

**D R A F T**

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18 October 2001**

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**PERSPECTIVES ON GLOBAL HEALTH  
(Atlanta, Georgia)\*\***

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First, let me thank Dr. Koplan for the invitation to give this lecture dedicated to Dr. Joseph Mountin. One cannot read Dr. Mountin's work and resist using the term visionary. He was clearly committed to excellence and showed this not only in his work in creating the centers, that were the forerunner of this institution, but in his writings on such things as the evaluation of sanitary services. Dr. Mountin's focus was essentially national, perhaps even more local, and he saw much to be gained from excellence in sanitary services devoted to the control of communicable diseases at that level. It is not clear to me that he saw any mandate for his centers of excellence in global health, because that was not the line of thinking that informed discussion or debate on measures for caring for the public's health in his day.

But I am sure that, visionary that he was, he would have rapidly bought the argument that there can no longer be local security in health if attention is not paid to the wider dimension of global health, and as a corollary, local health has to consider the global dimension. Global health is not an abstraction: I refer to the health status of the world's people. Dr. Mountin, once convinced of the need for global action, would have looked favorably on the extent to which his centers of excellence had had an impact on global health. He would have appreciated being remembered in October –the month in which the last case of smallpox was seen. I am certain that he would have enjoyed the stories that are now part of the historical lore of these Centers for Diseases Control and Prevention that will be told and retold for generations to come -stories of the role that the CDC played in one of the great triumphs of mankind- the eradication of smallpox. He would have agonized as well, with his public health children at how one of man's greatest achievements in any field is now being threatened because of the possibility that that very triumph could become part of a scenario in which agents of terror figure prominently.

I have no doubt that Dr. Mountin would have approved of your partnerships with organizations such as the Pan American Health Organization (PAHO), and be

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\* Pan American Health Organization, Pan American Sanitary Bureau, Regional Office for the Americas of the World Health Organization.

\*\* Presented at the Centers for Disease Control and Prevention (CDC) for the 22<sup>nd</sup> Annual Joseph W. Mountin Lecture *Perspectives on Global Health*. 18 October 2001, Atlanta, Georgia.

sympathetic to my effort to examine some perspectives on global health through the prism of experience in the countries of the Americas.

The three main challenges to there being optimal global health, are the burden of excess mortality and morbidity that weighs most heavily on the poor; the ..... But I believe that it is the unequal disease burden that represents the most serious problem that prevents the world from being optimally healthy. The challenge is to overcome, at a global level, those barriers to having all the world's people achieve part, if not all, the health advances that we know to be humanly possible.

Although, it is entertaining in other contexts to see the world as a single stage, the fact is that there has been, and will always be, divisions of one sort or another, and the most relevant for us is the division into nation states. I will, therefore, begin by positing that examination of some national achievements in health shows us what can be achieved globally. The life expectancy in the USA was XX years in 1900 and we have seen an increase of ZZ years over the last century. This has been a remarkable achievement, but we can see similar advances in countries not as well endowed economically as the USA. Life expectancy in my own country, Barbados was XX in 1900 and increased to ZZZ in 2000. Thus, it is possible to have health improvement under markedly different circumstances.

The determinants of health and of these improvements have been well established. If we focus on population health, we can propose that it is determined essentially by the social and physical environment and by the health services. Changes in these determinants that will improve population health, have traditionally been the result of national effort. We can point to improvement in the economic and social advance that has characterized the two countries mentioned. However, it would be fair to say that there has not always been the enthusiasm for public health services that would have played their part in the improvement. Public health services are, by definition, now the responsibility of the state, but there were often serious obstacles to the state assuming this role. For example, Starr points out in his "Social Transformation of American Medicine" the resistance by individual medical practitioners ceding to the state responsibility and action in areas that are typically public health.

The possibility of establishing and maintaining policies that will strengthen public health depends on the outcome of many social and political forces. For success to be assured, three factors must be considered. These are the degree of centralization of the state; the presence of active social and political movements; and the presence of a "culturally credible construction of risk to health." In highly decentralized states that are more open to the influence of external actors that influence policy design, it is more difficult to establish and maintain an effective public health system. In the decentralized state, there is more susceptibility to the risk to the individual and less of an appreciation of the need to act to avoid or eliminate risk to the population as a whole. The converse is true for the more highly centralized state.

