

ASHP Statement on the Role of Health-System Pharmacists in Public Health

Position

Pharmacists who practice in hospitals and health systems (health-system pharmacists) play a vital role in maintaining and promoting public health. The American Society of Health-System Pharmacists (ASHP) believes that all health-system pharmacists have a responsibility to participate in global, national, state, regional, and institutional efforts to promote public health and to integrate the goals of those initiatives into their practices. Furthermore, health-system pharmacists have a responsibility to work with public health planners to ensure their involvement in public health policy decision-making and in the planning, development, and implementation of public health efforts.

The primary objectives of this statement are to (1) increase awareness of health-system pharmacists' contributions to public health, (2) describe the role of health-system pharmacists in public health planning and promotion, and (3) identify new opportunities for health-system pharmacists' involvement in future public health initiatives. This statement does not provide an exhaustive review of health-system pharmacists' public health activities. Its intent is to stimulate dialogue about the role that health-system pharmacists can play in providing care that improves public health in the United States.

Background

Public health has been defined simply as "what we as a society do to assure the conditions in which people can be healthy."¹ In contrast to medicine, public health initiatives "emphasize the prevention of disease and the health needs of the population as a whole."²

Public health services have been characterized as occurring on two levels: the planning ("macro") level and the implementation ("micro" or "provider") level.³ Macro-level public health services focus on the well-being of the population as a whole and emphasize the assessment and prioritization of a community's health-related needs as well as planning to address those needs. Such services include working with community representatives in identifying health-related community problems; setting community health priorities; formulating community health programs and policies; managing, administering, and evaluating community health-promotion programs; educating the community in ways that promote public health; and researching, presenting, and publishing information about public health activities.³ These macro-level activities are carried out by public health professionals with varying backgrounds, degrees, and interests.

Micro-level public health services include all the activities required to implement public health initiatives. Many of these services are performed on a provider-to-patient or a program-to-population basis, usually with a specific health-related outcome in mind.⁴ Examples of such services include disease screening, immunization, counseling for at-risk populations, and tobacco-cessation programs.

One concept underlying many public health activities is prevention, which is commonly categorized into three types: primary prevention (reducing the actual incidence and occurrence of diseases, injuries, and disability), secondary prevention (decreasing the severity or progression of the disease, injury, and disability), and tertiary prevention (treatment or rehabilitation to return the disease, injury, or disability to the initial or baseline state).⁵ Public health efforts on the macro and micro levels can fall anywhere along the prevention spectrum and can reinforce each other. For example, Healthy People 2010 (a macro-level public health policy) aims to reduce the number of hospital admissions attributable to drug therapy management problems (primary prevention).⁶ Policies implemented by individual hospitals (on the micro level) will allow clinicians to quickly identify such adverse drug events (ADEs) and prevent them from worsening (secondary prevention), as well as treat the affected patients (tertiary prevention). Pooling and evaluating these clinical experiences can lead to the development of dispensing guidelines or utilization studies that could be used as a primary prevention tool on the macro level.

The health-system pharmacist's role in public health, and the distinction between individualized patient care and public health efforts, can be illustrated by several examples. Providing optimal pharmacotherapy to a single patient has great value. Nonetheless, lessons learned from the management of individual patients can have an even greater impact when they result in practice guidelines or health policies that affect the larger population. Such policy development requires careful evaluation and synthesis of health information using epidemiologic principles. Similarly, identification of a specific ADE is an important patient care service routinely performed by health-system pharmacists. The pharmacoepidemiologic study of ADEs across a population, coupled with action to prevent or mitigate such events, can have a significant impact on public health. Counseling a patient on the proper use of a medication helps that patient. When that knowledge is systematically evaluated and used to develop better behavioral outcomes, general public health can be improved. Finally, a health-system pharmacist who dispenses medications as a member of an emergency-response team has a limited impact on public health. However, the same health-system pharmacist working with emergency-preparedness planners to develop policies and programs that ensure proper utilization of the full range of pharmacy services during a disaster can have an enormous effect on the health of the affected population.

