

"New occasions teach new duties"

Using a quotation from James Russell Lowell's *The Present Crisis* as his theme and title, a Harvard professor of public health practice examines pertinent changes in social and health affairs. He assesses the effects of these trends on public health as a specialty of preventive medicine.

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TODAY we are all shaken by a rapid succession of changes which threaten to rip us loose from the very roots of our past. These roots are so comfortable and reassuring that we tend to overlook Marcus Aurelius' advice in his *Meditations* to "observe always that everything is the result of a change, and get used to thinking that there is nothing Nature loves so well as to change existing forms." It is not too difficult for us to accept the idea that our business in public health is to get others to change their behavior to make for healthier living. But when we ourselves are called upon to change, the idea is less acceptable.

Two major types of changes with which public health must deal are going on in the modern world: "public" changes and "health" changes. Our professional training helps us most with the health changes. Our knowledge of biology, chemistry, and physics and their medical sub-

specialties helps us find and use the proper immunizing agents to prevent disease, the right kinds of food to eat, the best sprays to kill mosquitoes, and so on. We can usually adjust rather readily to rapid changes demanded as a result of research which provides better tools with which to combat health problems.

The public changes that are so important in public health work are in many respects more difficult for us to appreciate. Most of us have limited backgrounds in the basic social sciences—sociology, anthropology, psychology, economics, and political science—that might help us understand better the people with whom we must work. Yet public changes are often of even greater importance than health changes. For example, resistance to adoption of practices proven desirable by health research may completely nullify the usefulness of the research. This is illustrated by the situation in an Indian jute mill where malaria seriously hampered production. Although the mill operators provided antimalarial drugs without charge, only 15 percent of the employees took advantage of the opportunity to improve their health. Studies are now in progress by social anthropologists and physicians to learn the reasons behind this failure.

More and more we are beginning to recognize the importance of the public changes in our work and are striving to make up for our deficiencies in training in these areas of knowledge. We still have a long way to go. We also have prejudices to overcome, which tend to make us place higher values on the results of

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health research than on those of social research. This appraisal may have been justifiable in the past, but it is likely to be increasingly less so in the future. Social science is finding the scientific method quite as useful as natural science has found it.

Health Changes

We still need to remind ourselves constantly that the increase of man's life span by 18 years in half a century has more profound medical, economic, and social implications than such developments as atomic energy, air transportation, and modern communication. Increased life expectancy at birth is giving this country a population with an increasing proportion of aged persons and is causing us to retool from programs for controlling communicable disease to plans for dealing with degenerative disease and long-term illness.

As health changes have developed, it has become possible for the preventive medicine attack to shift successively from emphasis on the environment, in the sanitation phase, to emphasis on the agents of disease, in the bacteriological phase, to emphasis on the human host, in our present stage of development.

We are also changing some of our concepts about certain diseases, and we are finding that communicable disease control and sanitation may not have entirely unmixed blessings. Ultramodern sanitation, for example, may increase susceptibility to poliomyelitis. Studies in certain African areas have indicated that a high percentage of the local population is immune to poliomyelitis, and that clinical cases of poliomyelitis are extremely rare. Presumably the people there are more or less immunizing themselves by drinking diluted sewage containing polio virus. Prevention of German measles in girls may lead to their later developing the disease as pregnant women and giving birth to children with congenital deformities. As antibiotics control bacterial diseases and more and more new viruses are found, one begins to wonder whether the viruses simply take over when the bacteria are brought under control. As more lives among prematurely born infants are saved and retrolental fibroplasia increases among those saved, one again begins to wonder

a bit. Puerto Rico offers another illustration of how progress may create new problems. Following the introduction of sanitation and communicable disease control measures, the population in this island increased so rapidly as to introduce malnutrition.

These illustrations suggest that unilateral public health must give way to a multilateral approach. We must think seriously and consistently of calling in those who should be our teammates working in agriculture, industry, and education to produce better balance in program and result.

Five Levels of Prevention

Greater knowledge of the natural history of disease opens up new possibilities for a unified attack by all members of the health team. Natural history in this sense is "the process of departure from health, beginning with the very first forces that inaugurate it in the environment or elsewhere, through the resulting changes that take place in man, and until equilibrium is reached or defect, disability, or death ensues" (1). Increasing knowledge of this natural history makes it possible to attack the environment, the agent, or the host at strategic points. Thus, prevention in the broad sense of the word may be achieved at five possible levels: (a) health promotion, (b) specific protection, (c) early recognition and prompt treatment, (d) disability limitation, and (e) rehabilitation, listed in the order in which they become applicable in the stages of the disease process.

Health promotion is directed not at a particular disease or disorder but toward furthering general health and well-being. Attention to nutrition during periods of growth and development and physiologic changes, encouragement of optimal personality development, application of genetic knowledge, health counseling of various types, and health education are examples of activities at this level of prevention. Involving much more than what health workers can do unaided, health promotion includes activities of educators, agricultural specialists, economists, and industrialists.

Specific protection intercepts the causes of disorder before they involve man. Activities at this level, which include immunization

against communicable disease, prevention of dental caries, and control of insect disease vectors, have long been characteristic of health departments and certain voluntary health agencies.