Perhaps the classic example of the active social and political movement was the work of Edwin Chadwick who described the unsanitary conditions of the poor and established the relation to inadequate water supply, poor housing, poor solid waste removal and high mortality rates, and low life expectancy. His report and the political movement that he could engender led to the historic Public Health Act of 1848 and the establishment of a Central Board of Health, thus indicating clearly the role of the state in public health matters. You have a similar experience in the USA in the work of Lemuel Shattuck. I would cite the riots in Barbados in the 1930s that were the manifestation of the poor social conditions as being the movement that led to the attention to health matters and the eventual establishment of a strong public health movement. There are modern examples of strong social movements leading to policy change in the case of Mothers Against Drunk Driving.

But even in ideal conditions, there are still some interventions that the state may or should undertake to improve population health. CDC has described ten great achievements in public health in this country that were undoubtedly partly responsible for the health improvement. These are:

- Vaccination
- Motor-vehicle safety
- Safer workplaces
- Control of infectious diseases
- Decline in deaths from coronary heart disease and stroke
- Safer and healthier foods
- Healthier mothers and babies
- Family planning
- Fluoridation of drinking water
- Recognition of tobacco use as a health hazard

Without, in any way diminishing the importance of the other achievements, I would propose that the control of infectious diseases and the methods used to ensure healthier mothers and babies, perhaps along with nutrition, would be the measures that contributed most to the improvement of health in the Americas as a whole in the past 100 years. These have different dimensions, but if we wish to examine the possibilities of improvement in national health, it would be useful to examine the ingredients of success in these achievements. I will examine vaccine-preventable diseases, drawing on our experience in the Americas.

Transmission of poliomyelitis was interrupted in the Americas 10 years ago, and there are good prospects that the same will occur in the world by the year 2005. Measles transmission has been interrupted in almost all of the countries of the Americas. Last year there were only just over 1,700 cases of measles in all the countries of the Americas, and 1,200 of these were in the island of Hispaniola. The remaining 500 in the rest of the Americas were mainly imported cases. As of 30 September, only 384 cases of measles had been reported in the Americas, which is less than half the number reported for the same period last year.

These are impressive public health achievements and it is worthwhile examining the reasons for the success. First, there is the availability of a proven technology that is essentially, though not entirely, supply driven. There has to be political commitment that manifests itself in the provision of funding. We reckon that 80% of the funding for polio eradication came from national budgets. Then, there must be effective partnerships. Although the national commitment is crucial, equally crucial is the international input through well coordinated partnerships, and we are proud of the role CDC has played and is playing in the partnerships that are vital for the success of our immunization programs. But these partnerships often turn around the commitment of institutions such as PAHO, WHO, UNICEF, and Rotary International, and the presence of dynamic leadership such as we are fortunate to have in the person of Dr. Ciro de Quadros in PAHO. The logistics are also crucial. I doubt that we would have been so successful in the Americas without the presence of the Vaccine Revolving Fund, which is a shining example of intercountry cooperation that has survived and grown over 20 years. One factor that is not given enough emphasis in considering the success of immunization efforts is the social environment. Poor social circumstances pose difficulties, but are not a major impediment to the success of supply driven programs that have a proven effective technology, are technically feasible, financially viable and socially desirable. Our recent experience in Haiti showed that even in the poorest country in the Americas with deplorable social conditions, it was possible to immunize over 90% of a target population in a campaign against poliomyelitis. With reference to political commitment, the government of Haiti contributed some 24% of the 4.8 million US dollars required for the campaign.

But there are other areas in which there is gross inequality in terms of burden of disease and in which the successes mentioned above are far from being realized. The classic two diseases are tuberculosis and HIV/AIDS, and perhaps I should add malaria. The control of these diseases on a global scale is socially desirable, technologically feasible, and in the case of tuberculosis, financially viable and yet even in the Americas we are far from success. There are about 400,000 new cases in the Americas annually and 50,000 persons die from the disease. The major impediment lies predominantly in social barriers. These are diseases of the poor, and poverty is much more of an impediment here where there is need for sustained intervention over a period of time than is the case with vaccine-preventable diseases. Let no one believe that the political will is less here than in other areas, but the lack of financial resources and the social consequences of poverty mitigate against success. The perspectives for improved health are linked to the social and economic situation of large numbers of the world's people.

