Assessing the Country's Health in a Time of Change

TO DIAGNOSE the current health situation in the United States and to find not only a general prescription but one for health statistics in particular, nearly 350 representatives of the national public health community met in Washington, D.C., June 20–24, 1966. The occasion was the 11th biennial national meeting of the Public Health Conference on Records and Statistics, a program of the National Center for Health Statistics, Public Health Service.

Between the biennial meetings, the program maintains study groups on current issues in vital and health statistics. The National Center also conducts institutes in vital and health statistics; provides consultation, advice, and training; maintains continuing contacts with fellow health workers; and compiles, analyzes, and publishes national vital and health statistics.

Diagnosis

The diagnosis, as expressed by Deputy Surgeon General Leo J. Gehrig, Public Health Service, in his keynote address, was that "The entire complex of public health and medicine is in a period of explosive growth and dynamic change." A similar judgment was voiced repeatedly during the conference. At the final session, for example, Dr. Philip M. Hauser of the University of Chicago, in a discussion on population policy, analyzed the burgeoning increase in population as a severe health problem which affects virtually all parts of the world, the very life and relationships of nations, and, domestically, the well-being of the United States.

In Hauser's view, family planning is only one aspect of population policy and perhaps not the most important. "Efforts to decrease the birth rate show no examples of a mass population which is illiterate or poverty stricken that has succeeded in decreasing a birth rate that was not already in decline." Such populations are found in marginal groups and areas in the United States. In effect, Hauser concluded that family planning measures must be preceded by or accompanied by other powerful efforts if the social malady of overpopulation is not to be accompanied by the personal malady of ill health.

Gehrig reminded the conferees that Medicare had not created the difficulties in providing health services now facing the country. The Hill-Burton program, for example, was initiated 20 years ago to relieve medical facility shortages. In his judgment, Medicare will not compound the current problems except in a few localities. Among these problems, he mentioned shortages of manpower and facilities, the need to upgrade the quality of care, to assure equal access to care, and to improve health planning. Medicare "has brought these longstanding problems into sharp focus. It is hastening their resolution."

General Prescription

A long-existing program for assuring that hospitals maintain minimum standards commensurate with good service was described by Dr. John D. Porterfield, director, Joint Com-

This report was prepared by Dr. John Storck of the National Center for Health Statistics, Public Health Service.

mission on Accreditation of Hospitals. Nursing homes and domiciliary homes were added to the accreditation program in 1966. Rehabilitation centers and group practice arrangements may soon be added.

Many detailed practices in handling patients are under constructive scrutiny. Thus, Gehrig observed:

> We and our allies in the American Hospital Association and the American Medical Association are urging the local medical community to encourage interhospital cooperation on admission policies, orderly scheduling of admissions, establishment of clinical priorities, and careful utilization review.

Gehrig also reported that current activities to modernize existing medical facilities and build new ones, and to expand medical schools and establish new ones, will be accelerated and extended. More nurses and other health personnel will be recruited and trained.

Advances are also being made in automating health situations. Dr. F. Ellis Kelsey, Special Assistant to the Surgeon General for Information, described a number of technically feasible information systems ranging from "a total information bank, containing the vital statistics and previous medical history of all United States residents, in full detail" to more restricted systems like the National Library of Medicine's arrangements for cataloging current medical literature, the Food and Drug Administration's program for reporting adverse drug reactions, and ways of meeting the information needs of hospitals.

Kelsey described the Kaiser-Permanente (California) largely automated system for economizing on expensive professional time while also speeding up the giving of comprehensive medical examinations. An automatic system manned by technicians obtains and records the standard elements of the examination. A built-in decision process automatically indicates which additional examinations seem indicated and whether any findings may require immediate attention. The examining physician is sent a summary report. His initial interviews average only 15 minutes per patient, and no followup is needed for half of the patients.

M. Allen Pond, Assistant Surgeon General for Plans, Public Health Service, presented two further elements for improving the general health effort: "We can help redefine and rearrange and improve the contributions made by the many health occupations," and "we can plan our health efforts as a whole more effectively." First, analysis of the procedures used in providing health services allows the transfer of many functions now being performed by highly skilled personnel to others with less training. This can increase the number of health workers and also lead to natural career ladder sequences that encourage workers to remain in the health field. Costs also are decreased without loss of effectiveness.

