

The first of two papers commissioned by the planning committee for CAFOR (the second Arden House Conference), this article will be distributed at registration time at the Annual Meeting. All members and Fellows are urged to read it and come prepared to discuss it at the opening General Session, Monday morning. This paper deals with projections of trends in public health over the next decade.

PUBLIC HEALTH IN THE UNITED STATES IN THE 1970's

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Introduction

IT is the purpose of this paper to examine the extent and characteristics of the health problems the United States will be facing in the 1970's and to suggest some alternative solutions to these problems. Hopefully, these views will provide a background from which the membership of the American Public Health Association can launch continuing discussions about the future roles the Association must play in maintaining and improving the health of our nation.

One of the dominant roles of the APHA will be to influence health policy and decision-making at national, state, and local health levels. These roles are too important to be left to chance. As Edward Bacon points out in his book "Design of Cities," "we are in danger of losing one of the most important concepts of mankind, that the future is what we make it." Our greatest challenge, therefore, is to control our own destiny; this should also be our greatest desire.

Perhaps we in the APHA are too timid in looking ahead only a decade.

Other groups are looking ahead a third of a century. In October, 1965, the American Academy of Arts and Science created a Commission on the Year 2000, composed of 30 distinguished scholars and scientists, to explore the hidden recesses of the future. Eight working groups are currently considering national problems, all of which have relevance to public health: (1) the adequacy of the governmental structure, (2) the changing nature of values and rights, (3) the intellectual institutions of a postindustrial society, (4) the life-cycle of the individual, (5) the international system, (6) the social consequences of the computer, (7) the problems of biomedical engineering, and (8) the future organization of science and technology. The group's first volume by Kahn and Wiener,¹ has the arresting title "The Year 2000—A Framework for Speculation on the Next Thirty-three Years." The combination of historical reviews and statistical technics employed by the authors could serve as patterns for study groups of the APHA as they approach their conference tasks of sketching in the details of public health in the 1970's.

As Bell² explains in his chapter entitled "The Year 2000—Trajectory of an Idea," there are four sources of change in our society: (1) technology (which has great implications in the biomedical sciences); (2) diffusion of existing goods and privileges in society, both tangible goods and social claims on the community; (3) the structural developments in society, especially the centralization of the American political system and the husbanding of "human" rather than financial capital, and (4) the relationship of the United States to the rest of the world, perhaps the most important change of all.

All of these sources of change have implications for the future role of health workers and for the success of efforts to improve social functioning of individuals and families in our communities. Health no longer is an end in itself—if it ever was—but a means for attaining optimum social well-being within the constraints of the physical, social, and biological environment in which man finds himself. Health can no longer be viewed out of context of the social and economic aspects of daily living. Health is not just "feeling good," but a broad concept that embraces the social, mental, and physical aspects of human well-being. It includes the cognitive, affective and action domains of human behavior, and it focuses on the individual, the family, and the community.³ Thus public health is not just a discrete collection of functions, but a comprehensive entity involving the total health of populations and their social-cultural groupings. In other words, health affects and is affected by a multitude of factors, wherever people live. In examining health problems and possible solutions, these other factors are equally important and demand simultaneous consideration.

Unfortunately, a mathematical approach to the analysis and solution of problems in the health field is not yet

feasible. The necessary facts and figures are not available; only bits and pieces are beginning to emerge. Program analyzers, systems analysts, and operational researchers are busily exploring the field, but the jig-saw puzzle has not yet taken form. We have no "gross national health product." Even the inputs are fragmentary and often unknown or unlisted. Unfortunately, no national health plan exists in the United States. As William Gorham, the former Assistant Secretary for Health, Education, and Welfare candidly stated, "When it comes to planning for the efficient allocation of national resources among the various competing social needs, the United States is an underdeveloped country."⁴

Continuing changes in government which will affect health and social service programs especially, can be expected in the next ten years. Additional policy determination and funding will come from the federal level. More interstate programs—e.g., air and water pollution, health services for the poor—will fall under central control. Federal planners will focus on the economic aspects of health programs. Consequently, funds for activities that do not show promise of prompt benefits will be difficult to obtain. Federal resources for medical research will be more stringently controlled. We may end up with a national "Science and Health Agency" that would dispense all money for scientific affairs and health. Because of its increasing dependence on federal funds, the total health industry will inevitably be affected. He who controls the purse strings will largely control policies and practices.

Thus, a greater share of the Gross National Product (6 per cent in 1966) will probably be allocated for health because of urgent unmet needs, both past and present. The cost and complexity of medical care are increasing; the demands of the people for more and bet-

ter health services are resounding "loud and clear" throughout the land.

Health Problems to Be Faced

Time and space do not permit description or documentation of the historical perspectives of public health programs in the first two-thirds of the twentieth century. Programs are changing so rapidly, especially in the last few years, that only the major items can be touched on. Therefore, advances in problem areas of health will be briefly described. Resources will be discussed. Goals will be set forth and the key issues—the organization and management of resources available for health programs—will be outlined. Many critical questions will have to remain unstated and unanswered, but hopefully, we can begin to look into the future of public health in the United States. About 80 per cent of the population by 1980 will be urbanites. It is in the urban areas, particularly among the poor, the disadvantaged, and the minority groups, that the health and social problems are so desperately interdependent. Nearly half of the population will live along the Eastern seaboard, the Great Lakes and the West Coast.

When discussing advances in the problem areas of health it would be logical, in thinking of the future, to talk about comprehensive community health rather than limiting our meaning to the public health concept of the past. Total community health includes mental and physical ailments, environmental hazards (or dimensions) of health and the social components of both problem areas.

Demographic variables such as age and sex distribution, concentration of population, geographic and cultural differences, varying socioeconomic status, influence each of the health problem areas. Projections can be made for many of these variables on both a national

and a local basis. Population estimates in the United States, for example, project 225-250 million people by 1980. Women will predominate over men by a ratio of 100:70. About one-half of the population will comprise those under 18 and over 65 years of age—largely unproductive members of society requiring costly education for the young and extensive care for the old. Life expectancy at birth will probably hover around 70 years for men with a five-year bonus for women. Life expectancy after 55 years of age will be relatively unchanged unless a break-through occurs in the causes and cure of heart diseases, cancer, and other prominent degenerative diseases.

It is against the background of such projections and the anticipated advances in the medical sciences that we should view changes in the health problem areas in the next decade.

Physical and Mental Disorders— Problem Areas

Administratively, physical and mental problem areas can be grouped under six broad headings with some unavoidable overlap. Such a grouping can prove useful as a program planning framework.⁵ Relative priorities of each of these categories vary with time and place, and other epidemiologic variables.

Acute Medical and Surgical Illnesses Requiring Hospital Care and Associated Institutional Services

The majority of medical dollars are spent for these human ailments.

