POLICY ARTICLE

Epidemiology in Public Health in the Era of Health Care Reform

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In addition to their basic responsibilities, many public health agencies at the State and local levels have had to assume the responsibility of serving as the safety net to meet the basic medical and preventive health care needs of people without access to other direct medical services. When they were not serving directly in this capacity, State and local health departments had to compete with other public agencies charged with this responsibility for limited resources.

The Federal role in public health was transformed with the passage of the Social Security Act in 1935 and the authorization for the Federal Government to make grants to support State public health agencies. The early emphasis in Federal grants was in the control of tuberculosis and venereal disease and in grants for maternal and child health, including services for crippled children. These programs grew slowly after World War II.

In the 1960s there was a dramatic shift in the role of the Federal Government in dealing with domestic social problems from civil rights and poverty to environmental health, mental health, health care for the poor, health professions education, and biomedical research. In addition to the Civil Rights Act, Medicare, and Medicaid, new programs were created and old ones expanded. There were numerous new grant-in-aid programs, some going to State and local governments, some to universities, some to individual investigators, and some to community-based nonprofit organizations.

In the late 1960s, an effort was made to balance broad-based support of public health and the need to meet high priority national needs through categorical Federal grants. The success of this effort, implemented through the Comprehensive Health Planning Act of 1967, was short-lived as more and more emphasis was placed on categorical grants.

With the advent of the HIV-AIDS epidemic, the emphasis shifted again with the great bulk of funding increases in the 1980s allocated to HIV-AIDS and substance abuse programs by the Federal Government. While many other categorical programs continued, they received only modest increases, if any.

With the President's health care reform plan (the Health Security Act), the need for many categorical programs that fund direct personal medical services, such as maternal and child health block grants, substance abuse and mental health services block grants, Ryan White HIV-AIDS care grants, breast and cervical cancer screening, immunization, community health centers, and migrant health centers will be redefined as services previously funded by Federal grants that will be paid for by health plans. In some cases, the payment by health plans will cover fully some services, such as immunizations, while, for others (HIV-AIDS), only around half of the services currently funded will be covered. These programs will continue to receive direct Federal support.

The Health Security Act not only provides universal health insurance with comprehensive benefits, it also provides additional support for the current safety net programs and capacity expansion to assure access to care for medically underserved populations. The Health Security Act also provides funding to strengthen and expand core public health activities at the State and local level.

The public health role can return to its primary purpose in protecting and promoting the public health through population-based programs. The core functions of public health — assessment, assurance, and policy development — as described in the 1988 Institute of Medicine (IOM) report, "The Future of Public Health," will again become critical. In each of these areas, epidemiology plays a key role.

The authors of the IOM report found that the infrastructure to support epidemiology at the State and local levels is limited. Many States lack the capacity to assure protection of the public's health. They lack the trained people to coordinate collection of data at the local and State level, and they lack the capacity to critically analyze data to identify problems and set priorities. As health care reform takes shape, it will be essential to reestablish this infrastructure so that epidemiology can play this critical role.

Because of the multiple Federal categorical programs that do not support core public health functions, it has been difficult to examine the interrelationships among many public health problems. This limits the ability of States to look critically at information in an integrated fashion or across program lines. In Georgia, for example, zip codes with the highest STD rates also have the highest rates of AIDS cases and tuberculosis cases. These are often the same people. There is a need to look at this categorical epidemiology across program lines to develop the most effective ways to reach those at risk.

The assessment and surveillance capacity that identifies problems, provides data to assist in decisions about appropriate interventions, and monitors progress is a function of epidemiology. According to the IOM, "Epidemiology has long been considered the essential science of public health, and a strong assessment and surveillance system based on epidemiologic principles is a fundamental part of a technically competent public health activity."

Whether fighting the old diseases such as tuberculosis and cholera or newer ones such as Hanta virus, Lyme disease, or antimicrobial resistant infection, public health's primary tool is epidemiology. The recent outbreak of Hanta virus infection in the Southwest illustrates the importance of linking clinical observations, epidemiology, and laboratory science to solve a major threat to public health.

The ability of public health agencies to identify health problems, decide on appropriate interventions, and monitor progress are all dependent on sound epidemiologic data. The traditional assessment and surveillance functions of public health must be strengthened, and they must be linked to other data sources for evaluating the quality of care in health services. Policy makers, alliance plan managers, physicians, and consumers need information to evaluate plans and providers and to hold them accountable for the health of a population that they serve.

Policy development is also dependent on the information and analysis provided by epidemiologic studies. It is essential to develop the capacity to translate epidemiologic information into action plans and policies at the local, State, and Federal levels. These data are needed to inform policy decisions, to develop programs, to allocate resources, to inform legislative decisions, and to educate policy makers about issues of concern.

A well-functioning epidemiology unit should be the cornerstone — the assurance program in public health — to identify areas where programs are lacking and to evaluate the effectiveness of policies and programs. Also its analyses should indicate areas where programs are not meeting stated objectives, identify inequalities in needs and services, and basically be the foundation of quality control within the health department.