Second, Pond described the cost-effectiveness techniques that are now rapidly coming to the fore in Federal planning. These techniques require that each program proposal be organized in terms of a graded series of efforts, with each level of possibilities accompanied by a statement of costs and estimated benefits. Planners can consider these alternatives against each other and against similarly scaled possibilities framed by other programs. On this basis, decision-making need not be carried on in a vacuum. Cost-effectiveness procedures can be applied at State and local levels and in fact anywhere, if adequate data are available.

Prescription for Health Statistics

The general prescription for health calls for more and better services everywhere. At a workshop on health manpower statistics, the participants assessed the task of gathering health manpower data for program planning and budgeting and found that present efforts are inadequate. To meet the need, nomenclature and methods of study should be standardized, while more and better information should be collected on the location of services, functions performed, qualifications required, and demands.

The Deputy Surgeon General had stated that the enlarged and rapidly changing demands of today challenge health statisticians and the keepers of vital records because "Yours are the skills that can tell us where we stand, where the needs are, where we are progressing, where we need to do better." Hauser also had noted that population policy must include expanding levels of population statistics and research: "What we know today will seem primitive in a decade."

In summing up the conference, Dr. Forrest

E. Linder, Director of the National Center for Health Statistics, stated:

> Instead of trying to tell you what is to come in health statistics, let me ask, What is the meaning back of all these discussions? Let's look at the symptoms, and try to discover the underlying cause.

In Linder's judgment, the basic factor underlying the earnest concentration of the week's discussions was to be found in the fact that "The era of planning in public health is now with us." The kind of planning needed will demand much more hard data than has ever been required before. As a consequence, he observed, people who can supply the information needed for planning will have a chance to move forward in public health.

The audience was reminded that planning requires more than analysis, since the planner must be able to look ahead and judge what is coming. The health statistician, Linder concluded, will have to think in terms of models, of simulation. These and the computer will be, for the statistician, what the laboratory has been for some other sciences. The statistician must learn to pit himself against the data in the computer, and develop a kind of scenario of the future—a broad prognosis of things to come. He can then state his hypothesis to the computer and it will answer him with a yes or no before the course of events actually comes about. The science, or art, will depend on asking the right questions; and only those who are close to the facts are likely to be able to frame the crucial inquiries.

Recurring Themes

None of the recurring themes of the conference that led Linder to conclude that the new era in health will have great possibilities for the health statistician was dealt with exhaustively. However, these themes received more than casual mention; most of them were brought up several times in different settings, occasionally as solutions or as obstacles to solution, but more often as characterizing the emerging situation. Most of the themes are complexly interrelated in ways that cannot be adequately described in this summary—to summarize them would be like trying to convey in words those aspects of a novel or a symphony that depend on direct experience.

Comprehensive health planning. No single new possibility or emerging actuality was mentioned more frequently than Senate bill 3008 (S. 3008), which has been described as the "partnership-for-health bill." Many of the conferees were aware of the proposal in some degree before they came to the conference.

The Deputy Surgeon General, in his keynote address, emphasized the "fundamental change in Federal-State-local relations in the health sphere" that would be initiated if the bill were enacted. At a later meeting, Dr. Franklin D. Yoder, director of public health, Illinois Department of Public Health, and official representative of the Association of State and Territorial Health Officers at the conference, speaking of the interest shown in the bill, observed that "This is V-day for those in State and local health work."

S. 3008 provides formula grant funds for general or comprehensive health purposes, as distinguished from the categorical grants for special health programs so characteristic of recent years. To participate in these grants, each State must designate a responsible health planning agency and develop an advisory group representing State and local agencies, nongovernmental organizations and groups concerned with health, and consumers of health services.

As Gehrig had noted, while the country's health programs must be developed in terms of national needs, these programs should also be flexible enough to meet specific community requirements. At least 70 percent of the funds available under S. 3008 must be used in local communities under conditions laid down by the State health planning body.