Looking to the future, new and more effective antibiotics can be expected to develop. It is conceivable that appendicitis will become largely a medical rather than a surgical problem. More effective vaccines against acute respiratory diseases will be likely to emerge. Transplants of vital organs such as the heart, kidneys,

lungs, and liver will become commonplace once the immunological difficulties have been overcome.

Auxiliary machines to carry on the work of vital organs will be highly developed as a result of technological advances in biomedical engineering. Organ transplant surgery will markedly increase the cost of hospital care. The prolongation of life of disabled persons will probably overcrowd institutional facilities still more.

The sharp distinction between public preventive medicine and private clinical medicine, still present in many communities, hopefully will become blurred if all types of illnesses come under the umbrella of comprehensive health care. Even a country as rich as the United States should ask itself if it wishes to continue the exorbitant cost of medical and surgical care that arises from delay, neglect, and ignorance of preventive measures. Rich as we are, we cannot afford such waste.

Chronic Illnesses, Especially Among Older People: e.g., Heart Diseases, Cancer, Cerebrovascular Diseases, Arthritis, Diabetes

Because of unknown etiology of most of these ailments, efforts should be concentrated on research. Coronary artery disease stubbornly refuses to give up its etiological secrets; certainly it is more than a dietary dysfunction. The suspected causes of cancer seem to center on cell genetics, e.g., nucleic acid structure and function. New drugs are appearing in the treatment of arthritis and high blood pressure but, again, lack of knowledge of basic causes obstructs the search for cures. Undoubtedly, bronchitis, emphysema, and other chronic respiratory diseases will increasingly demand attention.

Rehabilitation will continue to advance as a modality of preventing progression of diseases and minimizing their ill effects. Biomedical engineering will

contribute new prostheses that will enable many of the severely disabled to stay out of bed, to get out of wheel chairs, to take care of their personal needs, and to be more productive. The medical, social, and vocational aspects of rehabilitation could be brought together more closely if the services of comprehensive care centers reach out into all segments of the community.

Each year a larger share of the health dollar goes for the care of the chronically ill. The number and percentage of older people in our population increase regularly. "Medicare" for older citizens will need to be extended in coverage and made more flexible. More money, manpower, and facilities are needed to keep these persons reasonably happy and healthy. Consequently, resources expended on research in geriatrics and rehabilitation are good investments for the future, that is, if society is now ready for an extension of people's productivity. In addition, we have to face the difficult question related to vital organ transplants among older persons: does artificial prolongation of life deny the individual the right and choice of time to die?

Mental Disorders, Including Illnesses, Retardation, Alcoholism, and Addictive Disorders

The social roots of mental disorders will command more attention in the future, both in diagnosis and treatment. Biomedical researchers offer the best hope of getting at the basic causes of malfunction of the nervous system, but their advances are likely to be slow. Community programs to care for the mentally ill and retarded are already breaking down some of the personal fears and prejudices against those afflicted. The shift will undoubtedly continue away from providing care in the institution into community facilities and private homes, especially for the elderly patients.

The changing roles of general and mental health administrators in the future should be viewed against the background of federal legislation passed in recent years.⁶ Bold new concepts, as most of the health workers now know, were set forth in these comprehensive laws and their influence will be felt for years to come. Congress in 1965-1967 openly recognized health as a right for all rather than a privilege for those who could afford it.

Psychiatrists, in general, have tended to concern themselves primarily with individual patients—those patients who had money to pay for prolonged care. With the development of community mental health programs and ambulatory care centers, services of high quality are being extended to people regardless of social and economic status. This trend should continue and extend in coverage in the future.

For financial and efficiency reasons, comprehensive care centers should house mental health and other specialty programs under the same roof. Such a move would benefit the affected families and assure the best use of scarce professional personnel. Mental health personnel took the lead in national health planning; they could do so again by joining forces with other specialists to provide total community health services.

Mental health has many techniques to offer to other organized health activities because methods to achieve motivated action were necessary from the beginning⁷ in this special field. In the past, general or nonmental health programs *gave* health to people without the need for much individual effort, e.g., water supplies, food protection, fluoridation, and mass immunizations. Today and in the future people will have to *earn* their health, e.g., personally stop their smoking, overeating, and overdrinking. The psychological and emotional aspects of physical disorders will require specific attention and change in

behavioral patterns if people hope to earn good health. However, individual action will probably not be enough to achieve results. Community sanctions may be necessary, e.g., differential tax incentives to change drinking habits from strong liquors to wines and beers, and absolute prohibition, as in Denmark, of drinking while driving; federal support to help diversify farms in the tobacco states; statutory restriction on the advertising and sale of cigarettes; price incentives to dairy and fat food industries to reduce saturated fats in their products.

Prevention of occurrence of mental illnesses presents many difficulties to designers of mental health programs.⁸ So few of these disorders, with our present knowledge, can really be prevented from occurring. This gives added reason to keep on working toward primary prevention in the years ahead. The social scientists are exploring this area with ingenious questionnaires and interview methods of evaluation. Studies by Gruenberg and associates⁹ on the "Social Breakdown Syndrome" are promising. If health is accepted as a unitary concept, some of these special mental health problems can be faced together with general ones, both conceptually and practically. For example, the joint teaching of mental and general health in schools of public health, medical, dental, and nursing schools, would afford a great opportunity to lay a solid foundation for a unified approach to health among community health practitioners of the future. This would be a natural way, for example, to introduce community medicine to medical students.

Violence (in addition to that associated with motor vehicle collisions), has long been ignored by health workers. This neglect occurs in the face of 100,000 violent deaths among Americans each year, with countless more wounded and disabled. Violence and its correlatives should be the joint concern of social

scientists, criminologists, and health workers, especially epidemiologists. Excessive violence, particularly in the cities, will be recognized by some as abnormal behavior and should call for preventive efforts. Not only as a cause of death, but as a threat to peaceful living and human safety, these extreme forms of social and personal behavior will have to become a concern of public health, particularly to workers in the field of mental health and associated social sciences. Gun control laws may seem a far cry from public health, but if they offer hope for reducing violent deaths or serious injury they, too, deserve our active support.

Maternal and Child Health, Nutrition, and Family Planning

In the next decade we can expect increased attention to the physical and mental ailments of persons under 21 years of age, hopefully equal to that of persons over 65. Infant mortality, accidents, all types of handicaps and dental diseases can certainly be reduced. Not enough consideration is given to the problems of growth and development of adolescents among whom may lie hidden the last chance to mold the health and conduct of future adults. We must try harder to see youth as they see themselves.

Genetic counseling of parents should reach a higher level of coverage in future years. At present we continue to maintain genetic endowments that militate against health and survival.

Environmental determinants play a role in shaping individuality, probably as great, or greater, than genetic determinants. According to René Dubos,¹⁰ the conditioning of the organism by the environment begins during intrauterine life. His experiments with animals have confirmed and extended observations on early environmental forces other than postnatal practices. Among animals he

has produced profound and lasting effects by manipulating such factors as temperature, humidity, type of housing, infection, nutrition, extent and variety of stimuli, degree of crowding, association with other animals of the same and other species.