Health departments must also monitor and evaluate the performance of health plans and alliances to assure that public health objectives are achieved, that all Americans have access to services, and that those services meet the established standards. With the emergence of health care reform, clearly there is a need to link traditional surveillance activities with other indicators in order to evaluate the impact of health services on individuals and the population at large. Health plans under the Health Security Act will have incentives to achieve public health objectives, such as immunization, and their success in this needs to be carefully assessed. Public health and personal health care systems need to work closely together to identify needs and devise effective strategies for intervention.

For example, analyzing the data on STD morbidity, linked to Medicaid data on reimbursement for sequelae of STD, can help to define the magnitude and cost of STDs at the State and local levels. Using this approach to define the current public expenditure for complications of STD and using the epidemiology and surveillance data to estimate cost savings of STD screening and prevention activities can lead to the development of sound public health practices. In some areas, STDs will be a major problem, in other areas they will be a lower priority.

Epidemiology is key to public health in the future. It will be important to ensure that epidemiology can link across program lines and interact with all programs to ensure that the assessment, assurance, and policy functions can be carried out. Links are needed to chronic disease programs and environmental health as well as infectious disease control and STD-AIDS prevention. Links are needed to vital records so that information can be cross-referenced to maximize analytic potential. Links are needed to enrollment data, encounter data, outcomes data, and patient survey data to permit assessment of performance in relationship to health outcomes.

During recent weeks, the Health Security Act submitted to the Congress by the President has been discussed extensively with Congress, and detailed descrip-

tions have appeared in the media. The plan boils down to these basic purposes:

1. Security — guaranteeing that all Americans will be insured with a comprehensive benefit package and including clinical preventive services and prescription drugs and long-term care programs;
2. Saving — controlling the growth of health care costs;
3. Simplicity — reducing the flood of paperwork in the system;
4. Choice — expanding consumer choice of plans and providers;
5. Quality — emphasizing continuous quality improvement and performance evaluation;
6. Responsibility — all in the United States will contribute our fair share.

The plan contains a major public health initiative that includes programs that strengthen both the public health and the personal health care systems; for example, prevention research at the National Institutes of Health, programs designed to assure access to the underserved, and plans to strengthen population-based public health programs.

While much of the attention has focused on the reform of the personal health care system, equally important is the task of what some of us would call, "reinventing public health," in order to achieve prevention objectives. The public health infrastructure at the State and local level must be strengthened in coordination and collaboration with the personal health care system. If the goals of an increase in the healthy life span for all Americans and increased reduction in the health disparities of socioeconomically disadvantaged groups are to be achieved at an affordable cost, reform of the personal health care system must be paralleled by reinvention of the public health system.

Whether historical advances against infectious diseases or contemporary gains against heart disease which have been dramatic in the last 20 years are assessed, the greatest improvements in health status have been derived from public health approaches, not from the increased expenditures for medical care. In 1982, a study by the Institute of Medicine stated that only 10 percent of premature deaths among Americans could have been avoided through improvements in access to medical treatment. Little has changed since 1982 to alter that judgment.

The IOM report attributed 20 percent of premature mortality to environmental factors. Most importantly, the report went on to state that another 50 percent of premature deaths could have been avoided by changes in individual behaviors such as tobacco use, sexual activity, eating habits, sedentary life style, use of alcohol and other drugs, violent and abusive actions, and other risk taking that leads to injury. These behaviors, which tend to be blamed on the individual, occur within the context of a social environment. Behaviors that put people at greater risk such as cigarette smoking, heavy drinking, and illicit drug use are more likely in communities where poverty rates are high, housing is inadequate, educational services are inadequate, social support services are inadequate, and jobs are not available. Unhealthy behaviors don't occur in isolation.

As universal access to personal medical care is assured with health care reform, there are several things that must be done to strengthen population-based approaches to achieve public health goals. First, it is necessary to strengthen public health activities that support the personal medical care system and the public health needs of the entire population — things like data, health services, biomedical and behavioral sciences research, and changes in the work force.

Reinventing public health means investing in epidemiology, consolidating currently fragmented public health data systems, and integrating these systems with a regional and national data network that can serve the needs of consumers, practitioners at the local level, health plans, and health alliances, as well as the government agencies responsible for protecting the public health.

The second essential element in the Health Security Act is the Access Initiative that is designed to assure access to personal medical care for those who have been medically underserved in rural and urban areas. The Access Initiative includes continuation and strengthening of safety net programs (for example, community health centers), expansion of the National Health Service Corps, a new capacity expansion program, a new adolescent health initiative, expansion of substance and mental health services, and strengthening and expansion of the Indian Health Service.

Finally, the Health Security Act calls for a major expansion of Federal support for core public health functions at the State and local levels and support for local initiatives designed to meet public health programs of regional or national significance.

Health care reform poses a great challenge for public health. To assure that the goals of health care reform are met, it is essential that both the present health care system and the public health system be reinvented. This can be accomplished only if this reform includes a major public health initiative, as well as reform in the planning and delivery of personal medical care.