

The United States in International Health

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INTRODUCTION

Over the course of the 20th century, the U.S. Government and U.S. scientists and medical workers have sustained an interest in the health of people in other parts of the world. This chap-

ter describes the reasons for U.S. participation in international health activities, and then discusses some of the important influences on those activities.

RATIONALE FOR U.S. INVOLVEMENT

In 1983, the United States spent more than \$14 billion in foreign aid to less developed countries. Although much of this aid went for defense, the United States increasingly has recognized the value of assisting developing countries with health services and building health infrastructure. The health budget of the U.S. Agency for International Development (AID) for 1983 was about \$123 million.

Five basic objectives of U.S. activities in international health were discussed in chapter 1. In general, the reasons for U.S. involvement in international health activities apply to the subset of tropical disease research. Briefly, the motives for U.S. involvement are:

- social and humanitarian;
- political;
- economic;
- medical, including protection of U.S. citizens against disease; and
- scientific.

The social and humanitarian motive is either convincing or not to an individual or a society, and is something that can shift in importance over time.

The medical motive, particularly to protect U.S. citizens, may be gaining strength, as it is becoming more apparent that opportunities for worldwide disease transmission have been and are continuing to increase. A still small but growing number of U.S. citizens are exposed to tropical diseases both abroad and at home (see ch. 1).

Furthermore, the opportunities for worldwide transmission of disease have recently been demonstrated by the emergence of acquired immunodeficiency syndrome (AIDS) as a public health problem in the United States, particularly among the gay community. There is convincing evidence that the syndrome originated in Africa and is present in the heterosexual community there. Its appearance in the United States probably came through migrations of Africans to Haiti, where vacationing Americans came in contact with it (362).

The political, economic, and scientific objectives of U.S. involvement in international health activities are discussed further below.

Political Objectives

One aim of all U.S. international aid is to win friends for the United States, and thus sustain the U.S. role as a world leader. Contributions in health, particularly toward primary health care, may also be one paving stone on the road to social harmony and political stability. Furthermore, there is an opportunity to raise grassroots support for the United States by having Americans participate at local levels in developing countries.

The United States is not the only country providing health aid. One of the more active countries in recent years has been Cuba. Cuban medical personnel are present in more than 25 countries (348). Certainly in relation to size, Cuba accords tropical medicine much greater importance than

does the United States. Cuba has virtually eliminated its classical tropical disease problems, so its present emphasis is not mainly a response to domestic needs, though surveillance to prevent reintroductions of once prevalent diseases is a priority.

In the summer of 1983, when issues concerning continued funding of the Gorgas Memorial Laboratory in Panama were addressed by OTA and the General Accounting Office, the role of Cuba was raised by an official of the U.S. State Department. It was feared that "closure of the Laboratory would give Cuba the opportunity to attract undue attention to its institute [the Cuban Institute of Tropical Medicine] which could be disadvantageous to the United States" (355). Going beyond the specific case of Gorgas, countries may be inclined to accept health aid from those best equipped and most willing to provide it.

Economic Objectives

There is intuitive appeal to the notion that improvement in the health of a population will lead to economic improvement. Solid proof of this intuition has been elusive, but some evidence now exists to support it. Belief in the concept that "health pays" is reflected in the actions of the World Bank over the past years.

The World Bank is an institution which, like commercial banks, requires that projects for which loans are given be economically viable. The Bank first began making loans for health components of development projects in 1975. The Bank's experience from 1975 through 1978—involvement in 70 health components of development projects in 44 countries—prompted the Bank in 1980 to begin lending directly for health projects.

The economic reasons for supporting health projects are set forth in the second edition of the World Bank's *Health: Sector Policy Paper* (412). The economic effects of ill health, on which the Bank bases its policy, are summarized below.

1. Reducing Availability of Labor. The effective labor force is reduced by premature death and by illness. The death of workers may not have a national impact on productivity in developing countries, where unemployment is high and there

is a steady supply of replacements. Premature death may, however, impose some costs on society when dependents are left.

Morbidity of workers, resulting in absenteeism, has a more direct effect on overall productivity. That effect has been measured in a few studies, though it is generally difficult to prove. Antimalarial programs in the Philippines and parts of Africa, and yaws control in Haiti have substantially reduced absenteeism (412).

2. Impairing Productivity of Labor. The ability of a sick worker is impaired not only in terms of physical capacity, but also in terms of the capacity to concentrate and think. The World Bank studied construction and rubber plantation workers in Indonesia, 85 percent of whom had hookworm infestations. After the workers were given iron supplements to correct the anemia caused by the worms, productivity increased 19 percent, for a cost of only 13 cents per worker over 12 months (17).

