

Public Health in Ohio

The effect of culture and society upon public health and the pattern of increased pace and rapid growth of activities in public health work are two related subjects covered at the May 19, 1960, meeting of the Ohio Public Health Association. We present two papers on these topics, one showing where and how culture and society and public health meet; the other pointing up today's challenges to public health and how they may be faced.

Growth Pattern in Health Work

brief The increased pace and rapid growth of public health activities in Ohio follow a pattern which can be divided into three categories: a new and vigorous attack on some old problems which have long been neglected; an attack on some new aspects of old problems; and an attack on totally new problems.

In the first category is the new public health program for alcoholism. There are an estimated 200,000 alcoholics in Ohio today who, together with their families, may represent as high as 10 percent of the total population. Alcoholics can be helped. Previous programs for the most part were geared to helping those in the final stages of their illness after personal disintegration and family disruption had be-

come critical. The goal of our present program encompasses the preventive aspects of reaching and helping them in the early stages.

Expansion of our chronic disease and geriatrics program also comes under this category. We have been concentrating on the maladies of the younger years. Ironically, as we become more successful in these endeavors our problem of the aged increases. There is need to step up our efforts against the chronic diseases, and we should continue them in the hope that the result will compare favorably with our success in the field of communicable diseases.

In neglected older problems toward which new programs are geared might be included the licensing and inspection of nursing homes, recently transferred to the Ohio State Department of Health from other departments, and the inspection and licensing of general hospitals.

In the second category, new aspects of old problems, would fall, for example, "hot strains"

Based on a paper by Ralph E. Dwork, M.D., M.P.H., director of the Ohio Department of Health.

of staphylococcal infection. Because of the impressive early effects of the antibiotics on pathogenic bacteria, we let down our guard and became too complacent. Now realizing some limitations of these medications, we are gaining new respect for established antiseptic techniques.

There are in Ohio sources of some as yet unclassified mycobacteria which cause a tuberculosis-like disease and are resistant to the chemotherapy that is effective with the tubercle bacillus. Though not serious enough for alarm, the infection is of sufficient importance for us to be on the alert. We are concentrating on improved laboratory and diagnostic techniques which will permit better evaluation of the situation and assure preventive steps against the disease.

The old question of food sanitation appears in a new guise in food vending machines. The State's new program for their licensing and inspection uses much the same methods as formerly except that we now have to probe into the machines rather than under counters and into backrooms.

Many of the problems in the third category are man made, nonexistent or unrecognized a few years ago: air pollution, radiation, and the explosive spreading of urban populations into small units scattered across the countryside.

The pouring of all kinds of material into the atmosphere is making a chemical monstrosity of the air we breathe. Part of our attack against this hazard is an elaborate new laboratory in the State health department which will be available to assist local areas in air pollution surveys. State technicians will help train local personnel, thereby enabling them to continue the observations. Regulation of air pollution is primarily a local activity in which the State can assist.

Supervision of the diagnostic, therapeutic, and industrial use of radium and X-ray is relatively new in the field of public health. It is estimated there are 10,000 medical and dental users of X-rays in Ohio, at least 250 industrial and medical users of radioisotopes, and approximately 200 industrial users of X-ray and other radiation devices, not including AEC units and nuclear power reactors, which are expected to increase in number. To these have

been added the newer types of radiation hazards born of the atomic age. This combination of the new and old has brought about the need for public health protective measures.

The health department of a neighboring State has 58 men assigned to its radiation program, and these could adequately inspect only 1,500 X-ray units a year. On that basis it would take more than 400 employees to check annually all units in Ohio. Obviously, this is impossible. We must look to local health departments to help us take on this new task and we, in turn, will help them to assist us.

Despite many advantages, the suburban spread has emerged as a challenge to public health. Food and water supply, sewers, and waste disposal are among the new aspects of environmental sanitation for which we are seeking a solution. Transportation and communication difficulties are added to those of medical care, emergency treatment, and clinical and hospital services, all of which are more easily solved in metropolitan areas.

Though the new suburban life undoubtedly provides an emotionally healthful one, enabling people as it does to get away from the polluted atmosphere, noise, traffic hazards, and other tribulations of urban living, public health departments must be on their toes to keep the scales favorably balanced and not let the advantages become lost under an accumulation of liabilities.

The responsibilities and activities in public health I have cited are by no means complete and inclusive, but only examples of the definite growth pattern. All of us in the public health field stand to gain by working together, and professional organizations such as our own Ohio Public Health Association give us individual and united strength for the new tasks ahead.

Culture, Society, and Health

brief Three general areas in which variables of society and culture and public health meet are disease and health; institutions, agencies, procedures, and personnel; and behavior, attitudes, and values (1).

Virtually all mass disease has social and cul-

tural correlates, that is, has to do in part with the way people behave, think, and adjust. Further, the means developed by society for the control of disease and promotion of health—as well as what people think and do about health and programs designed to promote public health—are profoundly immersed in social and cultural factors.

Each of these general areas is illustrated in the following examples.

Work Simplification

Local heart associations have sponsored classes to teach housewives with cardiovascular and other disabling conditions how to simplify their domestic work. The work-simplification principles were worked out by Mrs. Frank B. Gilbreth, wife of the co-author of "Cheaper by the Dozen." Several years ago, I was asked to help evaluate a series of such classes in the Boston area. The evaluation consisted of asking the women who had attended the classes, some weeks after the series had ended, what they thought of the classes, whether they had applied any of the principles of work simplification; if so, with what results, and if not, why not. The findings gained from interviews were extremely variable. A few women had apparently gained and applied a good deal; they had modified many operations in kitchen, laundry, and general housekeeping. Some women had apparently gained nothing; at any rate, they had not altered their domestic routines appreciably. Others fell in-between, but mainly toward the extreme of the least gain. It seemed, on first analysis, that the highly uneven and, on the whole, not very encouraging results of the classes might be due simply to fortuitous individual differences.