If Dr. Dubos' convictions from his experimental work are confirmed by observations on growing children, it may be necessary to redirect our health resources to the prenatal period and the first few years of life. Perhaps from three to five years of age is already too late to effect change. One person has even suggested that the United States should emulate the practice in Israel and Russia by providing baby care centers for those unfortunate infants and young children born into poverty and squalor, overwhelmed by unfavorable environmental and social conditions. Baby and child care centers located in the slum areas and staffed by supervised mothers in need of employment, and supplied with comprehensive health services and food of high quality might give these children a better start in life. We not only want to preserve the lives of infants and children, but to maintain their well-being at an optimum level.

An example of an exciting lead for experts in maternal and child health to pursue, comes from Dr. Caldeyro-Barcia.¹¹ For several years he has been studying the physiological changes in the fetus during labor, under "normal conditions" and under "fetal distress." Marked and prolonged disturbances of fetal circulation can cause permanent brain damage. By monitoring the maternal and fetal circulation with simple electronic recorders it is possible to detect early evidence of intrapartum fetal distress. Abnormally strong or frequent contractions cause fetal distress and lead to depression of metabolism and even to death. The consequences of fetal distress show up as lower Apgar scores in the newborn and later on frequently appear

as higher incidence of respiratory dysfunction and brain damage in the child.

If these latter findings are confirmed in a larger number of cases and by other observers, they have great medical and social significance, since such disturbances can lead to irreversible structural damage. Dr. Caldeyro-Barcia cites some English studies which report that 20 per cent of perinatal deaths are caused by "intrapartum asphyxiation" and another 20 per cent may be accounted for by macerated stillborns—a condition which may have resulted from disturbances of fetal circulation.

Several methods are available for correcting fetal distress during labor, including arrest of labor pains and caesarean section. Monitoring of maternal and fetal circulation and blood constituents offer some new approaches to reducing infant mortality and respiratory and neurological sequelae in children. To many mothers, having a normal baby is more important than having a live one.

Nutrition. From animal studies and actual experiences in developing countries, it has been shown that protein-calorie malnutrition warrants serious consideration as a determining factor in retarding mental development as well as physical growth. Winick studied the brain tissues of children who died of malnutrition during the first year of life.¹² Nucleic acid and protein analyses of the tissues indicated a marked reduction in the number of brain cells in all brains examined. The critical period of human brain growth, specifically cell division, would appear to be before birth and up to six months of age.

We in the United States cannot ignore the international implications of so many underfed and potentially underdeveloped people in the world. According to Canosa¹³ we may be witnessing a situation in which two-thirds of the preschool children in the world (400 million of them) are becoming mentally handi-

capped due to protein-calorie malnutrition.

In all fields of international health we in the United States will have an increasing and continuing responsibility. In no field is this responsibility greater than in the growth and development of children.

In the large cities, especially among the estimated 45 million persons living in poverty or near poverty, signs and symptoms of malnutrition appear in many patterns. The same is true for many impoverished families in rural areas. These evidences of malnutrition reflect diverse variables—demographic, epidemiologic, and social. The varied etiological aspects call for multifaceted approaches to solutions. Health workers, because of their expert knowledge of nutrition and its ill effects, should take more forceful initiative in stimulating community awareness and action and also in mobilizing community resources.

Family Planning. Quite apart from its role in population control, family planning should become one of the key services offered by comprehensive health centers in the immediate years ahead. Studies have repeatedly shown that hundreds of thousands of women in the United States continue to have unwanted pregnancies. Aside from the mental and physical aspects of these pregnancies, the social and economic overtones affect adversely the daily lives and quality of living conditions of millions of persons. Simpler and cheaper methods of contraception are in the offing. There is also the possibility of development of an immunizing agent to prevent pregnancy.

Health leaders have no choice but to incorporate family planning services into their programs, not just for a privileged few but for all women who want help. According to Lee²⁹ health services of the future cannot be comprehensive in their coverage without family planning available, accessible, and utilized.

Even in 1968, lack of family planning stands out as one of the glaring deficiencies in public health and in human well-being in the United States.

Infectious and Parasitic Diseases

Acute communicable diseases still present problems in urban and economically depressed rural areas. The means of control are available but services are not well enough organized to reach those most in need. For example, tuberculosis is not yet under control in all these areas. Immunizing agents against hepatitis and the common cold still elude our most able investigators.

The parasitic diseases will continue to be a problem, especially in the cities and among migrants from the South, Puerto Rico, and tropical countries where such infestations maintain a high endemic level. Laboratories for surveillance of diagnostic and treatment services are requisites for every comprehensive health center. Chronic illness from multiple infestation affects whole families.

A major factor in the continued recurrence of infections and infestations is the low standard of living of the deprived families—unemployment, poverty, ignorance, hopelessness, and helplessness. A massive attack to improve human well-being offers the best answer.

Accidental Deaths and Injuries: Occupational Diseases and Hazards

Accidents. The problem areas of accidents include transportation, the home, the places of work, and recreational sites. Accidents have both medical and environmental aspects which deserve concerted action.

Both aspects include prevention of occurrence and minimizing the ill effects after the accident happens. It is on the personal health aspects that our attention centers, because the application of effective measures and the fragmentation of remedial services are so glaringly de-

ficient. Again, as in so many phases of community effort, no one agency can handle the job alone. Health education is only one of the means of prevention and control and must be complemented by a whole array of health services.

In speaking of motor vehicle accidents, Haddon¹⁴ focuses on an emergency response system in the community, which employs a multidimensional approach. Such an emergency system is based on three essentials: (1) communications, (2) command and control, and (3) transportation. These essentials apply to all major disasters like floods and hurricanes, to scattered emergencies such as poisonings and electric injuries, as well as the 50,000 deaths and over three million injuries associated with highway accidents each year. Dr. Haddon emphasizes that in addition to the three basic ingredients, several community-support efforts are also necessary, e.g., fire and police participation, crash investigation and traffic rearrangements. All of these activities can be preplanned and thereby called into simultaneous action. (The New York State Health Department has come up with a unique idea for a state-wide communications network. In an emergency by simply dialing the letters MED-ICAL the caller will immediately reach the nearest emergency services.)

Such emergency situations are acute social disruptions in community life. Someone has to initiate the steps necessary to bring all the factions together for joint solution of these wasteful and costly problems. It is not enough to cry in anguish and to repeat over and over again, "We *must* do something about this terrible situation." Someone has to start the action—is this not the role of health leaders in the community?

Sufficient research is not being supported by the federal or state governments in the epidemiology of motor vehicle accidents. The budget of the National Highway Safety Bureau of the

Federal Highway Administration is grossly inadequate. The few hundred thousand dollars appropriated is a national disgrace. Billions of dollars of damage are involved each year, to human beings, to property, and to the health of our people. Here is a worthy cause that health leaders could espouse if they wanted to reduce death and disability among our citizens.