At a more elemental level, the ability to learn, at all levels of education and training, is impaired by ill health. Absence from school compounds the negative effect of sickness.

3. Wasting Current Resources. Resources are used up in often ineffectual treatments of diseases. Even when effective, many treatments are costly and pull disproportionate amounts from the overall health budget. Many illnesses also cause an increase in calorie use by the body, using up scarce food resources, and in turn contributing to malnutrition.

4. Impeding Development of Resources. Some areas of the world, particularly parts of Africa, are effectively closed to development because of disease threats. Some areas have been settled only to be abandoned because of the lack of effective control measures for diseases. African sleeping sickness (African trypanosomiasis) and river blindness (onchocerciasis) render parts of Africa uninhabitable by humans and/or domestic animals. The World Bank and the World Health Organization (WHO) have undertaken vector control programs to open some areas. Making areas safe for inhabitants also can increase the attractiveness of a country for tourists, a definite economic advantage.



What of the cost of the 10-year campaign? Approximately \$83 million has been spent in international assistance for the smallpox eradication program since 1967. The endemic countries themselves have spent roughly twice that amount, but few of them have spent much more than they were already spending on smallpox control. The total amount of money spent in international assistance is little more than half what was computed in 1968 to be the yearly expenditure for smallpox control in the U.S. alone; worldwide expenditures for smallpox vaccination and quarantine measures have been estimated as being in the range of from \$1 billion to \$2 billion a year. With the eradication of the disease, smallpox vaccination will no longer be required, nor will international certificates of smallpox vaccination. Apart from the alleviation of human suffering, the savings have already repaid the small investment many times over.

In addition to directly saving money, improved health can lead to a generally higher quality of life and, ultimately, to improvements in the economic development of a country.

Scientific Objectives

The tropical diseases of particular scientific interest today are the parasitic diseases, mainly those caused by protozoa (e.g., malaria, trypanosomiasis, leishmaniasis) and helminths (e.g., filariasis, schistosomiasis). While U.S. research on these diseases is still at a very low level in comparison with research on diseases of domestic importance, scientific interest has been heightened by advances in immunology and biotechnology. The parasites that cause tropical diseases are more complex immunologically than the organisms that cause infectious diseases common in the "United States, and these parasites have captured the attention of both basic and applied scientists. Their research activities are highlighted in this report, particularly in chapters 6, 7, and 8.

In a more general sense, scientists want their work to have an effect, and such desires do not stop at political boundaries. Advancing the control of diseases in developing countries is a great scientific challenge, and success in meeting it would be richly rewarding in terms of bettering the human condition.

U.S. SUPPORT OF INTERNATIONAL HEALTH ACTIVITIES

For the past four decades, U.S. Presidents and Members of Congress have shown sporadic enthusiasm for international health activities. Nearly every President since Truman has spoken out for a U.S. role in international science and international health. From President Truman's "Point Four Program" through President Carter's assertion that "Health is a basic human right," improvements in health have been seen as part of the solution to social, political, and economic problems. Congress has acted similarly, but the pronouncements and legislation have not been matched by funding for new programs.

One observer summarized the history of the interactions as follows (75):

. . . the process over a period of time has become cyclical. The Legislative and Executive branches have not been able to agree on a course of action because the enthusiasm of one branch of Government has been asynchronous with that of the other. Furthermore, the Office of Management and Budget has deterred any Department- or Agency-generated initiatives which would entail increased expenditures abroad.

The International Health Research Act of 1960

In 1958, Senator Lister Hill introduced a bill to institute broad international programs in health research. Congressman John Fogarty introduced an identical bill in the U.S. House of Representatives. The specific measures called for: 1) a National Advisory Council for International Medical Research; 2) a National Institute for International Medical Research as part of the National Institutes of Health (NIH); and 3) a \$50 million annual budget authority for international medical research.

Senator Hill stressed the need not only for research, but for information exchange and for training of research personnel. He contrasted his \$50 million budget authority for international health research with the \$400 million then being spent on medical research in the United States and the \$40 billion for defense that had just been authorized.

The bill passed the Senate, but the House made changes consistent with the wishes of the Eisenhower Administration and removed many of the specific provisions. The objections to the Senate version, according to Corning, were as follows (75):

. . . too much money; a new institute at the NIH for its administration was unnecessary; the international program authorized by the bill was considered to be a foreign policy matter; and the proposed program should be linked with the Department of State and the International Cooperation Administration and executed under the immediate supervision of the President.

