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Editorial

Determinants of Worldwide Health

On January 23, 1992, the first Stallones Memorial Lecture, "Health and the Environment in the 1990s," was delivered by Sir Richard Doll at the University of Texas School of Public Health in Houston, Texas. As Doll indicated in his opening remarks, Reuel Stallones (Stony, to all who knew him) was a remarkable person, possessing a zest for life, a caustic wit, and a frankness that gained him wide respect among his peers. He came into public health, as so many have, through medical training and service in the military. He was educated at Western Reserve in the Army training program and served as a volunteer battalion surgeon to a paratroop unit in Korea. After Korea (he had decided on a military career), he was sent by the Army to the School of Public Health of the University of California to satisfy the requirements for specialty certification in preventive medicine. There he came under the influence of scientist-epidemiologists such as Charles E. Smith, William C. Reeves, and K. F. Meyer. After receiving the master of public health degree, he returned to the Army serving from 1952 to 1956 as preventive medicine officer at Camp Pickett and Fort Meade and briefly as assistant chief of the Epidemiology Department of the Walter Reed Army Institute for Research. During this period, he carried out important epidemiologic investigations of meningitis, respiratory diseases, and heat injury. In 1956, Stallones left the Army and returned to the University of California to join the faculty of the School of Public Health. Shortly thereafter, he turned his attention to the investigation of ischaemic heart disease and stroke and initiated a classic study of these conditions among persons of Japanese ancestry living in Japan, Hawaii, and the Bay Area of California.

The clarity and incisiveness of Stony's thinking made him an outstanding teacher and led to his appointment to many national scientific committees. However, as Doll pointed out, it was his leadership of a new school of public health at the University of Texas at Houston, that earned him his place among the most outstanding leaders of American public health.

As Sir Richard stated in his lecture, Stony set his mark on the school in three ways. First, he required each student to be responsible for his or her own education. "The school is planned" he wrote "to be an appropriate environment within which you may pursue this end. The faculty constitutes one of the resources available to you for this purpose." Second, he avowed that no generally accepted opinion on anything be allowed to go unchallenged. Third, he maintained that the objective of public health was to see to it that all people, regardless of the circumstances of their birth or subsequent condition, should have an equal opportunity for survival, education, and health.

Doll chose to commemorate Stony's memory by a discussion of health and the environment. As he put it, "the subject had to be one that was big enough in scope to reflect his concern for medical and social issues of public importance and controversial enough for him to have thought the issues worth discussion." There is little doubt that the subject Doll chose met both criteria.

Using mortality statistics from countries characterized by various degrees of industrialization and differing types of economies, Doll demonstrates very substantial differences with respect to total

Editor's Note. See related article by Doll on p 933 of this issue.

and cause-specific mortality rates within countries, between countries, and over time. Excluded from consideration, I believe unnecessarily, are causes primarily due to factors which, presumably, can be controlled by individual choice, i.e., smoking and diet. Doll then associates a variety of environmental factors to these mortality differences pointing out where the associations are well established and where evidence is less rigorous. From these analyses he concludes that the major factors influencing health worldwide are the "complex effect of human activities on the world's climate and resources." Doll singles out three activities as particularly hazardous: (1) pollution of the atmosphere by "greenhouse" gases, which, over the next several decades, are likely to result in significant global warming with major effects on climate and geography and, consequently, on the occurrence of disease; (2) the impact of worldwide population growth, which, at present rates will produce a population of 10 to 12 billion people within the next century—twice the estimated carrying capacity of the earth even if "we all had a vegetarian diet and shared our food equally"; and (3) poverty, which is always associated with ill health and disease. Although some might wish to add certain other hazardous activities to this short list, I doubt many epidemiologists would disagree fundamentally with Doll's selection.

If the three P's—pollution, population, and poverty—are principal determinants of health worldwide, it becomes important to examine our nation's international policies on these issues. With regard to greenhouse gases, as of this writing, the US government has not yet indicated whether it will participate in an upcoming international conference designed to adopt an agreement on limiting such emissions. Rather, the US government has said that European proposals for emission limits are more stringent than it could agree to. Clearly, without United States participation, any international effort to control greenhouse gas emissions is likely to fall far short of its desired objectives, or indeed, to fail.

With regard to population control, the United States has consistently budgeted substantial amounts of money for international assistance to family planning activities, in some years more than a quarter of a billion dollars. However, since 1984, these funds have been restricted to countries that do not sanction abortion as an option for birth control. Thus many important countries such as India and the Peoples Republic of China are no longer eligible to receive US aid. Furthermore, this policy precludes assistance to the United Nations Population Fund and the International Planned Parenthood Federation, agencies that play a major role in shaping international population policies. Again, if the United States does not fully participate, any international effort to control population growth is likely to be unsuccessful, and the United States lets go by an opportunity to provide technical and policy leadership.

With respect to worldwide poverty, the issues are more complicated. Poverty is linked to issues of population growth which are influenced by the policies just discussed. However, the United States has never explicitly included the elimination of poverty as a basic tenet of its foreign policy or foreign aid efforts. From the end of World War II until very recently, these policies have been dictated largely by Cold War considerations. Participation in the World Bank and International Monetary Fund is arguably designed to bolster the economies of developing nations. Frequently, however, economic development is accompanied by increased disparity between the rich and poor segments of the population. The United States provides a good example of this disparity. At least 35 million people, or approximately 15% of the US population, are classified, on the basis of family income, as living below the poverty line. Various studies have shown that the mortality rates for people with incomes below the (arbitrary) poverty line are higher by 75% to 135%, depending on age and sex, than for those in high income brackets. Most economists would agree that more than half of the world's population lives in poverty, i.e., without adequate food, housing, or means of acquiring such basic necessities as education or medical care; and this proportion of people living in poverty appears to be increasing. Clearly, a massive international effort would be required to make an impact on this situation. By defining poverty as a part of the ecology of health, a new beginning may be facilitated.

There is a certain poignancy in choosing the subject of health and the environment for discussion at this time because 1992 marks the 150th anniversary of the publication by England's "Poor Law Commission of An Inquiry into the Sanitary Condition of the Labouring Population of Great Britain" (the "Chadwick Report"). Whether one views this work as an expression of Jeremy Bentham's philosophy of utilitarianism, which stated that society should be organized for the "greatest happiness of the greatest numbers," or as a more cynical prescription for enhancing the efficiency of the capitalistic enterprise, this "inquiry" stands as a fundamental document of public health. Its ecological analyses provided the basis for far-reaching recommendations for environmental sanitation, and its influence on public policy was international. Basically, it defined public health as a societal rather than an individual problem. However, at that time, in 1842, the problems were largely seen as engineering problems. Gradually, and not without heated controversy, it has become apparent that the health and disease patterns of populations are determined by a combination of social forces and environmental factors. It is to these broader issues that Doll has drawn our attention.

The prospect of dealing effectively with the three P's is, indeed, daunting. Furthermore, the world situation is complicated by numerous wars, droughts, and famines. However, failure to deal effectively with the three P's may jeopardize the survival of the human race. Brock Chisholm, the first secretary-general of the World Health Organization, frequently reminded audiences that no species had succeeded in permanent survival and that the challenge to the human species was to achieve a successful adaptation to its environment. Sir Richard Doll has reminded us that the public health movement must continuously rededicate itself to these issues. I am sure that Reuel Stallones would emphatically affirm this position if he were alive today. □

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