

The Vital Relationship Between Public Health and Pharmacy

Stuart A. Capper, DrPH, Professor and Director, Institute for Public Health and Pharmacy, Samford University

Charles D. Sands, III, PharmD, Associate Professor and Chairman, Pharmacy Practice, Samford University

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Public health and pharmacy have been closely associated for millennia. The public health profession associates the image of Hygeia, the Greek mythological goddess of health, with the practice of public health. Hygeia is one of the most widely recognized symbols of public health practice. Almost all representations of the goddess Hygeia show her holding a large bowl and a snake. The bowl is known as the Bowl of Hygeia and it is the universally recognized symbol for the profession of pharmacy. Health, hygiene, and pharmacy are inextricably linked.

Although pharmacists play an important role in most state public health systems, little has been done to try to maximize the community health status benefits that might accrue from of a close, coordinated relationship between the practices of pharmacy and public health. The purpose of this commentary article is to describe some of the current thinking and activities that are addressing this endeavor.

Public Health has been described by the Institute of Medicine of the National Academy of Sciences as “what we as a society do to assure the conditions in which people can be healthy.”[1] Hence, Public Health is about prevention and what we can do as communities to raise the health status of our entire population by preventing disease, disability, and premature death.

Public health services have been characterized as occurring on two levels: the planning (or “macro”) level and the implementation (“micro” or “provider”) level. While many pharmacy enabled prevention activities have been described that can be implemented at the micro level by community pharmacists, evidence suggests that a small minority of community pharmacies are involved in preventive services delivery.

As an example, a recent study by Jeanine Mount[2] of the University of Wisconsin and others presented at the 2006 meeting of the American Association of Colleges of Pharmacy, surveyed nearly 1700 community pharmacies and found that only 17.9 percent of the respondents were involved in pharmacy based immunization delivery – one of the most common and fundamental preventive services.

The importance of expanding community pharmacy based immunization services substantially over the low levels found in the Mount study, goes beyond traditional public health concerns. Today in public health practice, there are significant concerns about our capacity to respond to a pandemic disease outbreak or to a widespread outbreak of disease as a result of terrorism. Many of the scenarios about how society must respond include the delivery of vaccinations. The provision of vaccinations to thousands of people over a large geographic area in a very short period of time is a complex undertaking requiring many well trained individuals. The state health department in New York announced that it will propose legislation to “authorize the Commissioner of Health

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and local health officers to train and authorize unlicensed persons to give immunizations"[3] so that they could be called into service when widespread and rapid vaccination programs are required. How the health department would select the individuals to be trained throughout the state, how they would train so many people in this skill, and most importantly, how they would assure the maintenance of these vaccination skills over time is a substantial challenge. Clearly, widespread adoption of community pharmacy based vaccination services would address this issue and provide the public health capacity to respond to large scale vaccine preventable disease outbreaks.

While it is fundamental to community health status and disaster response, immunization is only one of a number of community pharmacy based preventive health services that can be enhanced by closer collaborations between public health practice and pharmacy practice. Examples include community pharmacy enabled screening programs to increase early therapeutic interventions in numerous chronic diseases states such as diabetes, hyperlipidemia, obesity and hypertension.

The Veterans Administration (VA) has been especially active in the use and evaluation of pharmacy enabled preventive interventions. In one recent study[4], the Philadelphia, Pennsylvania VA Medical Center was the setting for a prospective controlled study to determine whether pharmaceutical care provided in a pharmacist-managed hypertension clinic would result in better treatment outcomes when compared with traditional care from a primary care physician. Eighty-one percent of the patients in the pharmacy care intervention group attained their blood pressure goal of below 140/90 mm Hg at the completion of the study versus only 30% in the control group ($P < 0.0001$).