Another provision of the bill allows assignments of personnel for periods up to 2 years, in either direction, between States and the Department of Health, Education, and Welfare—with full protection of salaries and benefits. Training activities would also be strengthened.

S. 3008 is of special interest to State vital statistics offices. These offices are not eligible for categorical grants, because they provide general services underpinning many specific public health efforts without conducting specific health programs themselves. The bill "declares that fulfillment of our national purpose depends on promoting and assuring the highest level of

health attainable for every person, in an environment which contributes to healthful individual and family living." To attain this purpose, statistical services would be required of a magnitude and quality never previously attained. They would involve, as phrased in the bill, "the marshaling of all health resources—national, State, and local."

Gehrig cited Reorganization Plan Number 3 of 1966, authorizing reorganization of the Public Health Service, as providing the same kind of flexibility in Federal health administration as the partnership-for-health bill aims at generally. The plan, which placed authority for determining the organization of the Service in the hands of the Secretary of DHEW, became effective on June 25, the day following the close of the conference.

Implications of SSA amendments for statistics. Great interest was evinced, both substantively and statistically in titles XVIII (Medicare) and XIX (Medicaid) of the Social Security Act. The Social Security Administration is mainly responsible for administration of the Medicare program, while the Welfare Administration is principally in charge of the Medicaid program. Title XVIII is countrywide in coverage, but limited to persons aged 65 years and over. It is composed of two parts: a general hospital-services payment program financed by social security funds, and a voluntary medical services program financed by payments from those who elect to use it. Title XIX is a welfare program for the medically indigent of all ages, as defined by individual States, with a good part of the costs defrayed federally. There could be more than 50 distinct programs under title XIX.

As a Welfare Administration representative put it, titles XVIII and XIX form "a relatively unstable compound . . . [and] a cause of insomnia." The question arose whether any one agency would be responsible for coordinating all medical care data, including data from the Veterans Administration, the heart disease, cancer, and stroke program, and from private sources, as well as Medicare and Medicaid. Comparisons are bound to be demanded since, in the words of a discussant, "No domestic issue will receive more attention than this problem of financing health care." In his judgment, "The statistician for the first time is probably the most important person in the health care industry."

Dr. Kerr L. White, director of the division of medical care and hospitals, School of Hygiene and Public Health, Johns Hopkins University, offered an analysis of current needs in medical care statistics and the health services system. He found the expenditures here grossly unbalanced; with more than $40 billion spent annually, only about $20 million (1/20th of 1 percent) is being spent on research and obtaining information related to the operation of the health services system. He argued that the personal health system, which includes virtually all health services other than environmental ones, will require statistics on individual persons, institutions, and communities for administration, planning, and policymaking. Only health departments are in a position to measure all aspects of the personal health system.

Unification of vital and health statistics. White also proposed that the terms "vital statistics" and "public health statistics" be abandoned:

> I suggest that every health department establish a new unit, bureau, division, or department of health statistics. Such a unit would be responsible for the collection and analysis of all statistics relating to the health, health problems, and health services of the community it serves. . . . I suggest that each health statistics unit establish a continuing relationship with an appropriate university department in its region.

White suggested further that data concerning death, for example, be related to diagnoses during medical care no less than to underlying cause, a concept which "may be obsolete." In any event, vital statistics should be viewed as part of health statistics.

This idea was independently proffered a number of times. Dr. Samuel M. Wishik, Graduate School of Public Health, University of Pittsburgh, had noted at the first general session that the initial concentration on mortality as an index of health status had shifted to morbidity, and remarked that interest is now also in minor morbidity and vaguer collections of symptoms, and even in prodromal situations—"the near misses"—where risk increases even though symptoms or morbidity do not invariably result. In such a situation it may not always be wise to separate entirely the living from the dead,

or even those who are living less adequately from the more sick. The need is to study what Wishik called the entire "gradient." Here, as elsewhere, Wishik saw the need for new statistical techniques.