Occupational Diseases and Hazards. Occupational hazards and illnesses should receive greater attention in small industries and businesses throughout the nation. The large industries have shown the way and made preventive services pay dividends in greater productivity and worker satisfaction. The health agencies should join forces with labor unions to insist on the application of modern methods of protecting workers against physical, chemical, and biological hazards. These programs could tie in with comprehensive health centers, both in and out of hospitals. Community health administrators have much to learn from industrial physicians in the science and art of preventive medicine.

Space flight and submarine explorations will add new environmental and health dimensions to occupational health. Research findings from these exotic fields should be applicable to relevant segments of community health. Public health workers will need to define their roles in these new fields of the medical sciences of the future.

Environmental Dimensions of Health

Studies and Reports, Political Action, Problem Areas

Since 1960 a veritable torrent of reports on environment and health has been cascading over the professions and the public. Among the principal national offerings are:

1. The Surgeon-General's report on environmental health presented to Congress in 1960.

2. The Gross report on environmental health problems submitted to the Surgeon-General, Public Health Service, in 1961.

3. The National Academy of Science-National Research Council's report on the educational needs in environmental health of 1961.

4. The Tukey report from the President's Science Advisory Committee on the subject of restoring the quality of our environment in 1965.

5. The reports of the annual congresses on environmental health problems sponsored by the American Medical Association.

6. The Linton report of the task force on environmental health and related problems submitted to the Secretary of Health, Education, and Welfare in June, 1967.

Other publications are also well worth reading, e.g., Ewald's "Environment for Man—The Next Fifty Years"¹⁵ and "America's Changing Environment,"¹⁶ in the publication "Daedalus." Articles by such authorities as Wolman¹⁷ and Purdom¹⁸ have been particularly useful because of their breadth of view of the environmental dimensions in all aspects of community life.

From this flood of publications, however, certain concepts of future import are seen rising to the surface: unequivocally, the environmental dimensions of health are equally as important as the mental and physical ones in terms of human well-being.

The pollution of water, air, and soil by biological, chemical, and physical contaminants is a national disaster. The teeming slums in our urban areas are more like rat warrens than human habitations. Solid wastes piling up in the cities threaten to bury the inhabitants in their own filth.

The extent to which aspirations overshadow implementation furnishes vivid evidence of the immensity of the problem and of the reluctance to invest the enormous sums of money necessary to solve it.

Resources committed to correction of environmental hazards are not only too little, but in some areas ten to twenty

years too late. "Catching-up" with the problem is going to be doubly expensive because of procrastination. It is also going to take time because of the lack of understanding and fiscal support of the gargantuan program necessary to meet national needs.

Categorical approaches to correction of environmental hazards will no longer suffice. The planning and implementation must encompass the total environment—not just water here, air there, and solid wastes some place else. The environment of the community contributes to the social, medical, and economic welfare of the people, for better or worse.

The psychological dimensions of the environment have not received the attention they deserve. Environmentalists of the future will have to learn to work with psychiatrists, sociologists, and other social scientists in problems of mental health. A concept of environmental "wholeness" implies a multidisciplinary approach to its problems. Sociologists, economists, political scientists, educational psychologists—these are some of the social science disciplines that can strengthen the work of the environmentalists. These social scientists know how to ask the right questions about community motivation, how to measure the long-term effects of control on the community, and how to determine the role of the environmental experts in improving human well-being. They know how to devise the research and evaluative studies necessary to get some answers to the unsolved problems that stand in the way of implementing existing knowledge and skills.

New Confrontations and Political Actions

Industrialization and urbanization have changed the environment so drastically that reorientation will be necessary, not only for professional personnel concerned with health and welfare, but even more so for community leaders. Unless

political leaders believe in the importance and necessity of strict environmental control, they will not appropriate adequate funds to do the job.

Health leaders and environmentalists will have to take immediate preventive action to ward off the evils of environmental hazards that are inexorably crowding in on us. If necessary, that means open competition for governmental funds, with real estate operators, apartment building contractors, the automotive industry, and other special interest groups. Preventive action means getting into the political arenas of transportation and city planning; of relevant federal, state, and local legislation. It means stepping into the fray before irreparable damage is done. Future success lies in health experts becoming as skillful in political science as in health administration. The time is long overdue for health leaders and their colleagues concerned with human resources to involve themselves in every aspect of the relationship between environment and health, especially the legal-political one.

The same type of specific action should be taken, of course, in the field of personal health services discussed previously. The lack is great in both aspects of community health but perhaps greater on the environmental side. Some useful guidelines for political action are available in the reports of the National Commission on Community Health Services,^{19,20} especially the monograph on the "Politics of Community Health."

Environmental Problem Areas

The specific environmental problem areas in health can be grouped under six main headings, with some overlap. Each of these segments has special characteristics worth noting when determining a course of action for tackling the multiple problems of health.

Water Resources. It does not suffice to think of water pollution alone but also

of the larger problems of water uses for human consumption, for industry, and for recreation. Many of the chemical contaminants are complex compounds that defy containment by ordinary treatment methods. In this area, research is the only answer. Yet physical and biological contaminants generally can be controlled by available technologies. Lack of money is the main obstacle. The state and local governments do not have the taxing powers to provide the necessary funds. So the federal share will have to be increased in proportion to the magnitude of the national problem. Efforts should be concentrated on preventing new pollution as assiduously as on the reduction of existing pollution.

Air Resources. The pall resulting from air pollution over our metropolitan and industrial complexes hangs like a shroud over a huge coffin. People do not die suddenly in the streets from this contamination. Nevertheless, the damage is occurring slowly and relentlessly to the lungs and other vital organs of urban dwellers. The physical and chemical pollutants—from motor vehicles, electric power plants and other industries, refuse burning, and construction activities—pour into the lungs and permeate the bodies of urbanites, day after day, month after month, year after year. Means are at hand to reduce air pollution in the nation but, as long as there are no sudden deaths or epidemics, the public and their elected officials are difficult to arouse. Must we always have crises before we act? Again, the health leaders are challenged to provide understanding, to gain acceptance and support of remedial programs by participating actively and continuously in the political processes of the community. When individual action and persuasion do not produce results, we have no choice but to resort to new kinds of sanctions and incentives.

The social and economic implications of air pollution go far beyond personal

health, of course. The destruction of property and of plants, the cost of cleaning clothes, homes, and other buildings—these are just a few of the monetary disadvantages in addition to the physical discomforts of never getting away from the dirty and harmful residues of polluted air.

The air we breathe, the water we drink, the places where we live and work and play—what can be more vital to social, mental, and physical well-being?

Food and Pharmaceutical Resources. In addition to physical, chemical, and biological contamination, purity and quality of food are also of concern. In the next decade we should see great advances in the packaging and storing of foods and in the further development and distribution of low-cost protein sources (such as fish meal). The use of ionizing radiation for quality preservation and avoiding spoilage of perishables should develop rapidly. With malnutrition still present in this country, we cannot afford to waste food.

