

Disease as a Way of Life

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IN all the recent talk about the "crisis" in medical care, a major concern—whether explicitly stated or merely implied—has been the disproportionate burden of disease borne by America's poor. The way in which to lift that burden, it has been generally assumed, is to provide more health services: better financing, more doctors, a greater application of technology. There can be no doubt that these services are necessary, nor that some form of national health insurance over and above the present system of Medicare is a matter of the utmost urgency. Yet in pressing for these goals we would do well to take a hard look at some of the assumptions behind the demand for better health services, lest in mistaking the true nature of the problem we lead ourselves to the wrong solution.

As Warren Winkelstein, Jr. has recently noted, there may in fact be good reason to dispute "the underlying belief among both the lay public and people in the technical professions that the quantity and quality of medical services are directly related to the health status of the population."^{*} As Winkelstein goes on to state, there is little evidence to support the assumption that the health of a population is primarily a function of its medical services, and much to contradict it.

To illustrate this contention, let us consider briefly the case of the

Navajo Indians, a poor and disease-ridden people that (beginning in 1955) was the object of study of the Navajo-Cornell Field Health Research Project. Working in close cooperation with the tribal leaders, the study group brought modern medical services to a part of the Navajo Indian reservation, providing a well-equipped ambulatory care facility, transportation, physicians and nurses, trained indigenous health aides, and access to hospital care. All of this was introduced into an extremely poor, non-literate environment, among people living in extended families in windowless one-room log-and-mud dwellings with dirt floors.

Both the Navajos and the study group were pleased with the day-to-day achievements of the technology and the delivery system that had been introduced into the reservation. Medical care—in the classical form of clinical physicians (a complete innovation for the Navajos when it was introduced)—was well received and utilized. "The system was set up with full community participation, and there was a mechanism for effective, continued community control."[†] And by objective criteria as well, quite apart from the issue of patient-satisfaction, the project had successes to report over the course of its five years of operation. Tuberculosis, a common problem among the Navajos, was sharply reduced, and, by the end of the study, so was the amount of significant ear infection among children.

But the really startling findings were on the negative side. Aside from the reduction in tuberculosis and ear infections, at the end of five years the investigators discerned no evidence of any real

change in the pattern or prevalence of disease. There was a possible slight diminution in the overall death rates, despite an infant mortality rate that persisted at three times the national average, but no reduction at all in the incidence of the diarrhea-pneumonia complex which remained the single greatest cause of illness and death among Navajo infants.

As the term "diarrhea-pneumonia complex" suggests, infants in the Navajo environment commonly suffered or died from a combination of respiratory and intestinal complaints that are not caused by any single bacterium or virus. Major contributing factors are malnutrition and poor sanitation. Nor, in general, are antibiotics helpful: the "normal" bacteria and viruses appear to get the upper hand and keep it. The disease, in other words, is in some sense a function of the way in which the Navajos lived and raised their infants. Thus, in general terms, the entire disease pattern of the tribe—unresponsive as much of it was to modern technology—could not be changed until basic changes took place in the tribe's way of life. In a social setting conducive to a particular pattern of disease, medical care alone—no matter how modern, well delivered, or technically complete—cannot be expected to lift the burden of sickness.

Our own past as a nation is further illustrative of this point. Everyone is aware of the profound changes that have occurred over the past two generations in the patterns of disease in America. Moreover, since the disappearance of the common infectious scourges of the past has been more or less

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* "Epidemiological Considerations Underlying the Allocation of Health and Disease Care Resources," *International Journal of Epidemiology*, Vol. 1, pp. 60-74, (1972).

† W. McDermott, K. Deuschle, and C. Barnett, "Health Care Experiment at Many Farms," *Science* 175, pp. 22-31 (1972).

simultaneous with the growth and development of modern scientific medicine and its technical wizardry, it is commonly believed that the dramatic improvement in the health of our society was brought about by the achievements of physicians and medical science. By and large, however, this is not true.