Early recognition and prompt treatment is effective in preventing the spread of disease to others if the disease is a communicable one; in curing or arresting the disease process if specific treatment is available; in preventing complications or sequelae; and in shortening the period of disability. Case finding in the early stages is the foundation at this level.

Disability limitation involves preventing or delaying the consequences of clinically advanced or noncurable disease. As our knowledge of natural history of various disease processes increases, we may anticipate less and less activity at this level of prevention, though there will obviously always be need for it in truly degenerative diseases. This and the preceding level of prevention are those at which work of private practitioners and hospitals has been largely concentrated in the past.

Rehabilitation is concerned with preventing complete disability and economic dependence. It may begin while the disease process continues; it becomes the major method of attack when the disease is stationary. Only recently have we begun to develop activities at this level of prevention, though in some other countries rehabilitation is in a relatively advanced stage of development.

If we keep in mind the natural history of disease and these five levels of prevention, it is apparent that there are opportunities in preventive medicine for all those in the health field, whether they be in health departments or other health agencies, private practice, or hospitals, and for workers in education, agriculture, and industry as well. Each has a part to play; each can contribute to the total attack against disease and toward the promotion of health.

Viewed in this light, public health as organized community action is a part of preventive medicine. The public health agency may be either voluntary or governmental. Private practice also plays a very important part in preventive medicine, and as preventive medicine concentrates more and more upon the host, the

opportunities for private practitioners to practice broad preventive medicine increase. In the future, health departments and other health agencies will likely contribute more and more to private practitioners' work with individual patients and their families. Thus continuity of care by a single practitioner may be more possible than it has been in the past. The attitudes of people are usually favorable to those who help them in illness, and there may well be a carryover value when preventive services are tendered, making these services more acceptable.

Hospitals in the future will have a broadened concept of their place in the community, and their activities will be at all five levels of prevention. Rather than concentrating principally on early diagnosis, prompt treatment, and disability limitation, they may be expected to give increased attention to rehabilitation. As more patients are treated "vertically" rather than "horizontally," health promotion and specific protection also will be employed more widely by hospitals.

Increased knowledge of health problems has necessitated specialization. There is simply too much to know for a single individual to be an expert in all fields. Valuable though it is in many respects, this specialization makes it difficult for the layman to find his way about among the numerous specialized practitioners and health agencies.

Public Changes

The rapid changes in social organization have necessitated such rapid adjustments as to impose severe strains on our adaptive mechanisms. A good deal of evidence indicates that these problems of adaptation have contributed materially to the increased incidence of psychosomatic disorders and mental ill health generally. The troubled political situation of the world today casts its shadow over us all. Industrialization with its mass production favors urbanization. Mechanization, even on the farm, has greatly changed living conditions. The increased leisure time now available to most of the population has created new wants as yet only poorly met. Improved living standards and full employment have lessened the old insecurities of laboring groups.

Large-scale organizations, both governmental and private, tend to create a sense of powerlessness in the individual. The individual, however, needs to participate; his capacity for participation must, therefore, be cultivated to a degree never before necessary.

An unprecedented geographic and social mobility tends to break down the ties of neighborhoods and fixed communities as well as ties with family beyond the immediate husband-wife-child complex. Children are no longer regarded as producers, but as consumers. In the small family each member tends to cherish more fully the others. There is opportunity not only for optimal physical and mental development, but knowledge of the means towards maximum personality realization is becoming more widespread. Parenthood is getting to be a profession; the child is seen more and more as a product of his home and his environment.

Equality between the sexes is being approached and many fields of endeavor are now open to women. One result of this change is that the nursing profession no longer can count upon a vast supply of recruits. Other pursuits, more remunerative and less exacting, have first call.

Social attitudes are changing, and more emphasis is being placed on the dignity and worth of the individual. This has led to diminishing discrimination and the broad acceptance of social security as a right. The period of laissez-faire economy has passed, and varying degrees of governmental control have been imposed with varying degrees of acceptance. The leveling of incomes after taxes has greatly reduced individual large-scale philanthropy, with profound effects upon voluntary agencies.

Technical Assistance Programs

With all these changes, positive and negative in effect, economic development has proceeded at virtually a geometric rate in the United States so that this country is pulling further and further ahead of its nearest rivals. To assist in holding the free world together, an international program of technical assistance has been developed to help people in underdeveloped areas help themselves. We are finding that to

do this effectively we cannot impose American ways on these people but must understand the people, their culture, and their problems.

Even in transferring strictly technical health knowledge and practices and in using modern health supplies and equipment, we must understand the basic scientific principles involved so that modification can be made to meet local needs. We must discover what are the frills and what are the essentials. Then the essentials must be made available with a minimum amount of cultural shock to the people who want help. The privy, essentially a hole in the ground, is an example. It is unimportant for its public health purpose whether the privy has a seat or whether the squatting position is used in defecation. Yet many a privy has gone unused simply because the American "sitting" model was imposed on people without taking time to discover their "squatting" habits.