Later in the conference, Dr. George A. Silver, Deputy Assistant Secretary for Health and Scientific Affairs, DHEW, discussed the current orientation of interest toward the sociological, economic, and political dimensions of health, which often extend far beyond, or go into far greater detail than, the socioeconomic characteristics of traditional vital statistics and demography. He characterized segregation as being "a major killer."

In discussing quality of population as distinct from quantity, Hauser observed that "quality in this generation is a function of social inheritance." He went on to illustrate his point in terms of the educational system. Whereas education in the past had produced unity from diversity in the United States, presently it is producing a stratified society with its deepening disparities in the health status of population groups. Thoughts of this kind would not have been considered relevant to a health-oriented or a vital statistics-oriented group only a few years ago.

One obvious consequence of the change in awareness of relationships between vital and health statistics is a growing interest in marriage and divorce statistics. To date, however, the problems of family formation and dissolution have health dimensions which remain relatively unexploited. The conference held workshops on marriage and divorce registration to consider ways of extending the registration areas for these vital events. At present, the marriage registration area includes 38 States and the divorce registration area 22 States.

Practically every difficult area in vital statistics—the perinatal period, accidents during childhood, the period of family formation, the "multiple cause" period of later life—are strongly "infected" by adverse demographic-sociological-economic components which probably will yield their secrets only if two boundaries are breached: the boundary between vital and health statistics and the boundary between these two together and social statistics generally. A greater interest in medical care statistics might stimulate their development in ways tending toward bridging these chasms.

Statistics for areas lying within or crossing political boundaries. Much interest was shown in the plan to use the block face—the side of a city block—as the fundamental unit of tabulation in the 1970 census for all areas covered by a city postal delivery system. The computer tapes will enable aggregation of these units in almost any desired way, such as by health or school districts, police precincts, or the two sides of a street.

The publication by NCHS of 1963 mortality data for more than 200 Standard Metropolitan Statistical Areas was described as a major landmark for urban public health.

The bill, S. 3008, was pointed to as a potentially powerful means of improving urban health statistics. In another discussion, it was suggested that larger geographic areas develop their own health statistics according to a standard system.

Need for closer relationships between planners and statisticians. In a workshop discussion, it was noted that a New York City health survey during its 3 years of operation had not only provided data for health agencies, but for a number of other city activities, including the city planning board. Demographic information produced by the survey was generally useful in measuring intercensal population mobility. The workshop participants observed that local surveys were needed as well as a national survey, because local rates are affected by economic, social, and geographic differences, and in order to provide rapid feedback and flexibility. The Hawaii Health Survey had led to the addition of several State programs.

A consequence, therefore, of a planning-oriented health statistics program would be the need for closer relations between planners and statisticians. Linder had noted that the health statistician will not get far by talking only to himself or his peers: he must find some way of communicating with persons in higher levels. But it is not easy to apply the conclusions of statistics without close collaboration, since the activities of planning and statistical analysis differ in that planners must concern themselves

with what is feasible, whereas statisticians try to express quantitatively the degree of variation that accompanies the measurement of most phenomena.

Concern with data processing potentials. In addition to Kelsey's review of recent automation advances in the health field (p. 822), the conference held workshops on automatic data processing (two sessions) and on record linkage.

The workshop on automatic data processing considered the experiences of a number of States and localities in computerizing health data, and decided that the following (among other things) were needed in "the rugged and exciting period ahead":

1. Centers for health statistics, using modern technology.
2. Increased technical consultation and training for States and localities.
3. Adequate Federal grant funds "for top-grade statistical services as essential to comprehensive health planning and services."
4. Formation of a specialized users group of health data processors to exchange information and experience.

The potentialities of record linkage have long been an interest of the conference. The rapidly increasing need, not limited to health matters, for associating information concerning specific persons or groups, such as families, and the ease with which data processing systems can now accomplish such associations, greatly heightens the current interest in record linkage. The workshop participants reviewed a number of situations where record linkage is or could be profitably used and considered ways of identifying records for linking them. For example, this might be accomplished by using the social security number or a number, which may be the social security number, assigned to every child at birth. Questions as to the confidentiality of records and the protection of personal rights were also discussed.