The actual degree of malnutrition among disadvantaged groups should become known as surveys now under way are completed. Then comes the triple problem of getting the right foods to the right people at the right time, especially children among the impoverished. The antiquated system of handling surplus foods needs complete overhauling. Food is not just a health problem; it involves the whole community. Health and social services will jointly have to face up to meeting this problem wherever malnutrition exists.

Control of pharmaceuticals, e.g., the safe and appropriate use of drugs, biologic products, hormones and therapeutic devices, remains a troublesome problem. However, favorable changes in the leadership of the Food and Drug Administration have improved the situation in the last few years. Quackery still drains off millions of dollars of public

and private funds, yet it should be susceptible to better control in the coming years. The cost of medications is one of the points at issue among the governments, the drug manufacturers, medical practitioners and hospitals, all of whom are engaged in an unceasing "price war." Resolution of some of the differences is occurring but progress is slow. Billions of dollars of profit, traditional practices and resistance to change are not easy factors to get around. The problem is so great and urgent that painful compromises by all parties appear inevitable in the next few years.

Ionizing and Other Forms of Radiation. Man-made and natural sources of ionizing radiation will, increasingly, be under stricter federal and state control as more scientific knowledge accumulates about its genetic effects on future generations. Efforts will be concentrated on the principal sources of human exposure—diagnostic x-ray machines—by enforcing higher standards for equipment and x-ray technicians and by employing machines that automatically monitor themselves (now in the early stages of development). Special attention will be focused on training medical and dental students and on urging physicians to limit x-ray examinations to a minimum. In this way, benefits will outweigh hazards, especially among growing children and women in the childbearing period. The federal radiological health program will undoubtedly be expanded further in research activities, in consultation to the states and in standard-setting. The National Center for Radiological Health should be given legislative authority to be the principal federal agency concerned with policy and standards on the public health aspects of ionizing radiation.

As atomic energy plants for the production of electricity extend throughout the country, the federal and state health services should have responsibility for a monitoring network for automated sur-

veillance of contamination of air, water, food sources, and the soil. If atomic weapons testing starts in again on a large scale, the monitoring systems of the health agencies could tie in quickly with those of the Defense Department. The medical aspects of civil defense will continue to be an important responsibility of official health agencies.

Human Settlements and Residences. Future concern should include not only urban housing, but also adjacent areas where people play and work. Low-cost housing developments, for example, will require medical care within housing complexes, especially for the convenience of older citizens. According to James Q. Wilson, the trouble in urban centers is not primarily the problem of housing, but problems involving poverty, race, and the culture of the families living there.²¹ Improved housing is not going to change the lives of the poor until more is done about unemployment, lack of education and medical care, broken families and the raw despair that accompanies the absence of purpose and the absence of opportunity for change. Indeed, to achieve optimum health for the disadvantaged, the public health profession has to share the primary responsibility for obtaining a decent family life. We cannot shirk or ignore this responsibility.

Public health workers have been interested in the "hygiene of housing" for several decades but the commitment has not been deep enough or broad enough to extend to the entire human settlement. In the future, a resurgence of this interest and a broadened scope of action means getting right into the core of the ghettos and the shanty towns of poverty regions and helping to change the social and the health structure. No one group in the community can do the job single-handed. It is going to take a lot of brains, a lot of hands, and a lot of money.

Solid Wastes and General Sanitation.

Solid wastes rank with water and air pollution as major environmental contaminants. The large cities are becoming hard pressed to know how and where to dispose of the millions of tons of this refuse that increases yearly as the population increases. Rat and vermin populations multiply in proportion to accumulations of wastes and the slum conditions of living. The cost of transporting solid wastes away from urban centers adds to the tax burdens of the city dwellers. City officials have been brought almost to their knees when sanitation workers go on strike and let the refuse pile up in the streets. No easy solution is in sight. Environmentalists and government officials have a tough problem on their hands and will need to develop new approaches for dealing with it, e.g., the reduction of solid wastes through regulation of packaging.

Several additional problems confront us in the sphere of general sanitation. Extensive use of pesticides and insecticides can affect the safety of living things and of food sources. The search goes on for safe and sure exterminants. Realty subdividers in the expanding suburbs and adjacent territories still fight the health agencies over sewage control. Milk inspectors continue to encounter difficulties when farmers search for new markets across state boundaries. Noise control in the large cities and near airports has not been developed sufficiently to avert psychological stress. Even property values have been affected. Residents give up the fight against the ceaseless din and move away.

If there ever was a place for "creative federalism," it rests squarely in the realm of the environmental dimensions of human well-being. If man does not desist from ruining his environment, before long the environment may ruin him.

Poverty and Health

Poverty is without question our greatest national domestic problem. Furthermore, it affects and is affected by every

one of the health problem areas that have been briefly reviewed. The social components of illness and environmental hazards are nowhere more evident than among the poor, wherever they may live throughout the country.

Few people realize how large the much-publicized "pockets of poverty" really are. In their excellent program analysis of "Delivery of Health Services to the Poor," Gorham and his associates²² used the well-known Social Security Administration definition of the poor and the near-poor. In 1966, by this formula, 30 million people in this country lived in poverty and an additional 15 million were near-poverty even though the gross national product is likely to exceed \$1,000 billion during the next decade.

Numerous studies have shown how much more severely a host of diseases, defects, and injuries affect the poor than their more affluent neighbors. The environment of many of the poor, in their homes, in their streets, in their work places, defies description. Negro and other nonwhite families suffer more than three times higher prevalence rates of poverty than white families, even though many of the latter are in the poverty group.

How can any health system hope to perform satisfactorily in the face of malfunctioning of the social, the educational, and the employment systems in this technological society? The mental, physical, environmental and social aspects of human well-being are interdependent. The hard-core poor will be little affected by a piecemeal approach. Money spent on only one segment of the problem will be largely wasted because the basic difficulties of the societal system of providing for the poor will not have been corrected. Health care can contribute to individual productivity only if an opportunity to work is provided. Health can contribute to family well-being only if there are decent places to live and to play and a chance for the

children to grow up in normal family surroundings.

The social components of the health problem are concentrated among disadvantaged families, but they are not limited to the poor. Social breakdown resulting from the sickness of one of the members can quickly become a disaster in the family in which it occurs. A comprehensive approach to health problems therefore requires equal consideration to mental and physical ailments, to the environmental dimensions, and to the social components. The latter include the prejudices in our society that helped create and still foster our greatest national domestic problem.

Resources to Meet Health Needs

The scope and content of public health in the 1970's will be affected by the resources of money, manpower, and matériel likely to be available to meet health demands and needs. Until we first determine, rather precisely, *operational* goals, patterns of service and new uses of personnel, we cannot be certain what resources we will need. These are the prime factors in resource determination and allocation.