In addition to the various pharmacy based preventive services that address specific disease states, the current epidemic of adverse drug events could be significantly impacted by more widespread delivery of medication therapy management services through community pharmacies. Congress specifically noted the importance of the availability of such a pharmacy enabled service in the statutory language of the new Medicare Part D prescription drug benefit. The language in the statute states:

A medication therapy management program described in this paragraph is a program of drug therapy management that may be furnished by a pharmacist and that is designed to assure, with respect to targeted beneficiaries described in clause (ii), that covered part D drugs under the prescription drug plan are appropriately used to optimize therapeutic outcomes through improved medication use, and to reduce the risk of adverse events, including adverse drug interactions.[5]

The relationship between public health and pharmacy, at the provider or "micro" level of practice, creates direct patient specific interventions for improving community health status. However, the relationship at the "macro" level may be even more fundamental to the establishment of effective pharmacy enabled preventive services.

Macro level public health activities focus on the health status of the community as a whole and emphasize assessment, policy development, and planning and evaluation to assure needed services. Such activities include working with community representatives to diagnose and investigate community health problems; establishing community partnerships to prioritize solutions to health problems; developing policies and plans that

support individual and community prevention efforts; managing, administering, and evaluating community health-promotion programs; educating the public on community health needs and public health policy issues; and conducting research on the effectiveness of public health activities and communicating the results of research efforts.[6]

Over 25 years ago, Bush and Johnson pointed out the importance of pharmacists at the macro level. They stated in part, “The lack of attention to the need for pharmacists at the macro level of the health-care system has affected the micro level as well. It is the *macro level public health pharmacist* (emphasis added) who can address the problem of incentives for pharmacists to perform micro level public health activities. Macro level public health pharmacists who are knowledgeable about the training and abilities of pharmacists (and who understand the health-care system, inter-professional relationships and health economics) can suggest system level changes that can provide direct and indirect incentives (money and its substitutes) to pharmacists to perform public health activities.”[7]

Today, approximately 1% of all public health employees are pharmacists.[8] It is likely that the single largest group of public health pharmacists is serving at the federal level through various roles in the United States Public Health Service including substantial numbers with medical care delivery systems such as the Indian Health Service. Smaller pharmacy cohorts’ function at the state and local levels of public health practice.

The primary responsibility for the delivery of public health services in the United States resides at the state level. Protection of the public’s health is primarily a state function and hence the majority of all authority to take actions for public health is within the police powers of the states. The roles and responsibilities of pharmacists at the state level of the public health system are vital, not only to the effective delivery of preventive services through traditional public health agencies, but, as Bush and Johnson suggest, they are fundamental to the expansion of pharmacy enabled preventive health services within our communities. The importance of these roles for pharmacists, not only at the micro level but also at the macro level of public health practice is now being recognized by the academic pharmacy community.

New competency requirements from the Accrediting Council on Pharmacy Education are aimed at increasing both the knowledge among pharmacy students about the public health system, and the public health competencies of graduates of PharmD programs. The standards are clearly designed to improve the ability of pharmacists to function effectively at the state level of our public health system. Specifically, Standard 12 of the new Accreditation Standards and Guidelines that will become effective in July 2007 states that the professional pharmacist competencies that must be achieved by graduates through the professional degree program curriculum are the ability to:

Promote health improvement, wellness, and disease prevention in cooperation with patients, communities, at-risk populations, and other members of an interprofessional team of health care providers. . . .

In this regard, the college or school must ensure that graduates are competent to: . . .

promote the availability of effective health and disease prevention services and health policy through the ability to apply population-specific data, quality improvement strategies, informatics, and research processes to identify and solve public health problems and to help develop health policy.[9]

Increasing the participation of pharmacists in all levels of the public health system is fundamental to achieving substantial improvement in the health status of our population as well as to achieving full preparedness to respond to any type of mass casualty event. Pharmacy education is addressing this important goal directly through changes to its self-governing processes of peer-review and accreditation. Increasing the participation of highly trained pharmacy professionals at the state level of public health practice must be one of the most important goals for the future of our public's health.

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