IN THE United States and other Western nations at the beginning of the 20th century the pattern of disease showed a high overall death rate (about 28 deaths per 1,000 population per year—the present rate is about 9 per 1,000 per year) with a certain monotony of cause: pneumonia and influenza, tuberculosis, typhoid fever, and the various dysenteries. Among infants the common killer was the same diarrhea-pneumonia complex we noted among the Navajos. Now, this high rate of mortality, as well as the specific pattern of diseases, was in part traceable directly to the urban social conditions brought on by the Industrial Revolution. Mass shifts of the rural poor into the cities had resulted in poverty, crowding, unbelievable filth, and poor sanitation, and had provided fertile ground for the transmission of disease. In the United States the problem was compounded by the continuous influx of poverty-stricken immigrants.

In 1900 the annual death rate from tuberculosis in the United States was 200 per 100,000. By 1960 the rate was 5 per 100,000. Throughout these sixty years the death rate fell rapidly and steadily, so that by the 1950's, when the first effective anti-tuberculosis drugs became available, the annual rate was *already* below 20 per 100,000. Prior to the advent of the new drugs, whatever treatment was available was frequently ineffective, and was restricted primarily to those who could afford it. It seems reasonable to speculate, then, in the absence of any clear evidence to the contrary, that the improvement in the mortality rates that took place before the 1950's was due in large part to improved living conditions, including better nutrition and diminished crowding. (It is also true of the infectious diseases like tuberculosis that

a falling rate promotes a further diminution in the disease, simply because the fewer the individuals carrying it, the lower the chances of contracting the disease through contact.)

As with tuberculosis, so with typhoid. After 1905 cases of typhoid fever became steadily less common in New York City, so that by the time effective drugs became available, typhoid was already a very rare disease. In years past it was usual to attribute the decrease to typhoid immunization, but we know now that the vaccine at best is not very effective; rather, the improvement can be traced to the introduction of good sanitation, to chlorination of the water supply, and to improvements in personal hygiene.

Perhaps the most gratifying change of all was the decrease in infant mortality during the early decades of this century in New York. By far the greater part of this decrease can be attributed to the sharp reduction in the diarrhea-pneumonia complex which "occurred before there were any antimicrobial drugs at all; neither were there any vaccines for this disease complex. . . . The fall occurred during a time in which biomedical science and technology could put no specific, no decisive therapies or preventatives into the hands of our clinical physicians."* Here again no single reason for the improvement can be pointed to, but it can be noted that it occurred during a period in which standards of living, education, nutrition, and sanitation all improved.

In like manner we are today protected against many food-borne diseases more by the pattern of our society than by anything specific we do for our health. It is the economics of modern food distribution, not considerations of health, which demands that foods be packaged and protected against spoilage or contamination. The rapid bankruptcy of a soup company that had produced a few cases of botulism illustrates dramatically how much more effectively health may be protected by the mass media than by food inspectors.

Of course, our present pattern of death and disease is not merely

what is left over after we have escaped the ravages of infectious diseases. Along with affluence and the good life has come a new pattern of disease: cancer, heart disease, stroke. Yet just as medical care played a minor role in reducing death rates in the past, so we should not expect that it alone will relieve us of our present burdens. In fact, after fifty years of consistent decline in the mortality rates, we witnessed in the 1960's a new upward trend, particularly among white males. The connection of a single personal habit—cigarette smoking—with one disease, lung cancer, seems proved. In the case of our worst epidemic, coronary heart disease, however, the chain of causations is more complex. Diet, level of activity, cigarette-smoking, stress, as well as other factors are so interrelated here that it is fair to say that a whole pattern of life is involved—the pattern characteristic of an affluent society. It would be naive to expect that medical science by itself can "cure" us of this condition. Even if present surgical techniques were perfected, the value of a new or revised heart in the body of a patient whose life pattern remains otherwise unchanged would not be very high.

THE general health of populations, then, is not directly dependent on medical services. Medical care did not get us out of our past troubles, and it will not get us out of our present ones. These propositions should be self-evident, yet the truth is that widespread confusion still remains on the subject. This is evidenced most strikingly by the continued use of infant mortality statistics in justification of proposed changes in the medical care structure.† Although the first year of life is the most hazardous single year in the human life span

* W. McDermott, "Environmental Factors Bearing on Medical Education in the Developing Countries," in *Manpower for the World's Health* (1966).