The House version passed and became the International Health Research Act of 1960. An important distinction was made in the revision to separate international health activities that benefit the United States from those designed to advance the status of international health as a whole. Authority for activities benefiting the United States was delegated to the Secretary of Health, Education, and Welfare (now Health and Human Services). Authority to engage in activities for the purpose of advancing international health rests with the President and extends only to research and training for research, not operational health programs.

Some research conducted by NIH under the broader authority of the Public Health Service Act (the legislation that provides overall direction to Public Health Service activities) is of great benefit to other countries. Current work in the broad field of immunology is a case in point. The International Health Research Act, however, still provides the basis for most U.S. Department of Health and Human Services activities in international health and places limits on the initiatives that may be taken by NIH and the Centers for Disease Control (CDC).

The most recent forceful assertion of the importance of international health came under President Carter. In 1978, the White House Office of Science and Technology Policy produced the report *New Directions in International Health Cooperation* (27). Federal agencies responded to that report by proposing several initiatives for domes-

tic and multilateral programs in international health. The proposals included research in tropical medicine, establishing a global epidemic intelligence service, supporting the U.N. Development Program/World Bank/WHO Special Program for Research and Training in Tropical Diseases (TDR), developing a worldwide immunization program, establishing a health unit to respond to disasters around the world, encouraging the pharmaceutical industry to be more responsive to the needs of the developing world, and establishing nutrition surveillance and research programs. In spite of the enthusiasm, no new funds were allocated for these purposes, and progress was made only to the extent that existing budgets could support it, which for the most part was relatively little.

According to one observer, “the United States has been sensitive to international health needs,

has had continuing concern, but has not always addressed the issue of availability of resources and responded with active programs” (75). That observation continues to be accurate (see ch. 3).

Support of Multilateral Efforts

The United States has an admirable record in supporting multilateral international health efforts. Since the Pan American Sanitary Bureau was established in 1902, the United States has provided major financial support (about 65 percent of the regular annual budget) and technical assistance to it and to the later Pan American Health Organization. The United States energetically promoted and participated in the formation and funding of WHO beginning in the mid-1940s. The United States is currently a major supporter of TDR (see ch. 3).

U.S. REPORTS ON TROPICAL DISEASE RESEARCH AND TRAINING

The most comprehensive look at tropical disease research was a 1962 report by the National Academy of Sciences/National Research Council (NAS/NRC). A current NAS study is addressing the U.S. capacity to address tropical disease problems. These reports are discussed further below.

1962 NAS/NRC Report on Tropical Health

The most comprehensive look at tropical disease research, training, and practice, and the resources put toward those ends was taken more than 20 years ago in an NAS/NRC report entitled *Tropical Health: A Report on a Study of Needs and Resources* (252).

In the mid-1950s, the American Society for Tropical Medicine and Hygiene (ASTMH) recognized that interest in tropical medicine had begun to decline. The boost given by World War II, interest generated from practical necessity, had ceased to have effect. Money for research was drying up, and medical schools were cutting back the teaching of tropical medicine. At the same time,

the United States was developing its foreign aid programs to include health. Without continuing support for research and training for the health problems of recipient countries, mainly those in which tropical diseases are endemic, the professionals necessary to implement programs would not be available.

Dr. Albert Sabin, who chaired an ASTMH committee to consider these problems, was largely responsible for enlisting NRC to carry out its study. Funding was provided by NIH, the U.S. Army Research and Development Command, and the Rockefeller Foundation.

The 1962 NRC report is encyclopedic in scope. Geographically, the five major regions covered are: 1) the Caribbean and Central and South America, 2) Africa, 3) Southwest Asia, 4) South Central and Southeast Asia, and 5) Oceania. In 20 chapters, the report discusses the major human and animal diseases, including what is known of their incidence, prevalence, and mortality rates by region, and the status of prevention and treatment; resources for health and medical care; impacts of tropical health and disease on the United States; U.S.-based and foreign research programs

on tropical diseases; research grant and fellowship programs in tropical health; the teaching of tropical medicine and hygiene and facilities for training; and career opportunities and future manpower needs.

Research recommendations for each disease are presented as an "assembly of informed opinion," gathered by polling experts worldwide. Very specific suggestions are included, covering all aspects of laboratory, field, and clinical research.