Public Health Activities of Health-System Pharmacists

In 1981, the American Public Health Association (APHA) outlined the public health role of the pharmacist in a pioneering statement.⁷ This succinct policy position, building on a previous APHA publication,⁸ declared that pharmacists were an underutilized resource in promoting public health

and described an array of functions that could be performed by pharmacists, from providing direct personal health care services to planning for health care for communities or wider geographic areas. In 2004, the American Association of Colleges of Pharmacy recognized the important role pharmacists can play in public health by including population-based care and public health in its Center for Advancement in Pharmaceutical Education (CAPE) Educational Outcomes.⁹ These outcomes also emphasized the pharmacist's role in the public health components of "health improvement, wellness, and disease prevention" and the need for pharmacist involvement to ensure the "availability of effective, quality health and disease prevention services," as well as the urgency to "develop public health policy."⁹

The public health duties that an individual health-system pharmacist performs will vary, based on the individual's experience, abilities, training, and work setting. ASHP believes that all health-system pharmacists, working alone or in collaboration with health care colleagues and administrators, can contribute to the promotion of public health. ASHP believes that health-system pharmacists have specific public-health-related responsibilities in infection control¹⁰; substance abuse prevention, education, and treatment¹¹; immunization¹²; tobacco cessation¹³; and emergency preparedness and response.¹⁴ The following are examples of other activities that health-system pharmacists can engage in to promote public health:

- Providing population-based care,
- Developing disease prevention and control programs (including medication safety programs) in their institutions and communities,
- Developing health-education policies and programs within their institutions that address the needs of patients, other health care professionals, community leaders, and the public,
- Collaborating with state and local authorities, including local and state health departments and boards of health, to address local and regional health care needs (including environmental hazard and emergency-preparedness programs),
- Advocating for sound legislation, regulations, and public policy regarding disease prevention and management, and
- Engaging in population-based research and initiating campaigns to disseminate new knowledge.

Population-Based Care. The Institute of Medicine, in *Crossing the Quality Chasm: A New Health System for the 21st Century*, presented the problems of health care quality in the United States and provided recommendations for change.¹⁵ Subsequent follow-up reports, including *Priority Areas for National Action: Transforming Health Care Quality*, have provided additional direction related to population-based care.¹⁶ The CAPE Educational Outcomes recommended that pharmacists engage in both patient-centered and population-based care, suggesting that a core competency of pharmacists is the ability to develop "population-specific, evidence-based disease management programs and protocols based upon analysis of epidemiologic and pharmaco-economic data, medication use criteria, medication use review and risk reduction strategies."⁹

Over the past two decades, the expanding role of health-system pharmacists in patient care has allowed them to support public health efforts by designing and providing disease management programs. ASHP urges health-system pharmacists to build on this foundation by leading their institutions' efforts to provide population-based care. By working with their health care colleagues through such institutional mechanisms as the pharmacy and therapeutics committee and using tools such as medication-use evaluation, health-system pharmacists can contribute to population-specific, evidence-based disease management programs tailored to fit the needs of the institutions and communities they serve. Health-system pharmacists can participate in quality reviews and ensure that evidence-based treatments are used for all patients to help alleviate health care disparities.

Disease Prevention and Medication Safety. Health-system pharmacists can be involved in disease prevention and control in many ways. For example, they can help develop institutional screening programs to check immunization status and identify undiagnosed medical conditions (e.g., hypertension, diabetes, hyperlipidemia, depression). The health-system pharmacist's role in medication safety and error prevention is in keeping with the national public health goals outlined in the federal government's Healthy People 2010 initiative, which include reducing the number of hospital admissions resulting from drug therapy mismanagement and fostering programs to intercept counterfeit medications.⁶ Medication reconciliation programs are one example of the tools pharmacists can encourage their facilities to use to achieve these goals.

Health Education. Health-system pharmacists can promote public health by developing patient education programs on safe and effective medication use¹⁷ and other public health-related topics, such as tobacco cessation, exercise, and healthy nutrition. Pharmacists should support the education and training of the population at an early age, such as through school health programs, to help children develop good health behaviors that can continue into adulthood. Furthermore, health-system pharmacists can improve society's use of medications by educating their health care colleagues about safe and effective medication use. Health-system pharmacists can also use their knowledge and expertise to educate community leaders (e.g., legislators, regulators, public officeholders, school officials, religious leaders) about and involve them in public health initiatives.

