GLOBAL HEALTH: WHAT'S IN IT FOR US?

It's a classic battle cry. Researchers have long argued, even pleaded, for the U.S. government to fund public health programs in developing countries. In the past few years, U.S. spending on aid to foreign countries has slipped behind that of Japan, France, and Germany, with only scattered agencies supporting pet projects. Some economists suggest that U.S. aid has leveled off and could stay stagnant for years to come. Meanwhile, the world continues to shrink; travelers cross the globe in hours, companies set up shop in foreign countries, and infectious viruses and drug-resistant bacteria creep across national borders. And as the world's population ages, skyrocketing chronic disease clouds the horizon.

So it's with growing urgency that health researchers sound a new wake-up call. Rather than appeal to altruism, scientists and analysts are now focusing on the bottom line: U.S. health and dollars. A new report, *America's Vital Interest in Global Health*, released in June by the Institute of Medicine's (IOM) Board on International Health, details how U.S. research and business would benefit from a unified global health program. The report, available on the Internet at URL **http://www.nap.edu/readingroom/books/avi**, argues that we can't afford to ignore our neighbors' problems. Instead, we should apply science and technology solutions, and reap the rewards.

"Okay, so we can't solve all the poverty and environment problems of the world," says report co-chairperson Barry Bloom, a Howard Hughes Medical Institute investigator and an immunologist at Albert Einstein College of Medicine in New York. "[But] health, we know how to do an awful lot about. We could be the world leader in health. And it's cost-effective."

Bloom and colleagues offer concrete recommendations for getting the United States more involved in global health. The IOM report calls for more research and education about diseases of the developing world, a global surveillance system to spot environmental changes and emerging disease conditions, public and private sector partnerships to distribute vaccines and drugs overseas, and a new government body, the Interagency Task Force on Global Health, to help coordinate these efforts.

Researchers welcome the report. "I'm pleased that they focused on the policy implications for the U.S.," says Burton Kross, director of the Center for International Rural and Environmental Health at the University of Iowa in Iowa City. "They're not just laying out the problems. Instead, they're providing a framework for what the U.S. should do." It's still unclear how closely Congress and government agencies will follow that framework, which is intended to help politicians and granting agencies better understand global health issues. But the report's authors are optimistic. "There's a lot we could do that's not extravagant," Bloom says. "All it takes is leadership."

Emerging Crisis and Opportunity

Over the past few years, the concept of a "global village," a world where everyone's lives are intertwined via travel and business, has taken shape. Similarly, researchers now propose a model for global, not just international, health. Their point is that Nebraska and New Delhi are closer than one might think—and getting closer. For example, a company may have headquarters, and thus a vested interest, in both places. Suddenly, scientists argue, "their" problems become "ours."

And problems there are. The health story of the decade is emerging disease, pathogens that creep seemingly from nowhere to cause widespread illness. In Latin American countries, it's cholera. In Kenya, yellow fever. In Costa Rica, dengue fever. And the list goes on—malaria, AIDS, Ebola fever, tuberculosis. These disease epidemics stem from changes in the environment, such as heavy rains or hot temperatures, and human behavior, particularly increased urbanization, which often leads to crowded, unsanitary living conditions.

Drug resistance is another global health problem. In a handful of countries, roughly half the infections caused by certain

streptococcus, staphylococcus, and *mycobacterium* strains of bacteria are drug resistant. In the United States alone, the total cost to treat one case of drug-resistant tuberculosis is $250,000, compared to the $25,000 normally needed to fight one incidence of the disease.

And there are more clouds on the horizon. Much like the United States, the developing world is in a demographic transition; people are getting older. Demographers estimate that over the next 30 years, the number of adults ages 45 and older in the developing world will double, while the number of children will rise by just 20%. The shift translates into more people developing chronic conditions prevalent in older adults, including heart disease, depression, lung disease, and brain disorders such as Alzheimer's and Parkinson's diseases.