The committee responsible for the report also drew up several broad resolutions addressed to various public and private entities in the United States, specifically (252):

1. Pave the way to increased U.S. participation in international health activities, if necessary through legislation. Solutions to disease problems of the tropics require systematic research and development programs. The United States, by virtue of its position of world leadership has an obligation to contribute to the fullest extent to research and training activities. Participation should not be tied to direct benefits to the United States.
2. Explore creation of an advisory group within NAS/NRC to organize support for a "National Program for Research in Tropical Health," with involvement of the relevant government agencies and private organizations.
3. Seek authority to make direct grants to foreign institutions for support of research, development, or training in tropical health.
4. Strengthen undergraduate and postgraduate medical training in tropical diseases. This could include opportunities for training in the tropics.
5. Seek to improve statistics relating to tropical diseases, by working through WHO and by offering WHO increased U.S. support to accomplish this aim.
6. Encourage studies to document economic loss due to disease and gains accruing from disease control.
7. Encourage and provide additional support for international veterinary health organizations.

The 1962 NAS/NRC study was, and still is, of inestimable value to people in the field, giving a

clear picture of the state of knowledge at the time. That study is now the benchmark against which progress can be measured. But it does not appear to have had a significant impact on U.S. Government policies or practices.

Legislation to foster U.S. involvement in tropical health has not been passed. The advisory group suggested in resolution 2 was not formed. Funding for research, and particularly for developing country institutions, is still passively allowed in most cases, rather than actively encouraged. There is widespread agreement that the U.S. capacity to train tropical health professionals has eroded, if anything, in recent years.

On the positive side, statistics regarding health conditions in the tropics have gradually become more reliable. The major improvements have been in birth and death reporting, and not so much in the inherently more difficult task of recording nonfatal cases of disease. The number of studies of the type recommended in resolution 6 that have been carried out could probably be counted on one hand.

Current NAS Study of U.S. Capacity To Address Tropical Disease Problems

Leaders in tropical medicine and tropical public health have expressed alarm at the current erosion of U.S. support for training in those fields. The capacity of the United States to train people in parasitology, vector control, tropical medicine, and related fields in tropical public health is reaching a low ebb. This crisis is the subject of a current study by NAS.

The NAS study, *U.S. Capacity To Address Tropical Disease Problems*, is being carried out by NRC's Board on Science and Technology for International Development (BOSTID), in cooperation with the Institute of Medicine (IOM). IOM was approached about the need for this study by an ad hoc committee of ASTMH.

The NAS study has several objectives:

- to examine current capabilities of U.S. centers to conduct research and postgraduate training in tropical medicine and tropical public health;
- to estimate future manpower needs in applied research and training; and

- to assess the adequacy of mechanisms for providing research and training support in the field.

Funding for the study is being provided by the U.S. Army Research and Development Command, the National Institute for Allergy and Infectious Diseases, CDC, and AID. The Rockefeller Foundation will cosponsor and support an international workshop in connection with the study. A

report from the study is expected in late 1985. This report should provide information on which to make decisions about the types of funding mechanisms and programs that could be emphasized or mounted in future funding decisions. There will still be a need to examine the opportunities for application of available technologies and the constraints to their application.

TROPICAL DISEASE RESEARCH IN THE CONTEXT OF U.S. INTERNATIONAL HEALTH ACTIVITIES

Efforts to improve international health consist of a great deal more than research, and in fact, research is a small component in terms of money spent and personnel deployed. Most U.S. international health assistance is directed toward operational activities—particularly, in providing primary health care, environmental services, and nutrition and population programs. These activities are closely tied to U.S. foreign policy. Guidelines for operational activities are established by the Department of State, and the activities themselves are largely carried out by AID. Programs and resources are provided not solely on the basis of need, but in accordance with U.S. foreign policy goals.

Much of the published analysis of the U.S. international health effort relates more closely to operational activities than to research. Tropical disease research shares some but not all of the problems of the larger field of international health and is also subject to other influences.

One concern of many observers of international health is the lack of a central Federal policy stating U.S. goals for international health activities. There is a statement of policy for research, which is stated in the International Health Act of 1960—but that policy is fairly weak (see discussion above). The lack of an overall U.S. policy subor-

dinates international health aims to the general mandates and strictures of each agency as it carries out its activities.

Furthermore, lack of a clear-cut international health policy results in tropical disease research remaining low in status in relation to domestic biomedical research. Operational programs can use the leverage of foreign policy benefit to support their activities, but research programs, which may have less direct benefits, may be more difficult to justify.

A strong central policy supporting an aggressive U.S. role in international health could have a salutary effect on all aspects of the field, including tropical disease research. However, the effect of such a policy would probably be greater in expanding operational programs than in expanding research. The reason is that operational programs have a more immediate, tangible, foreign policy impact than do research programs. A program in a particular country in need of health assistance is a more dramatic display of U.S. interest than is a researcher at NIH searching for long-term solutions to disease problems. For this reason, if a policy statement is considered by the U.S. Government, the intent of the policy concerning research, as distinct from operational aims, should probably be spelled out.