The principal resource, of course, is money which makes manpower, facilities, equipment, and supplies—and the health services they provide—possible. In addition, large amounts of money are necessary for medical research and for the education of health professionals, technicians, and auxiliaries. Furthermore, what is spent for health depends upon what is available from all sources and upon the competing demands and needs of nonhealth programs. For example, a costly war (Vietnam) exacts a price that must be added to the direct loss of life and property.

Finances

Wilbur Cohen, the Secretary of the Department of Health, Education, and Welfare, in testifying before a congress-

sional committee in April, 1968, gave some startling figures on health costs.²³ He said: "Health services are a \$50 billion-a-year industry, one of the nation's largest. In 1966, it was the third largest industry in terms of number of employees." He pointed out that federal expenditures on medical research are now \$1.5 billion a year and that medical facility construction amounts to about \$2 billion a year. He noted further that nearly 20 million persons over 65 years of age are now covered for most of their hospital bills by Medicare; costs of physicians' and other medical services are covered for 18.5 million people. During the fiscal year 1967, public health expenditures rose from \$11 billion to \$16.2 billion, mainly from Medicare and Medicaid funds. The public sector now finances more than one-third of the total health care expenditures compared to one-quarter in 1961. Mr. Cohen estimates that expenditures for medical care may reach \$100 billion by 1975.

Price increases, population growth, greater use of services, advances in medical science—all these factors contribute to the spiraling costs of the American health care system. Few controls are exercised in the expenditure of funds for health because of the pluralistic society in which we live. Walter McNerney points out: "In the United States, health services are owned, operated and financed under a multitude of auspices."²⁴ He further states that in 1966 the number of health prepayment and insurance agencies was estimated at over 1,700, with over \$9.1 billion of health benefits provided. The major challenge to survival that these agencies face is rising health service costs. They may, against their will and their best efforts at control, be priced out of business. To McNerney, an expert in this field, "the issue boils down to what can be done to change the present system of financing health services so that its challenges of productivity, access and effec-

tiveness are met, its strengths are preserved and its anachronisms are discarded."

Year after year, the federal government has been raising its contributions to health programs—services, research, and education—and the trend is likely to continue until resources spent come close to demands and needs. The reduction in appropriations for fiscal 1969, however, may herald an ominous trend. Titles 18 and 19, amendments to the Social Security Act enacted in 1965, covered the care of millions of additional persons of all ages. Grants administered by the Children's Bureau, both present and proposed, should provide for broad extension of care to mothers and to persons under 21 years of age.

If all the aged, disabled, widows, and dependent children and not just those receiving Public Assistance grants, were put under Social Security, several millions of persons could leave the poverty and near-poverty rolls. One physician has even suggested that medical care for all children under 21 be financed in the same way as for persons over 65. Family allowances and a federal welfare program with 100 per cent support from federal sources are in the discussion stage and could easily come into being in the next few years.

If complete chaos and unforgivable waste and duplication are to be avoided, a national system of comprehensive health services seems inevitable. To enable the providers of health services to reach all those in need of help, the financial barriers to health care for everyone have to be removed. Total funds spent for preventive services should be brought into equilibrium with those spent on remedial services. Funds for research and development in the field of health manpower should be augmented.

Health Manpower

Since 1960, an increasing volume of health manpower studies has been flow-

ing out of the federal agencies, the universities, and private foundations. A few of the figures are presented for review and appraisal. To provide services to the 200 million Americans, 300,000 physicians serve in a variety of practices and roles; 700,000 nurses are enumerated but not necessarily available; a lesser number of dentists and other professionals (e.g., physical and occupational therapists, social workers, and veterinarians) are spread, also unevenly, throughout the country. The total number of health workers is estimated at over three million. Yet the unanswered questions remain. How many and what kind of health professionals, technicians, and auxiliary workers will the United States need in the next ten to twenty years, if we are to develop health systems that effectively deliver services to the right people at the right time and place?

The President's National Advisory Commission on Health Manpower²⁵ stated the situation succinctly: "To speak of a system is really misleading because it implies that there is an overall organization of health care activities which functions as a coordinated unit. In fact, health care is characterized by multiple, inadequately coordinated subsystems, some of which are totally independent of each other." Schaefer, et al.,²⁶ posed the question another way: "The Health Manpower Crisis: Cause or Symptom?" They argued that, "while the traditional approaches of health administration would identify the chronic personnel shortage as a *cause* of administration deficiency, the shortage might better be concerned—and dealt with—if regarded as a *symptom* of basic derangements in our health services system." The National Commission on Community Health Services²⁷ came to the same general conclusions.

Health workers should begin to prepare now for their new roles as health systems inexorably change. This might

be called *preventive personnel administration*. Generalists will need to be developed to work with broad-gauged experts in the political sciences, bioengineering, economics, sociology, social work, and a host of other disciplines concerned with human resources. Although both generalists and specialists now labor in the field of public health,²⁸ the ratio may well shift in the future in favor of the former, because concepts of modern organization may gain new prominence.

We need to train professional staff, both medical and nonmedical, for their future administrative tasks. This training differs from that of technical and scientific personnel and from that of auxiliary workers. Schools of public health will have to reorganize their curricula to meet these diverse needs and also work jointly with schools of urban affairs, government, architecture and engineering, law and economics, among others, to prepare a new breed of health workers for their new tasks as the whole health system changes. It is no longer sufficient for schools of public health to relate their teaching exclusively to schools of medicine, dentistry, and nursing. The teaching of the environmental dimensions of health deserves equal time with that of personal health services.

A new approach to a system of providing health services in no way takes the place of improving recruitment, selection, training, and retention of existing health personnel. The two activities should complement each other; neither one is sufficient alone. Continuing education for existing health workers is a practical necessity in this period of rapid social-political change.

We need to recruit from the minority groups for all classes of health personnel. This is a relatively untapped pool of labor forces. We need to revise merit system standards (an Advisory Committee to the Secretary of Health, Edu-

cation, and Welfare is now working on this problem), both federal and state, to accommodate the thousands of new workers being recruited for new programs. The need to evaluate training and the individual potentials of health workers has never been greater. Fortunately, the variety of testing technics (in addition to written examinations) has also been greatly expanded in recent years.

A systems analysis of the health industry—federal, state, and urban—offers the best chance of overcoming the critical health manpower situation on a long-range basis. The same old methods of trying to fill the ever-widening gaps are no answer to the basic problem.

Facilities, Supplies, and Equipment

Almost as important as health manpower in the delivery of health services are the facilities, supplies, and equipment required by health personnel to perform their tasks efficiently. This is equally true for personal health services and for control of environmental hazards. Hospitals are expensive but so are water treatment plants. To favor one over the other only impedes the total health program.