Public Health Policy. Health-system pharmacists should be encouraged to participate in public health policy development, from local boards of health to national programs. By linking disease prevalence, drug utilization, and the determinants of disease, health-system pharmacists can place prevention within a larger context. Drugs play a central role in health, and health policy, especially policy directed at chronic disease, must be formulated with a better understanding of the relationship of drug therapy to the many other factors that affect disease outcomes. Since medication use increases as patients age, health-system pharmacists will face increasing responsibilities to ensure appropriate and cost-effective medication use as the average age of the U.S. population rises.

Health-system pharmacist participation in emergency planning and service delivery is critical. Requirements for new and enlarged inventories of specialized pharmaceuticals to provide prophylaxis and treatment to communities during emergencies are growing. The Centers for Disease Control and Prevention's Strategic National Stockpile (SNS) program, for example, includes 12-hour push packages, vendor-managed inventory, "chempacks," vaccines, and medical supplies.¹⁸ Hospital and health-system pharmacies are essential in planning for accommodation of supplies, such as antibiotics and antidotes needed in the initial 24 hours following a crisis, before state and federal assets become available. Community-based planning efforts for mass immunization, prophylaxis, and treatment, including pandemic response to biological, chemical, radiological, or explosive agents, are an ongoing process, as is planning for utilization of the SNS. Medication management is a critical component of all these contingencies, yet many of the plans do not address pharmacy participation. Involvement of health-system pharmacists is critically important to reliably address medication issues.

ASHP encourages pharmacists to serve on National Disaster Medical System assistance teams (<http://ndms.dhhs.gov>), the National Pharmacy Response Team (www.ndms.dhhs.gov/nprt.html), or local units of the Medical Reserve Corps (www.medicalreservecorps.gov) to assist in distributing emergency supplies of pharmaceuticals, dispensing and administering medications and immunizations, and managing the drug therapy of individual victims.¹⁴ The development, implementation, and revision of local emergency operations plans, which include public health management of emergencies, require pharmacist input. Health-system pharmacists need to be actively involved in planning for procurement, distribution, and dispensing of medications, as well as ongoing management of patient medication issues.

Pharmacists should also work with health-system administrators to develop policies and initiatives that heighten awareness of the applicable laws and best management practices in the proper handling and disposal of hazardous drugs.

As medication-use experts and experienced health-system administrators, health-system pharmacists can and should contribute to the development of public-health-related legislation and regulation and should be involved in public program oversight and administration. Legislators, regulators, and program managers at all levels of government should be educated to utilize this expertise. Health-system pharmacists, as individuals and through their professional associations, state and local boards of health, and state boards of pharmacy, are encouraged to participate in legislative, regulatory, and oversight processes.

Research and Training. To assume a greater responsibility in public health, health-system pharmacists must receive adequate education and training. Pharmacy curricula should include advanced coursework in public health and research design. Health-system pharmacists need to be proficient in research methodology, pharmacoepidemiology, and biostatistics and their applications to public health decision-making. Knowledge and experience in the design, conduct, and interpretation of clinical studies (both observational and experimental) are essential. Health-system pharmacists have the opportunity to participate in collaborative research and

serve on institutional review boards, data monitoring and safety committees, and expert medication advisory committees. Experiential and didactic training for practicing health-system pharmacists, students, residents, and research fellows should include exposure to research in public health policy, pharmacoepidemiology, pharmacoecomics, health-related quality of life, and evidence-based medicine. Health-system pharmacists should also work directly with public health policymakers and other key stakeholders, such as professional organizations, medical centers, academic institutions, governmental agencies, and third-party payers, to promote optimal pharmacotherapy.

