Prevention as Policy

EDWARD N. BRANDT, Jr., MD, PhD

THE RELATIONSHIP between epidemiology and health policy development has always existed and has always been recognized as crucial for the policymaker, although it may not be as prominent as some other relationships.

The noise level is so high these days concerning the costs of care and the fiscal restraints on Federal health programs—certainly important issues—that sometimes we may not hear some of the clear, substantive messages coming from the statistical or research communities. But those messages usually are quite significant for policymakers and for the general public. An important illustration of this is the shift toward prevention as a fundamental concept in national health policy. That shift was dictated to a great extent by the buildup of certain epidemiologic data. In addition, we must rely on a continuous flow of such data in order to know how effective our prevention policy really is: Where are we being successful? Where are we having no success? And where do we need additional resources?

Childhood Immunization

An excellent example of the relationship between epidemiologic data and the development of health policy is childhood immunization—one of the great public health achievements in this country. Not only has immunization reduced the incidence of childhood diseases, but it has also reduced the chances of those diseases recurring and regenerating.

When the immunization program began in 1977, we had a "deficit" of some 25 million children who had not been reached. To overcome that deficit, the nation has set a number of specific goals of coverage to be achieved by the end of this decade:

- 90 percent of all children under the age of 2 with complete, basic series of vaccinations,
- 95 percent of all school-age children fully immunized,
- fewer than 1,000 reported cases a year each of mumps, rubella, and pertussis,

Dr. Brandt is Assistant Secretary for Health, Department of Health and Human Services. This paper is adapted from his address at the 55th annual meeting of the American Epidemiological Society in Kansas City, Mo., April 1, 1982.

Tearsheet requests to the Office of Public Affairs, Rm. 638 E, HHH Bldg., Washington, D.C. 20201.

• fewer than 500 reported cases a year of nonindigenous strains of measles,
• fewer than 50 reported cases a year each of diphtheria and tetanus, and
• fewer than 10 cases a year each of congenital rubella and poliomyelitis.

Thus far, we have made great strides toward reaching these important goals. With respect to measles, a total of only 3,032 cases were reported in 1981—a 77 percent decline from the total at the end of December 1980. Evidence now indicates that the number of reported cases of indigenous measles may be reduced to zero by the end of 1982.

In the course of this program, we found and immunized more than 20 million of the estimated 25 million children who had not yet been protected. Also, while the number of surviving newborns has risen slightly each year—currently about 3.6 million a year—we do not see a sharp increase in the national birth rate in the foreseeable future. I think we can keep pace with the demand for protecting new generations of children.

Of course, we could not have achieved this historic accomplishment for children without the commitment and professional dedication of thousands of public officials in State and local governments and many more thousands of concerned parents and educators working through various voluntary and professional associations at the national and local levels.

An estimated 50 million doses of vaccines are being administered to children each year. About half of these doses are given by public agencies—clinics or schools—and the other half are given by physicians or nurses in private practice. Although we are proud of this accomplishment, we cannot be complacent. We have made substantial progress, but the remaining 4 million or so youngsters who have not yet been reached are the most difficult to reach. They are "alive" in our statistical data bank, but that is almost all we know of them. If we knew precisely who they were, they would have been inoculated by now.

Another uncertainty is what the cost of vaccines will be in the coming year. Like everything else, they probably will go up, but we are not sure by how much. However, Secretary Schweiker, in addressing our commitment to maintain the momentum of the immunization program, stated that if at any time a lack of funds may jeopardize the effectiveness of the program he would not hesitate to go to the President and the Congress for additional money. And in fact the Secretary did so in May.

STDs

I have dwelt on the immunization program not only because it is important in itself, but also because it reveals the interplay among data collection, policy development, and budget planning. And we are about to replicate this whole sequence of events on another issue of growing, major significance for our society—the rise in the incidence of sexually transmitted diseases (STDs).

Hippocrates wrote, nearly 2,300 years ago, that "Changes are chiefly responsible for diseases, especially the great changes, the violent alterations both in seasons and in other things." We do not know just what "other things" he had in mind, but in our minds it is clear that "great changes" in America's social ethos in the past two decades are probably at the root of the current epidemic of sexually transmitted diseases.

The STD data coming in form a truly alarming picture. Despite a leveling off of the incidence of gonorrhea, we still have a total annual caseload of 2.5 million. Added to this figure are 3 million cases of trichomoniasis, 2.5 million cases of nongonococcal urethritis, half a million new cases each year of genital herpes, some 80,000 cases of syphilis, and a rising caseload of hepatitis B, particularly among homosexual men. The STDs wreak extraordinary human havoc, causing sterility and pelvic inflammatory disease among women and visiting the newborn with pneumonia, birth defects, mental retardation, and death.