Whether or not this conclusion is warranted, these uneven results indicate that studies of the cultural patterning and meaning of housework are needed before such teaching can be maximally effective. For instance, at what points for women of different backgrounds do cleaning the kitchen, doing laundry, making beds, pre-

paring various foods, and the like, begin and end? What variations occur in "cut-off" points between one activity and another? By what systems of domestic priorities do women of different groups abide? What is housework, as viewed by different groups?

Staphylococcal Infections

Staphylococcal infection in hospitals has become important as a public health matter. Tibbitts, Demerath, and Wessen (2) point out that there are some well-known and some overlooked social and cultural correlates of hospital-borne staphylococcal infection.

It is known that the staphylococcus is normal to the flora of man and is found on the skin, in nasopharyngeal passages, and in the gastrointestinal tract. It appears that staphylococcus may be transmissible by ventilation systems as well as by personal contact. Only under certain circumstances, possibly host determined, is it pathogenic. Many strains have been identified, most of which can produce disease when the host's defenses are lowered. Some strains have acquired resistance to antibiotics; these strains are isolated most frequently in outbreaks. The organism is characterized by a very large gene pool and hence is highly variable biochemically. New variants constantly are emerging.

The widespread distribution of the staphylococcal organism and the fact that not all those exposed to it acquire the disease invite comparison with the tubercle bacillus, which is also ubiquitous but does not have the same effect on all those exposed to it.

Here is an opportunity for sociologists to collaborate with epidemiologists. Pertinent social variables include demographic characteristics of the affected population and incidence in the social space of family, community, or hospital, with consideration being given to positions, quality of the social relations, hygienic practices, and values and attitudes of individuals or social categories which are affected. Because of the ubiquitous character of the organism, it might be highly profitable to study within social groups differences between individuals who are and are not stricken, given common exposure, as nearly as this can be determined.

There is need to explore differing perceptions

Based on a paper by Edward Wellin, Ph.D., director, behavioral sciences activities, American Public Health Association.

of the staphylococcal problem between nurses and physicians, surgeons and nonsurgeons, and administrators, supervisors, and others in hospital organizations. These might pertain to the sources-of-control ideas, the kind of control measures considered and adopted by hospital administrators, and the likely sources and mechanisms of infection. It might be revealing to explore the relation to infection rates of structures of authority and influence or of the correspondence between formal and informal patterns of communication. The effectiveness of a hospital committee on infections could be studied in relation to the composition of the committee.

New Issues in Fluoridation

In 1945, the water of Newburgh, N.Y., was fluoridated and that of Kingston, N.Y., left unfluoridated. Ten years later, Dr. D. B. Ast and colleagues published definitive reports which demonstrated that all children through 16 years of age in Newburgh had remarkably lower DMF ratios than children of Kingston. Children exposed to fluoridated water from birth had almost 60 percent fewer decayed, missing, and filled teeth than their Kingston counterparts, and children who had been exposed to fluorides from age 6 had 40 percent fewer DMF teeth than the controls.

But Newburgh children varied among themselves in regard to DMF ratios. What accounted for this variation? Of course, we know that a series of individuals exposed to the same stimulus will vary in reaction to it. But the prior question is: Were they all equally exposed to the same stimulus? Although the tap-water in each Newburgh residence was presumably equally fluoridated, the question we cannot answer is whether all children got equal doses and equal frequencies of dosage of the fluoridated water. The likelihood is that just as people vary in other behaviors, they vary in patterns and frequencies of water intake.

Now consider the implications of another study. This was an investigation in Contra Costa County, Calif., carried out in 1953-54 and reported by Donald J. Galagan and colleagues in the June 1957 issue of *Public Health Reports*. They investigated the fluid intakes

generally and water intakes specifically of children from under 1 year to 10 years of age. The study sampled an entire year and its climatic changes. On water intake, measuring ounces of water per day per pound of body weight, the means for each sex and for age groups within each sex varied somewhat, but generally in an orderly way. The standard deviations, however, varied so much that there were obviously considerable differences in the range of water intakes. The mean intakes of all boys of one age compared with the means for other ages and with girls certainly told us something. But the mean is a measure of central tendency; it does not tell much about the spread. The spread, or standard deviation, was so great that it was obvious that some children were drinking more than the average amount of water for their ages and body weights, and others were drinking less.

Putting both studies together, that of Kingston-Newburgh on fluoridation experience and that of Contra Costa County on water intake by children, a new question is posed. Is there a relationship between variations in dental caries in a child population receiving fluoridated water and variations in water intake? In other words, if you lead the child to fluoridated water, are you sure that he will drink, and do you really know how much he will drink?

How much water, as distinct from fluids in which fluoridated water is not present, do children of different social classes, ages, and of each sex consume? Some communities have recently instituted fluoridation of water supplies and others will do so in the future. We need studies, particularly in these communities, which relate water-intake patterns to dental status following fluoridation. Social groups in the community differ in food habits, health attitudes, and other things; it would be rather surprising if they did not differ in regard to water intake.

REFERENCES

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- (2) Tibbitts, H. G., Demerath, N.J., and Wessen, A. F.: Sociology and staphylococcus. *Am. J. Sociol.* 65: 299-300, November 1959.