Future Roles

Revolutionary progress in basic biomedical sciences, including human genomics, stem-cell biology, immunology, biomedical engineering, and bioinformatics, has provided an unprecedented supply of information for improving human health. The rapidly emerging fields of population genetics and pharmacogenomics highlight the significance of molecular techniques in the clinical diagnostic laboratory and the potential for application in patient-directed pharmacotherapy. Medication-prescribing decisions will increasingly rely on the results of genotyping of drug-metabolizing enzymes. New technology and practices will allow health-system pharmacists to reduce treatment failures and prevent adverse drug reactions through the proper application of pharmacogenetic principles.¹⁹ Advances in informatics will permit aggregation and application of population- and patient-specific clinical data in ways that will encourage development of population-specific, evidence-based disease management programs. As medication-use experts, health-system pharmacists will need to apply these new tools not simply to improve patient-specific pharmacotherapy but to advance public health. Similarly, innovations in medication delivery technology will allow more complex therapies to be administered outside institutional settings. Patients, caregivers, and health professionals will require education about the safe use of such technologies, as will the legislators and other officials responsible for regulating their use.

Conclusion

Health-system pharmacists play a vital role in maintaining and promoting public health. ASHP believes that all health-system pharmacists have a responsibility to participate in global, national, state, regional, and institutional efforts to promote public health and to integrate them into their practices and that health-system pharmacists should be involved in public health policy decision-making and in the planning, development, and implementation of public health efforts. Health-system pharmacists can improve public health by providing population-based care; developing disease prevention and control programs; providing health education; collaborating with state and local authorities to address local and regional health care needs, including emergency preparedness and response; advocating for sound legislation, regulations, and public policy regarding disease prevention and management; and engaging in public health research.

References

1. Committee for the Study of the Future of Public Health. The future of public health. Washington, DC: National Academies Press; 1988:1.
2. Higher education for public health. New York: Milbank Memorial Fund; 1976.
3. Bush PJ, Johnson KW. Where is the public health pharmacist? *Am J Pharm Educ.* 1979; 43:249–53.
4. Bush PJ, ed. The pharmacist role in disease prevention and health promotion. Bethesda, MD: ASHP Research and Education Foundation; 1983:3.
5. Ives TJ, DerMarderosian AH. Pharmacists and public health. In: Hendrickson R, Beringer P, DerMarderosian AH et al., eds. Remington: the science and practice of pharmacy. 21st ed. Philadelphia: Lippincott Williams & Wilkins; 2006:51.
6. Office of Disease Prevention and Health Promotion. Healthy People 2010. www.healthypeople.gov/document/HTML/Volume2/17Medical.htm (accessed 2007 Dec 27).
7. American Public Health Association. APHA policy 8024: the role of the pharmacist in public health. *Am J Public Health.* 1981; 71:213–6.
8. Cain RM, Kahn JS. The pharmacist as a member of the health team. *Am J Public Health.* 1971; 61:2223–8.
9. Center for Advancement in Pharmaceutical Education (CAPE) Educational Outcomes 2004. www.aacp.org/Docs/MainNavigation/Resources/6075_CAPE2004.pdf (accessed 2007 Nov 27).
10. American Society of Health-System Pharmacists. ASHP statement on the pharmacist's role in infection control. *Am J Health-Syst Pharm.* 1998; 55:1724–6.
11. American Society of Health-System Pharmacists. ASHP statement on the pharmacist's role in substance abuse prevention, education, and assistance. *Am J Health-Syst Pharm.* 2003; 60:1995–8.
12. American Society of Health-System Pharmacists. ASHP guidelines on the pharmacist's role in immunization. *Am J Health-Syst Pharm.* 2003; 60:1371–7.
13. American Society of Health-System Pharmacists. ASHP therapeutic position statement on smoking cessation. *Am J Health-Syst Pharm.* 1999; 56:460–4.
14. American Society of Health-System Pharmacists. ASHP statement on the role of health-system pharmacists in emergency preparedness. *Am J Health-Syst Pharm.* 2003; 60:1993–5.
15. Committee on Quality of Health Care in America. Crossing the quality chasm: a new health system for the 21st century. Washington, DC: National Academy Press; 2001.
16. Adams K, Corrigan JM, eds. Priority areas for national action: transforming health care quality. Washington, DC: National Academies Press; 2003.
17. American Society of Health-System Pharmacists. ASHP guidelines on pharmacist-conducted patient education and counseling. *Am J Health-Syst Pharm.* 1997; 54:431–4.
18. Centers for Disease Control and Prevention. Strategic National Stockpile. www.bt.cdc.gov/stockpile/ (accessed 2007 Nov 20).
19. Spear BB, Health-Chiozzi M, Huff J. Clinical applications of pharmacogenetics. *Trends Mol Med.* 2001; 7:201–4.