The policy implications are clear. We know that the availability of vaccines made the childhood immunization program possible. Therefore, we must support research aimed at producing effective vaccines, antibiotics, pharmaceuticals, and new diagnostic agents for STDs. We also need to focus on the more widespread diseases to reduce the total universe of victims to a manageable size. Finally, we need to set our goals for the next few years. Specifically, how are we going to address the problems surrounding each disease condition and its victims? What will be our program objectives? What is our time frame?

Need for Hard Data

In the publication, "Promoting Health, Preventing Disease: Objectives for the Nation," we sought to lay out such goals. These goals cover not only improved health status—reduction in the incidence and outcomes of various diseases—but also enhanced awareness by the public as well as professionals, improved surveillance and evaluation systems, and improved services and protection. Some 2,000 experts from across the broad spectrum of public health and social service profes-

sions helped to pull together the information and the goals pertinent not only to immunization and the STDs but also to 13 other areas of public health concern, including alcoholism, nutrition, maternal and child health, and drug abuse.

In the examples I have cited thus far, the epidemiologic data are reasonably plentiful. Since the process of collecting and analyzing those data is time tested, we can get on with drawing inferences and conclusions leading to the establishment of administrative and budget policies. And there are other examples of available data drawn from populations with a narrower base but with as much or greater depth. One such example is the landmark Framingham study which is yielding priceless longitudinal data on diseases of the cardiovascular system.

We are not so fortunate, however, with regard to information on the health status of certain large population groups and certain major diseases and disabling conditions within American society. For example, the United States now has the world's fifth largest Hispanic population, exceeded only by Mexico, Spain, Argentina, and Colombia. Yet, we have an inadequate body of data on the health status of our Hispanic citizens.

The Hispanic Health and Nutrition Examination Survey, conducted by the National Center for Health Statistics, should close much of that gap in the data. This survey is closely modeled on the now familiar national HANES survey. The pilot study was completed in El Paso, Tex., in mid-March 1982. A "dress rehearsal" was undertaken in mid-June, and the main survey began in July. By December 1984, we expect to have examined 12,000 Hispanic Americans between the ages of 6 months and 74 years. The results should give us, for the first time, the data base we need concerning health status, access to care, health behaviors, and incidence and prevalence rates for various diseases and disabling conditions.

As a result of this survey, I see the health community as becoming much more effective in improving the health status of Hispanics. We will be able to provide better diagnostic and treatment services and more pertinent information for the development of preventive medicine strategies for Hispanic individuals and families.

As I mentioned before, we need more and better information not only about certain population groups but also about certain health problems. A project that responds to that need, the Epidemiologic Catchment Area Program, is now being conducted by the National Institute of Mental Health (NIMH). This project is our first attempt to gather the prevalence and incidence rates of mental health disorders as they are classified in the psychiatric manual and diagnosed and treated in clinical practice. This project should yield the framework—as well as the actual data—for clarifying the epidemiology of mental health, much as has been done with most aspects of physical health.

Although the Epidemiologic Catchment Area Program was started in 1978, it is only now beginning to produce hard data. By the time the first phase is completed in 1984, this project will have gathered information from some 17,500 people in 5 metropolitan areas—New Haven, Baltimore, St. Louis, Durham, and Los Angeles. While the project is concentrated on the epidemiology of mental health disorders across a broad spectrum of the population, the National Institutes of Health have augmented the survey to obtain a larger sample of elderly persons in those metropolitan areas. The aging, of course, are important not only for today's planning for public health policy but for the decades ahead as well. However, at present we do not have the kinds of data that are essential for intelligent public health planning for this segment of the population, hence the importance of the current surveys.

The philosopher Rousseau said that "Hygiene is less a science than a virtue." And I suspect that in the public's mind the notion of prevention may also be more familiar as a homely virtue than as a sophisticated science. Most people know that an adequate diet, a good night's sleep, and a reasonable amount of daily exercise will contribute to their overall sense of well-being. But life is more complicated than that. People have to contend with contagious diseases, environmental insults, occupational risks, genetically transmitted conditions, and the overwhelming pressures of contemporary social life. They need a whole array of coping skills that draw less on virtuous good intentions and more on hard science.

Satisfying this need for hard data may be the major challenge to the discipline of epidemiology during the remaining years of this century. We cannot afford to coast much longer on the things we do know. We have a great need to gather, in quantity and in depth, the information that we still must know if we are to help people cope with threats to their mental and physical health.

The union of epidemiology with the concept of prevention is clearly a landmark example of how prevalence and incidence data may contribute to fundamental changes in Federal health policy. But the example is far from complete. It lacks the firm base of reliable, longitudinal data that can be acquired only with the interest and knowledge of professionals in the science of epidemiology.