State centers for health statistics. Pond had suggested that geographic areas—States, cities, regions—could use the NCHS sampling frame and methodology to develop their own health statistics on a pattern comparable with other areas and with the national figures:

You have registration areas for births, deaths, marriages, divorces. Why not a health statistics area composed of jurisdictions that meet standards established by the National Center for Health Statistics?

A rather similar proposal received expression in Linder's analysis of the general significance of the conference. Referring to the fact that no State had as yet established a State center for health statistics, Linder stated that "The time has come for this idea." The participants at the workshop on automatic data processing had previously endorsed the idea of such centers, as noted previously. They thought that the centers might be organized on a State or regional basis, or both, and added the recommendation that the Association of State and Territorial Health Officers and NCHS "vigorously promote" their development. Linder had expressed a doubt whether NCHS should chart their structure.

Workshops

The conference included many hours of concentrated work in addition to the general sessions. Thirteen workshops on a dozen subjects were scheduled, including several which arose from study-group deliberations during the preceding biennium. In these workshops, as in countless extracurricular meetings and informally arranged contacts, much of the detailed work of the conference was accomplished. The American Association for Vital Records and Public Health Statistics, the organization for registration area officials, also held meetings before and during the conference. Most of the study-group topics for the next 2 years will emerge from all the activities of the conference, including the general sessions.

The following are summaries of activities of several workshops which were not reported previously.

Implementing the standard certificates. Revised standard certificates of birth, death, fetal death, marriage, and divorce, recommended for adoption by the registration areas on January 1, 1968, are now in final form, after many months of intensive study. NCHS can provide photographic negatives of the recommended forms, which the areas can adapt for printing according to their special needs.

Two workshops were focused on implementing use of the standard certificates of birth, death, and fetal death. Model handbooks for physicians, medicolegal personnel, funeral directors, and hospital personnel are in the final stages of preparation, for distribution in the spring of 1967. NCHS will provide areas with copies of the handbooks in quantity if they are following the model without changes.

The workshop participants agreed that articles about the certificates should appear in professional journals. Areas will initiate this activity, with assistance and advice from NCHS.

Since the current revisions constitute the most intensive effort ever undertaken to separate research items on the certificates from legal items, areas were urged to evaluate the meaning of their disclosure arrangements when revising their certificates, so that they might not unwittingly restrict access to important legal items.

Marriage and divorce registration. Two workshops were devoted to reviewing recent advances in registering marriages and divorces and considering ways to extend the marriage and divorce registration areas. Special efforts are needed here, because the local officiants, such as clergymen and clerks of court, may approach registration differently than registrars of births and deaths do, and different local organizations may have an interest in improving registration. The need for more research uses of marriage and divorce records, including uses in measuring differential health or demographic characteristics, was also mentioned.

Fertility studies. A workshop group surveyed the numerous studies for measuring fertility and family planning variables. In addition to the now classic studies, Minnesota's use of detachable, confidential medical supplements to its fetal death and birth certificates was described. Also brought up was an NCHS proposal for a biennial fertility survey, to start in 1968, which provides for longitudinal analysis of the reproductive experiences of married persons. A number of subjects for research were recommended, including (*a*) a measure to detect early changes in the fertility trend, (*b*) fuller development of marriage statistics, (*c*) more analysis of socioeconomic differentials, and (*d*) more data on the fertility of unmarried women, especially where illegitimacy rates are high.

Perinatal mortality statistics. The report and recommendations of a study group on improving fetal death registration were considered. The report listed the 1965 status of 11 study recommendations made in 1952. Participants at this workshop concluded that fetal death registration remains incomplete, although the requirement to register all products of conception increases the registration of products aged 20 or more weeks. An abbreviated document was suggested for deaths below a certain gestation age, and it was recommended that the phrase "first day, last menstrual period" be substituted for "weeks of gestation" on live birth and fetal death certificates. The study group had also recommended that NCHS conduct a large-scale study of perinatal mortality and fetal death registration in 1970.

The workshop group reviewed a number of studies. It was suggested that low birth weight alone is an inadequate determinant of maturity at birth and that a dual criterion of weight and gestation length would contribute materially to better knowledge of neonatal mortality and survival.