The help we give does not fill a vacuum: It must replace something that is already there. As an illustration, two articles on health appeared recently on a single page of the New York Times. One related to a group of scientists, among them several Nobel prize winners, who were setting off to Asia to spread modern health knowledge. The other, taking up twice as much space, described the important place which witch doctors still play in Madagascar. These Nobel prize winners must compete with such witch doctors before they may have their own wares accepted.

In these technical assistance programs it is particularly necessary to develop teamwork between health workers and those who work in agriculture, industry, and education. Public health can be an admirable spearhead for this team since it has acceptable ends to offer, shows tangible results, and can, through training local people, make them relatively self-sufficient.

Public Changes in Health Fields

In considering the effects of social changes in the health fields, we are beginning to see integration and coordination as answers to the problems of specialization and the need for unity of health services. Medical prepayment plans reduce the need for charity, and, if they are comprehensive, promote early diagnosis. Group

practice provides the ultimate skills of medicine in one place. Health centers enable health departments and voluntary health and welfare agencies to join in providing broad services to a neighborhood. Hospital and health department combinations make for economy and efficiency. Extension of hospital services to include home care reduces heavy hospital expenses and supplements the resources of the home. All of these services tied together in regional organizations promote smooth and economical functioning. Many different types of specialists are beginning to work together as teammates, and auxiliary workers are being recruited for less skilled jobs.

Overall health planning is receiving increased interest as manifested by the rapid growth of health councils, many of them linked with community councils in recognition of the interdependence of health and welfare services.

Through broad health education the public has new attitudes about disease. Scientific research has blossomed into a major industry, and the public is beginning to feel that research can solve all problems. Nutrition is recognized as valuable, and alcoholism is coming to be considered a disease rather than a social stigma.

As has happened in nearly all fields of science, social scientists are finding that as they become more experimental, their theoretical assumptions require rethinking. They are finding in the health field a wealth of opportunity for profitable investigation, and in many instances they are providing invaluable assistance to health workers. We cannot afford to ignore these important sources of assistance in health work. The all-important family unit, though retaining its primary functions of child-rearing, companionship, and the regulation of sexual conduct, has had split off from it some of its former economic and protective functions. It no longer performs the religious, recreational, and educational tasks that it once did. Many of these are now entrusted, to an increasing extent, to community agencies of one kind or another.

Meaning of Changes to Public Health

What do all of these changes mean to us who work in public health?

They mean that we need a great deal more research to be able to translate the findings of biological investigation into social application. When we meet a health problem, we must recognize that two kinds of diagnosis and treatment are necessary. We must understand and deal with the health problem. We must also understand and treat the social or public part of the situation. Our pharmacopeia in both fields must be strong. It is no longer sufficient to prescribe drugs and neglect the social factors in a given case.

These changes mean that we must enlist the support of new members of the health team. "The health team cannot be a closed circle of in-facing initiates with backs to the outside world; rather, it must be an open circle ready to welcome new workers and able to expand as new areas of useful cooperation are discovered" (2). The place of the public health social worker is becoming obvious, and there are many important functions which the various types of social scientists can perform as health team members.

We ourselves must become real people with well-adjusted lives motivated by high purpose if we are to achieve real success. The joy that comes by doing our jobs will increase as we understand them better. A major part of this understanding will need to come to us through broader knowledge of human relations and through deeper dedication to our work. We must understand our own assignments and those of our teammates as well. Our services must be made available to the family with a minimum of friction and lost motion. Overlapping and duplicating activities can no longer be tolerated. We must seek constantly to develop arrangements which the consumer can readily understand for providing health services. If there are difficulties in administration, they must be concentrated and handled centrally. We should not expect the individual patient to deal with the maze of organizations and services the modern community provides. We must accept the responsibility, as servants of the people, of working out effectively and economically our administrative problems and the problems of agency relationships.

We must do a better job of training health workers to perform their task adequately in

international relations. Our country can no longer maintain its former ostrichlike attitude; we are not self-sufficient. Our ways are not necessarily the best ways for all people. As we work with other peoples, we must adapt ourselves and our technical knowledge to their local systems and needs. We cannot be autocratic about our democracy.

With all the changes that are in the air, we as practitioners of public health have a deep responsibility and an unprecedented opportunity to serve the people. But it is only with broadest wisdom and deepest humility that we

can meet our new challenges successfully. Or in the words of Lowell:

"New occasions teach new duties; Time makes
ancient good uncouth;
They must upward still, and onward, who would
keep abreast of Truth; . . ."

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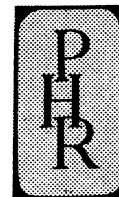
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To the Professional Public Health Worker

You, like the specialist in medical and other fields of science, know how important it is to be informed on current knowledge in your specialty. And, for the most part, you rely on the first-hand availability of the leading journals and periodicals in your specialty.

But as more becomes known of public health practice and research, the more complex this science becomes. There comes too the need to relate the activities of all its component disciplines—the members of the family of public health—one to the other, and each to the whole. And for each specialist there is a need to read regularly the journals devoted to unifying the family of public health. *Public Health Reports* is such a journal.

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