In 1946, the federal government took a giant step forward by providing funds for planning and building general hospitals, especially in rural areas. Since that time, a network of approved hospitals has sprung up all over the country. In addition, federal funds have helped modestly in the construction of nursing homes, rehabilitation centers, and some diagnostic and treatment centers and community health centers. Sizable federal funds have been awarded for special health centers to care for the mentally ill and retarded.

In the next ten years similar, if not greater, amounts of federal funds might well be appropriated for a national network of comprehensive health centers.

Such centers could be located in the neighborhoods close to where people live and be administered by health administrators trained to use every conceivable type of health facility, including laboratories. Such facilities would be established for the convenience of the consumers rather than the purveyors of services. They should not be attached to traditional institutions that have deteriorated or otherwise outlived their usefulness.

The source of capital funding for future health facilities is a complex question to which answers should be sought relatively soon. The Hill-Burton Act expires on June 30, 1969. Now is the opportune time to review the whole subject and make alternative projections for the future. Fortunately, in October, 1967, the President appointed a National Advisory Commission on Health Facilities, headed by the distinguished health statesman, Boisfeuillet Jones. A report is awaited with great interest and should give facility planners some directions for the future. Governmental, private, and foundation funds are all needed to alleviate this problem.

Changes in Community Health Administration

Setting Priorities Among Health Problem Areas

One of the most difficult tasks facing the health administrator in both official and voluntary health agencies will be determining priorities among the multitude of health problems requiring his attention. Resources are always limited so they must be husbanded and allocated where they will do the most good. The health administrator is torn between doing what has seemed to be important in the past, largely on a categorical basis, and what a study of the current and anticipated problems tells him should be his course in the future. No

single method exists in the field of health, no mathematical formulae have been developed that enable the administrator to make these decisions. Deaths, morbidity and disability rates are useful background material for making judgments. Yet how does one compare the relative value to the community of reducing the mortality from cancer of the breast with reducing the morbidity from psychoneuroses? At the present time these program decisions are made largely on the basis of what money can be obtained; what pressure groups want; what the people want and what they accept as traditional health activities.

One ray of hope for setting priorities is the type of program analyses applied to major health problems, explored by Gorham and his associates in the Department of Health, Education, and Welfare during 1966-1968.²⁰ These are the most searching studies available on the subject. It is not necessary to be a systems analyst, operational researcher, or mathematical wizard to understand these analyses. The basic limitations, however, are that the criteria are largely economic and do not accommodate other kinds of values at the level of programs and activities.

Such analyses provide alternative choices for the administrator in the use of resources, based upon anticipated benefits in relation to costs. If data are available, this method is equally applicable to the delivery of health services to 45 million poor people or to selected disease control programs like cancer, tuberculosis, or arthritis. This type of analysis will not tell the administrator what should be done with resources under every circumstance, but it may supply him with the kind of information needed to make better decisions.

In the next decade, this pattern of health program analysis is likely to permeate all levels of government and inevitably those health agencies that receive substantial amounts of government-

tal funds. Health workers would be well advised to become skillful in the use of this approach.

Goals Based on Needs and Resources

Now that the major health problem areas have been presented, the resources necessary to do something about them listed and discussed, and the difficulties of establishing priorities described, it is time to set forth the principal administrative goals to be achieved.

Among the several hundred letters from members of the American Public Health Association and other health workers (received in response to a request for comments from the Executive Director, Dr. Mattison), a consensus appeared on two administrative goals. First, to provide comprehensive health services of good quality to all in need or in want, easily accessible and available and with no financial barriers. Second, to prevent, reduce, or eliminate environmental hazards to healthy living, whether physical, chemical, biological, social, or psychological in origin.

How to go about accomplishing these goals presents some profound and puzzling questions which health administrators and their professional colleagues will have to answer during the next decade. Nothing less than the best that modern administration has to offer will suffice.

Administrative Organization and Management

Nothing less than a massive reorganization of the entire health services of the country will free us from the administrative morass in which we find ourselves mired. Fifty billion dollars a year is being spent on 200 million people, yet 45 million of these persons are impoverished in health care (as well as other necessities of life). Health care is uneven in quality and distribution. The

poisonous contamination of the environment continues to increase; man is literally fouling his own nest. No matter how many years it takes, better organization and management of our health resources on a vast scale are the battle orders of the day. Health leaders in every health agency have the administrative responsibility to take part in that battle.

The federal government sets national policy and provides a large share of the funds for health; that is the place to begin reorganization. In the last few years, Secretaries Gardner and Cohen have made significant strides forward, but the changes are too recent to know what permanent benefit will result. As recently as June 14, 1968, Secretary Cohen³⁰ submitted to the President (at his request) a report detailing: "a modern plan of organization to achieve the most efficient and economical operation of health programs of the federal government." This document should be studied by health administrators throughout the nation because of its long-range projections and state and local implications. Among other things it provides for an under secretary of health and science in the Department of Health, Education, and Welfare.

Yet a glaring defect remains. In 1968 we still have no national health plan for the United States. Great Britain, the Scandinavian countries, the U.S.S.R., even many developing countries of South America and Africa, have developed and are implementing such plans.^{31,32} Amazingly, Public Law 89-749, the Comprehensive Health Planning Act, does not provide for a national health plan; it directs its attention primarily to state and local area-wide planning.

The second major administrative problem requiring organizational and managerial correction is the widespread scattering of federal responsibilities, programs, and granting of funds to

states and localities. Both coordination and communication—two keys to successful public administration—are lacking among these agencies. Secretary Cohen, in his report of June 14, 1968 mentioned above, requested the President to make him, as secretary, responsible for coordinating all federal health programs. But if there is one iron law in the realm of bureaucracy, it is that coordinators do not coordinate each other. One secretary does not tell another secretary what to do. When disagreements among equals solidify, someone from above has to step in. For these and other reasons, the Task Force on Organization³³ of the National Commission on Community Health Services recommended a health adviser in the Office of the President of the United States. This person could really coordinate cabinet secretaries.

Health Education in the Community and the Schools

One vital area, too long neglected within the Department of Health, Education, and Welfare, is health education of the many special publics who receive health services. Both service and research are so modestly funded in the practical aspects of the behavioral sciences, that health educators throughout the country are scandalized by this national inadvertence. What is needed in the proposed office of the under secretary of health and science is a top-level behavioral scientist who is expert in community health. He can advise the secretary on policy, both in and out of the department, have supervision of its health education activities, set up a nationwide program that reaches out into the communities and get a full-scale research program under way. He might also do some cost-benefit studies on the informational and motivational values of the avalanche of federal news releases and public speeches that inundate the public and the professions.

The worst example of neglect is the absence of a nationwide program for educating school children in the modern concepts of health. It is inexcusable that no joint national program worthy of the name exists between the health and education components of the Department of Health, Education, and Welfare.

School health education should form an integral part of a nationwide program of community education beamed at the sick and the well, the young and the old, the urban and rural dwellers. Behavioral scientists tell us that excess eating, drinking, and smoking habits among adults are exceedingly difficult to change, except for short periods of time. Maybe the best way of preventing many adult practices harmful to health would be to enlighten children during their formative years from kindergarten through high school.