Research on vital statistics methods. This workshop group considered a number of studies evaluating the input or the output of the vital statistics system, data linkage studies, and methodological studies, chiefly as reported by a study group working in these areas. It was suggested that guidelines for research projects be developed, working papers prepared on areas needing research, and ways of establishing joint projects between health departments and universities be sought.

Details of Medicare and Medicaid statistics. Social Security Administration plans for gathering Medicare statistics under title XVIII were discussed in considerable detail in a general session and also in a workshop, while California's plans for processing Medicaid statistics under title XIX were considered in another workshop. These plans are too detailed for brief summarization; however, they are intended to permit judgments as to whether standards of care have been met.

Planning and conducting health surveys. The objectives of a survey should receive spe-

cific statement, for instance by preparing dummy tables, and usually should be closely adhered to after formulation. The concepts and definitions that are involved should be framed in relation to what is practical, and consideration should be given to producing results that are comparable with other data. Sample design may depend on whether the survey is a one-time or a continuous undertaking. Larger samples generally are required where levels of incidence or prevalence are desired—repeat-visit samples for trends over time. Planning is affected by resources, including not only funds but personnel, equipment available, and the survey devices that are used. A statistician should help in the planning, preferably from the start.

Careers in health statistics. Workshop participants discussed the significance of the staff exchange that would be facilitated by S. 3008, reviewed a survey of the country's curriculums in biostatistics, considered the American Association for Vital Records and Public Health Statistics 1964 survey of State positions in health statistics, and compared recruitment techniques in a number of settings. Adequate budget, staffing, and inservice training are the key components of good recruiting.

NOTE: A complete record of the conference proceedings will be published by the National Center for Health Statistics. A summary along different lines than the one presented here appeared in the July 1966 issue of *The Registrar and Statistician*, a monthly publication of NCHS.

Public Health Service Staff Appointments

Dr. Vernon J. Forney has been appointed regional health director of Public Health Service Region 5, headquartered in Chicago. He has been program consultant and technical assistant to dental activities and has assisted in implementation of area dental public health programs in the Denver regional office since 1962.

Dr. Forney, born in Valparaiso, Ind., received his D.D.S. degree from the Indiana University School of Dentistry and served his internship in the Public Health Service hospital in Ft. Worth, Tex. He is the first dental officer to serve as a regional health director in a Department of Health, Education, and Welfare regional office.

Dr. Forney has served with the Division of Indian Health in South Dakota, and as dental officer in Washington, D.C. He has had two tours of duty in Rio de Janeiro, where he was dental adviser to the International Cooperation Administration. In this position, he was assigned to the U.S. Operations Mission in Brazil for the development of dental resources, public health administration, occupational health, water supply system development, and consultation activities with educational institutions.

Dr. Forney is a member of the American Dental Association, American Association of Industrial Dentists, and American Association for the Advancement of Science.

Dr. Edward O'Rourke has been appointed assistant chief of the Public Health Service Bureau of Medical Services with special responsibilities for international operations, population dynamics, and legislative liaison. He will devote particular attention to Public Health Service activities with the Peace Corps, with surgical teams aiding civilians in South Vietnam, and with the economic opportunity program in Appalachia. He will also represent the Surgeon General for family planning programs of the Public Health Service.

Dr. O'Rourke, a native of Cambridge, Mass., is a graduate of Harvard College, Harvard Medical School, and Harvard School of Public Health. He interned at the U.S. Naval Hospitals in Seattle and Bremerton, Wash., in 1946–47, and was a medical officer aboard naval vessels from 1947–49. He was the health commissioner for the city of Cambridge from 1951 to 1954, when he was commissioned in the Public Health Service.

Dr. O'Rourke has spent 9 years on foreign assignments. For 7 years he was in Europe with the Division of Foreign Quarantine. He spent 2 years in Bangkok as chief of the Division of Public Health, U.S. Operations Mission to Thailand. From 1963–64 he was deputy director, Health Services, in the AID Office of Human Resources and Human Development, Washington, D.C.