† See for example the introduction by S. Berki and A. Heston to "The Nation's Health: Some Issues," a special number of the *Annals of the American Academy of Political and Social Science*, 399 (1972).

until advanced old age, it is clearly more hazardous in some countries than in others. It is the apparent low showing of the United States in relation to a country like Sweden (24.8 infant deaths per 1,000 live births in the U.S. as against 14.2 in Sweden in 1963 [United Nations, 1967]) that distresses medical reformers. Mortality among black infants in America is almost twice as high as among whites; in certain New York ghettos infant mortality is three times the rate in more favored areas of the city.

The assumption is widespread that these differences reflect the inadequacy of the medical care provided in the United States as opposed to Sweden, or, within the United States, to the areas or groups with higher than average mortality rates. But this assumption does not stand up to close examination. The applicability here of the Navajo experiment cited above should be clear. For the Navajo Indians, the major factor determining the diarrheapneumonia complex and the high infant mortality was the pattern of tribal life, specifically the home environment; improved medical care did not, and could not alone, affect that pattern. (Nor, incidentally, could a program of what is generally called "health education," since health-associated learning would involve not merely the acquisition of facts but a change in world view. For example, teaching the importance of hand washing would require imparting not only some idea of germs, but also the basic belief that fate can be controlled—even supposing soap and water were universally available.)

As with the Navajo Indians, so with our society at large: the immediate environment is the crucial factor. This can be seen by examining infant mortality in relation to its influential determinants, such as age of mother, ed-

ucational level of mother and father, and family income—all regardless of race. In every instance the less well-educated and the poor carry the greatest burden of mortality. When a family income reaches \$5,000 per year, and the education of the parents runs through high school or beyond, the infant mortality rates become markedly lower. These findings hold true for whites and blacks although black mortality rates are consistently higher than those of whites.* Dr. M. Harvey Brenner of John Hopkins has recently concluded a study showing that periods of economic instability resulting in a rise in the unemployment rate have also been associated with a rise in the rate of infant mortality (New York Times, November 15, 1972). Further evidence of the direct bearing of social factors on infant mortality (and on other indices of health) is seen in California, where the Japanese and Chinese population consistently display better statistical indices of health than either whites or blacks, independent of income. Simply stated, disease is tied to the way of life.

POVERTY, at least when it comes to questions of health, means more than being without the money to purchase adequate medical care. Medicine, and medical care, will not by themselves eradicate the diseases of the poor. The British experience under the National Health Service, where access to physicians is open to all, is illustrative: the lowest social classes still bear more than their share of illness and disability. As one observer has remarked, "The National Health Service was conceived on the basis that, with the eradication of infection and deprivation of medical services, disease would become less common. This has not happened. Experience . . . reveals that over the years, the less affluent have continued to constitute a hos-

pital class. . . .† Another example is afforded by the experience of the American military, where the same high quality of medical care is received by all dependents irrespective of rank. A study has shown that perinatal mortality increases with the decreasing military rank of the husband (in order to exclude the effect of race, only whites were included in the study).**

In order to relieve the poor of their burden of disease, then, we must work to alleviate poverty itself, which is to say the way of life of the poor. The goal of a healthy society will not be reached simply by the infusion of massive amounts of money and other resources into the medical-care system, even if that system should be widely reorganized. It goes without saying that the poor, like everyone else, should be free to avail themselves of the best medical care this society can provide; access to the nation's medical services is a fundamental right. But it would be naive to suppose that medical services alone will relieve the poor of the burden of sickness which they disproportionately bear. It is the way we live that determines our health problems, and it is social change, not medical technology, that will help solve them. Without a clear understanding of what causes the disease patterns of a society and how those patterns are affected, even the best-intentioned health planning may go seriously awry.

* Department of Health, Education, and Welfare, National Center for Health Statistics, *Infant Mortality Rates: Socioeconomic Factors*, Series 22, No. 14 (1972).

† R. Kemp, "Morbidity and Social Class," in *The Lancet*, Vol. 1, No. 7503, pp. 1316-18 (1967).

** B. Hild, R. Stallones, and W. Reynolds, "The Social Class Gradient of Perinatal Mortality in Dependents of Military Personnel," *American Journal of Epidemiology* 83, pp. 481-88 (1966).