School health education, if supported adequately both financially and professionally, should help to prepare future adults to accept health as a quality of life which promotes effective living.³ The child who early in life acquires modern health concepts can build a foundation for future health behavior for the time when he becomes a parent and a productive member of his community.

The national leadership in school health education must come from the Department of Health, Education, and Welfare. It should initiate and maintain a massive effort that permeates every community. The time for action is long overdue.

While we are talking about the need for health information for different publics, let us find out how to develop a public health constituency as powerful and effective as the "farm public." Let us get health workers out of public health meeting halls and into the town halls. Let us find out who the consumers actually are and get them involved in health planning and implementation. Health information services

should have equal billing with planning in every active program developed by health administrators at all governmental levels. How else can we obtain understanding, acceptance, and support of essential health programs?

Several Remaining Administrative Problems

Many administrative problems still remain to be resolved within the Department of Health, Education, and Welfare; to mention just a few: the medical aspects of Medicare and Medicaid, children's health programs, rehabilitation, consumer protection, environmental dimensions of health, the relation of federal to state and city health programs, and the respective roles of the public and private segments of the health industries. Health workers should be on the alert to see how the various reorganizations work out since their own future roles will be largely determined by changes in federal policies and funding.

In the next few years, we might see a separation of the education component from the Department of Health, Education, and Welfare and the establishment of a federal Department of Education. Health and welfare have so many programs of mutual concern, they might profitably stay together organizationally. This could become a pattern for the amalgamation of health, welfare and mental health departments in the states, to the mutual benefit of the people served and the servers. Tradition and professional competition are the intrinsic reasons for present artificial separations.

The state health agencies face many of the same organizational and managerial problems as the Department of Health, Education, and Welfare. Fragmentation of programs continues to occur. The personal and environmental aspects of health are pulling away from each other rather than working in double harness. Perhaps the greatest de-

ficiency is the lack of well-financed, broadly-based official health agencies throughout the country, led by career professionals who have knowledge and skills in administrative theory and practice equal to that in the content matter of community health. Too few of our middle-aged and middle-management health administrators have an adequate acquaintance with modern public and business administration.³⁴

The health agency administrator, to be fully effective in the years to come, cannot limit himself to keeping up with technological advances in his own and related fields. He must participate professionally in the politics of his community, no matter what the risk. That is where the action is, where decisions are made, where appropriations originate. Medical societies can no longer be dominant in determining community health policies. They are only one band in the spectrum of political and medical factors that the health administrator will consider before making policy decisions.

When we reach the local level of health operations in the cities, the suburbs, and rural areas, the administrative confusion is compounded. These areas have their own problems of organization and management, and of insufficient health resources. Interference and direction from state and federal policy-makers and fund-givers add to the administrative burden. One hope for the future may be the development of state and area-wide planning under Public Law 89-749, referred to above. Yet the magnitude of the planning task "baffles the imagination by its immensity and challenges rationality by its complexity."³⁵

The neighborhood health center may be another ingredient to add to the mix of health facilities to help bring order out of administrative chaos. Several cities are now experimenting with such comprehensive centers and also with amalgamations of all official health serv-

ices under one agency, such as the Health Services Administration in New York City. The neighborhood center concept of the Office of Economic Opportunity also has many intriguing possibilities and does not limit itself to health and social services.³⁶ These efforts at experimentation are noteworthy and merit support and encouragement.

The concept of comprehensive health centers could turn out to be the key which can open the locked door preventing a proper and efficient mix of health services. At the same time these centers could offer great opportunities for the education of health workers, for research into better ways to deliver services and better means of using all types of health personnel. Such centers could include medical, environmental and social units, employing nonprofessional health guides to reach out into the homes and bring in persons needing care. They could offer information and referral services to help people find the right community agencies. They could be the source of accurate and complete data for the information banks which are so essential for planning and implementing programs. Health education and information activities based upon behavioral science principles could become one of the significant contributions of these centers to the community. However, this requires consumer participation in every activity. The voluntary health agencies have a special responsibility to make these modern concepts work.

These centers could be staffed by trained health administrators able to work either in the hospital setting, community health services, or medical care programs. The artificial distinction between these three types of services is rapidly disappearing. A successful network of these centers tied into all other facilities could very well mean the demise of district health offices (in large

cities), many of which have outlived their usefulness.

The major functions of community health centers would be to bring adequate preventive services to the people where they live. The centers could tie together the school health services, the field nursing services, emergency and outpatient services of all hospitals in the area (including ambulance services) and the services of the voluntary health agencies. The respective roles of generalists and specialists in the central offices of the city health administration and the community health centers would have to be carefully worked out. The difficult task of decentralization challenges even the most able administrator, but it too can be met.²⁸

The changing focus of medical care, both public and private, should speed up the development and extension of group practice all over the country. Again, such groups may be under public or private auspices—there is room for both. Solo practitioners can use these groups or community health centers for routine consultations, for continuing education, and for referral of difficult diagnostic and therapeutic problems. The nucleus of a community health center may well be made up of a group of practitioners, generalists, and specialists. The right attitude of mind of physicians working in the network of comprehensive health services is essential to their success. This attitude of mind was identified by Butterfield³⁷ as the first priority of the National Health Services in Great Britain as it reached its twentieth anniversary in 1968.

Comprehensive Planning

The age of planning is upon us and apparently is here to stay. The technology of planning is invading community health agencies in all their operations. Technology, as J. K. Galbraith

aply describes it,³⁸ is the systematic application of scientific or other organized knowledge to practical tasks.

It behooves health workers to acquire concepts of community health planning,³⁵ to understand its political elements, and to gain experience in the processes of project, program, and community planning. To do this requires knowledge and skills in the use of modern tools of administrative organization and management, e.g., operational decision-making, evaluation, and the latest technics of communication and coordination.

Health administrators have much to gain by learning more about the economics of health from economists, by persuading them to enter the field of health, by joining in economic studies of health systems. Few positive conclusions have as yet emerged from studies of health spending,³⁹ even those done on a world-wide basis. The time is ripe to bring experts from economics and health together in a partnership that offers great potentialities for putting our health industry on a sounder basis. We have much to gain by sharing knowledge and experience, by working on joint problems in health economics with our international colleagues.

Thus the stage is set through all types of planning—in the social, medical, environmental, and economic aspects—to create health systems coordinated under a national plan in the United States, responsive to the needs and desires of the people, one that is economically based and administratively sound. It remains to be seen how the principal actors, public and private, will perform. Should health leaders fail to accept additional responsibilities and prepare themselves for their new roles, other experts in the community stand ready in the wings, eager to take over the leads. This is the supreme challenge confronting health administrators in the changing world of tomorrow. Let them not re-

linquish control over their rightful domain.

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