The actions necessary to improve national or global health will derive essentially from the interventions of states working either individually within their national borders, or in some collective framework in a manner that affects others beside themselves. There is no doubt that major advances in large countries such as Brazil or Mexico would, by definition, improve the health of the Americas as a whole, and we have seen the kinds of health-improving interventions that can be applied nationally without reference to other countries.

But it is becoming more evident that there can be compelling interest on the part of one country or a group of countries in the health status of another, and the causes of this extra-national interest may themselves drive genuine collective action. The motives for collective or extra-national action or concern are many. First, there is the appreciation of collective risk in the sense that ill health in one state implies a risk for another. This risk may be in terms of health or other facets of the life of the population. The drive for individual or collective extra-national action may, therefore, be based on legitimate self-interest. The Institute of Medicine in its study of the interest of the USA in the health of other countries, stated “.....”

The factor that is most important in determining the collective nature of the risk, or that the risk can be transferred from one place to another, is undoubtedly the phenomenon of globalization. This much abused word has many connotations, but is used here in the context in which Giddens uses it. I refer to the process by which distant events have affect or influence local phenomena. The information revolution is the factor that is most often cited as contributing to globalization. This revolution embraces the enhanced facility for acquiring, manipulating and transmitting data of all sorts and has effects beyond the financial circles, which have traditionally been considered as one of the areas primarily affected.

In the case of health, the information revolution has created the capacity for there to be a genuinely global surveillance system with tremendous potential benefit to all. But there is the dark side that shows itself in the spread of propaganda that leads to the adoption of the kinds of habits that are inimical to good health. The images glorifying the use of tobacco that are transmitted from the more developed to the less developed countries with facility do contribute to an increase in smoking.

The intensity of human interaction through travel favors the spread of disease. The great influenza epidemic of the early 1900s took months to travel from Asia to the USA. Today, the prospect of almost instantaneous transmission of disease is a real one. Travel increases steadily. The number of international travelers was estimated by the World Tourism Organization (WTO) to have increased by X% over the past X years, and places in which there is a real prospect of acquiring rare infections and were, almost by definition fairly inaccessible, are now within reach of large numbers of persons.

Food represents a prime vehicle for disease transmission and the recent furor over the export of beef from the United Kingdom to Europe with the prospect of transmitting Bovine Spongiform Encephalopathy (BSE) is only one example. The risk of transmitting disease through food figures prominently in the many discussions in the WTO over the application of the appropriateness of the various sanitary and phyto-sanitary regulations. The transmission of the West Nile virus to the eastern USA is another example of importation of disease through an avian vector.

The possibility of individual or collective extra-national health action for humanitarian reasons must not be discounted. The response to natural as well as man-made disasters, which have health implications, is often very generous, and the

magnitude of the response is often in relation to the perception of there being significant health damage.

When we examine the causes for this advance, there will be agreement that they have been essentially due to improvements in nutrition and public health. CDC has published the ten great public health achievements in the USA over the last century. Although all of them are important, I would give pride of place in accounting for the increase in life expectancy in both USA and Barbados to vaccination, control of infectious disease, and healthy mothers and babies.

If we are to seek to address these differences, these inequalities, it is useful to examine some areas in which there has been or is likely to be some leveling of the playing field and there are not excesses. Because vaccination figures so prominently as a public health achievement, we might examine how and why countries individually and collectively have achieved the miraculous successes that have been seen in this area. The history of smallpox is well known to you, but I would cite our experience here in the Americas in the field of poliomyelitis and measles as being relevant.

But I have no doubt that in spite of the present fears, Dr. Mountin would laud and applaud the focused efforts of CDC to follow and strengthen the tradition to be involved in global health. I will claim privilege and say that he would agree with me on the pertinence of the goals of CDC's Global Health Strategy and its five key areas:

- public health surveillance and response
- public health infrastructure and capacity building
- disease and injury prevention and control
- applied research for effective health policies
- exchange of information and lessons learned