Other Resources

Pharmacists looking for further involvement in public health have many options. First, training and competence in public health disciplines are invaluable in understanding the field of public health and its applications to pharmacy practice. Accredited schools of public health offer traditional didactic classes, and some have courses or continuing education available on-line that will give the beginner a clearer understanding of the four traditional areas of public health practice: health administration and policy, health education, biostatistics, and epidemiology. Pharmacists who wish to pursue a degree in public health can also do so on-line at a growing number of schools of public health (www.asph.org/document.cfm?page=718).

Pharmacists with an interest in federal public health initiatives can start with one of three main points of access. The first is the Centers for Disease Control and Prevention (www.cdc.gov), the largest repository of documents, program descriptions, and contacts in the realm of prevention. Major efforts aimed at disease surveillance, infectious disease control, immunization, health education, chronic disease maintenance, and disease-related data management provide an ample and readily available source of information. The second major source of information is the Office of Disease Prevention and Health Promotion (<http://odphp.osophs.dhhs.gov>), which provides access to Healthy People 2010, a health information clearinghouse, national dietary guidelines, and information about health observances. Finally, the Agency for Healthcare Research and Quality (www.ahrq.gov) provides information on evidence-based clinical practice, the Guide to Clinical Preventive Services (www.ahrq.gov/clinic/pocketgd.htm), and quality measurement of health care. Virtually the entire realm of public health within the U.S. Public Health Service can be accessed or linked via these three websites.

State government websites provide public health information for their respective states. State entities serve as the main policymaking entity for public health priorities and strategies, provide a conduit for federal public health dollars, and are the main repository of health information and data for the state. States often organize a range of advisory groups, task forces, and planning committees whose output shapes their public health agenda. These entities also provide input and direction for state legislative bodies to address, legislate, and fund.

On the local level, boards of health serve as the main government entities involved in public health. Aside from their usual routine of immunizations and restaurant inspections, these boards serve as the policymakers for disaster response and provision of primary care to underserved populations. They receive federal and state dollars that are used to fund public health efforts. They are closest to the general population both in their makeup and in their efforts at improving the public's health. Pharmacists interested in learning more about public health and the types of activities that community public health agencies are involved in can register for a free interactive tutorial at www.nynj-phtc.org/orientation.

Below is a list of websites that provide information related to public health.

Public Health Organizations

- World Health Organization (www.who.int)
- Pan American Health Organization (www.paho.org)
- American Public Health Association (www.apha.org)
- Association of State and Territorial Health Officials (www.astho.org)
- National Association of County and City Health Officials (www.naccho.org)
- Public Health Foundation (www.phf.org)
- Association of Schools of Public Health (www.asph.org)

Federal Health Agencies

- U.S. Department of Health and Human Services (www.dhhs.gov)
- Office of the Surgeon General, Public Health Priorities (www.surgeongeneral.gov/publichealthpriorities.html)

- Centers for Disease Control and Prevention (www.cdc.gov)
- Food and Drug Administration (www.fda.gov)
- Health Resources and Services Administration (www.hrsa.gov)
- National Institutes of Health (www.nih.gov)
- Agency for Healthcare Research and Quality (www.ahrq.gov)
- Environmental Protection Agency (www.epa.gov)

Developed through the ASHP Council on Pharmacy Practice and approved by the ASHP Board of Directors on January 12, 2007, and by the ASHP House of Delegates on June 24, 2007.

Copyright © 2008, American Society of Health-System Pharmacists, Inc. All rights reserved.

The bibliographic citation for this document is as follows: American Society of Health-System Pharmacists. ASHP statement on the role of health-system pharmacists in public health. *Am J Health-Syst Pharm.* 2008; 65:462–7.