AS, Rogers JR, Montello MJ, Ostroff C. 2001 anthrax crisis in Washington, D.C.:clinic for persons exposed to contaminated mail. *Am J Health-Syst Pharm* 2002;59:1189–92. [PubMed: 12073860]
3. Montello MJ, Ostroff C, Frank EC, et al. 2001 anthrax crisis in Washington, D.C.: pharmacists' role in screening patients and selecting prophylaxis. *Am J Health-Syst Pharm* 2002;59:1103–9.
4. Babb J, Downs K. Fighting back: Pharmacists' Roles in the Federal Response to the September 11 Attacks. *J Am Pharm Assoc* 2001;41:834–7.
5. Setlak P. Bioterrorism preparedness and response: Emerging role for health-system pharmacists. *Am J Health-Syst Pharm* 2004;61:1167–75. [PubMed: 15237570]
6. Velazquez L, Dallas S, Rose L, et al. A PHS pharmacist team's response to Hurricane Katrina. *Am J Health-Syst Pharm* 2006;63:1332–35. [PubMed: 16809753]
7. Young D. Pharmacist's journey leads to distinct career. *Am J Health-Syst Pharm* 2006;64:1026–28.
8. Young D. McGinnis fills new Tricare pharmacy role. *Am J Health-Syst Pharm* 2006;63:604–606.
9. Young D. Medical Reserve Corps pharmacists assist evacuees. *Am J Health-Syst Pharm* 2006;63:296–299. [PubMed: 16452511]
10. Young D. Pharmacist leads new security office. *Am J Health-Syst Pharm* 2007;64:1130–34. [PubMed: 17519449]
11. Glynn, M.; Rhodes, P. Estimated HIV prevalence in the United States at the end of 2003. National HIV Prevention Conference; Atlanta, GA. June 2005; [July 24, 2007]. Accessed at <http://www.aegis.com/conferences/NHIVPC/2005/T1-B1101.html>

12. U.S. Department of Health and Human Services, Health Resources and Services Administration, HIV/AIDS Bureau. Title II: AIDS DRUG ASSISTANCE PROGRAM. [July 24, 2007]. Accessed at <http://hab.hrsa.gov/programs/adap/>
13. U.S. Department of Health and Human Services. New Release HHS Awards \$1.1 Billion to Help States, Territories Deliver HIV/AIDS Care. [July 27, 2007.]. Accessed at <http://www.hhs.gov/news/press/2007pres/20070405a.html>
14. U.S. Department of Health and Human Services, Health Resources and Services Administration. Pharmacy Affairs & 340B Drug Pricing Program. [July 24, 2007.]. Accessed at <http://www.hrsa.gov/opa/introduction.htm>
15. U.S. Department of Health and Human Services, Indian Health Service. [September 19, 2007.]. Accessed at <http://www.pharmacy.ihs.gov/>
16. Pavvola FG, Dermanoski KR, Pittman RE. Pharmaceutical services in the United States Public Health Service. *Am J Health-Syst Pharm* 1997;54:766–772. [PubMed: 9099342]
17. Research in Action. Agency for Healthcare Research and Quality; Rockville, MD: Sep2002 [June 21, 2007.]. Prescription Drug Therapies: Reducing Costs and Improving Outcomes. AHRQ Publication No. 02-0045 Accessed at <http://www.ahrq.gov/qual/rxtherapies/rxria.htm>
18. U.S. General Accounting Office. Prescription Drugs: Price Trends for Frequently Used Brand and Generic Drugs from 2000–2004. 2005 Aug 15 [June 21, 2007.]. Accessed at <http://www.gao.gov/new.items/d05779.pdf>
19. Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services. Healthy People. 2010 [September 13, 2007.]. Accessed at <http://www.healthypeople.gov/Default.htm>
20. A Congressional Budget Office Study. How Increased Competition From Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry. [September 10, 2007.]. Accessed at <http://www.cbo.gov/ftpdocs/6xx/doc655/pharm.pdf>
21. U.S. President's Emergency Plan for AIDS Relief. Latest 2007 PEPFAR Treatment Results. [June 21, 2007.]. Accessed at <http://www.pepfar.gov/documents/organization/85886.pdf>
22. Huntzinger PE. Pharmacy officer support of USCG cutters. *Mil Med* 2000;165:855–9. [PubMed: 11143434]
23. US Coast Guard Health Services Quality Improvement Implementation Guide #45. Pharmacy Officer Collateral Duty Program. [September 7, 2007.]. Accessed at <http://www.uscg.mil/hq/g-w/g-wk/wkh/QAIG/indexQAIG.htm>
24. US Coast Guard Commandant Instruction M6700.6F. Health Services Allowance List Afloat. [September 7, 2007.]. Accessed at <http://www.uscg.mil/hq/g-w/g-wk/wkh/pubs/index.htm>
25. US Coast Guard Commandant Instruction M6000.1C. Medical Manual. [September 7, 2007.]. Accessed at <http://www.uscg.mil/hq/g-w/g-wk/wkh/pubs/index.htm>

Table 1**NIH Clinical Center Pharmacy Services**

Basic Services
<ul style="list-style-type: none">• drug distribution• investigational drug management• clinical program participation• research and scientific activities
The Pharmaceutical Development Section
<ul style="list-style-type: none">• manages investigational drugs through a computerized information system• manufactures customized investigational drug formulations• helps investigators structure randomized studies• files Investigational New Drug (IND) applications with the FDA
Clinical Programs
<ul style="list-style-type: none">• designs and implements drug selection tools and experimental protocols• monitors patient response to drug therapy• conducts drug use evaluation• provides patient education
Department Research
<ul style="list-style-type: none">• creates and disseminates drug dosing knowledge• develops protocols• monitors and formulates agents under clinical investigation
Clinical Pharmacokinetic Research Laboratory (CPRL)
<ul style="list-style-type: none">• assists investigators in pharmacokinetic/pharmacodynamic study design, analysis, and interpretation• supports NIH scientists in drug interaction studies, drug disposition characterization, and analytical support

Table 2

Pharmacist-Staffed Chronic Care Specialty Clinics in the Indian Health Service

-
- Anticoagulation
 - Asthma
 - Congestive Heart Failure
 - Diabetes
 - Dyslipidemia
 - Immunization
 - Smoking Cessation
-