"The pattern of disease is, and will continue, becoming much more similar between middle-income countries in the Middle East, Latin America, Asia, and the United States," says Christopher Murray, an international health researcher at Harvard University. "A big problem is that if you're a lower-middle income country, there's not a lot of research [happening] on cost-effective strategies for dealing with noncommunicable diseases."

In combination, emerging diseases, drug resistance, and rising rates of chronic conditions deliver a whopping public health challenge to the developing world, which presents unprecedented health research opportunities for the United States, says Murray. For example, the worldwide increase in age-related diseases means research conducted overseas can be directly applied to health care at home. "The potential to learn from what's done in the Netherlands or Chile is greater than ever before," Murray says.

Seizing this fact, the IOM report urges the government to fund clinical trials and chronic disease research in developing countries. Similarly, it lobbies for more collaboration between international scientists and education for health specialists in other countries. "As the burden of disease in the developing world shifts from acute infectious disease to more chronic disease, we have a great need for highly trained health professionals in those areas," says Philip E. Schambra, director of the Fogarty International Center in Bethesda, Maryland. "There are many, many gaps."

In fact, great gaps still exist in controlling emerging disease. For more than five years, public health specialists have pressed the government to start a global surveillance system that tracks environmental and disease conditions worldwide. The idea is to spot disease outbreaks early, responding before infection spirals out of control. "Eventually, we might find environmental markers such as climate change that suggest what kinds of problems may come," says Stephen Morse, director of the program in emerging diseases at Columbia University in New York.

While some strides have been made—for example, the World Health Organization (WHO), the CDC, and other organizations have bolstered emerging disease efforts—a comprehensive global surveillance system does not exist. The IOM report emphasizes the need for such a system because, by protecting populations overseas, researchers also would safeguard health at home. In the United States, for example, where outbreaks of Lyme disease, hantavirus, *E. coli* contamination, and AIDS all threaten public health, answers are desperately needed.

Another way to fight infectious disease is to deliver vaccines and drugs to developing countries. Today, few U.S. companies develop vaccines for overseas markets because there's little chance for profit. The IOM report supports a multi-tiered pricing scheme in which companies offer vaccines cheaply to developing countries. In the past, politicians have lambasted such pricing schemes as unfair to U.S. citizens, who would pay more for the same medicine. In addition, the IOM report calls on the government to safeguard intellectual property rights, extend patents, and basically support the efforts of drug companies selling products overseas.

These strategies would pay off by both saving money and protecting U.S. health, researchers say. "Take smallpox," says Gerald Poje, director of international programs and public health at the NIEHS. "Eradicating that disease has saved the U.S. billions of dollars in prevention and treatment costs." But it's not enough, Poje says, to vaccinate U.S. children against diseases. "It's currently estimated that nobody is more than a day and a half away from anyplace in the world," he says. Therefore, to protect their populations, countries must venture beyond their own borders.

The Locus Issue

Unfortunately, IOM panel members say, the United States is poorly prepared to examine health issues beyond its borders. The report takes aim at what Christopher Howson, director of the Board on International Health, calls "the locus issue"—the absence of a single U.S. government body coordinating global health efforts. Right now, the United States Agency for International Development (USAID), the NIH, the CDC, and the Department of Defense (DOD) all fund some global health research or programs. In addition, the Department of Health and Human Services (DHHS) also represents the United States in development efforts organized by the WHO. A host of private organizations, like the MacArthur, Pew, and Rockefeller foundations, support global health projects as well.

"The whole issue of global health is too complex to be dealt with by any one agency," Howson says. "What we're arguing is that there needs to be a locus of coordination to help leverage scarce human and financial resources in the interest of global health. Right now, that locus does not exist."

Also missing, IOM report authors say, is a financial commitment by the United States. In 1995, the country spent about 0.1% of its gross national product (GNP), or about $7 billion, on foreign aid, the lowest percentage among industrialized countries. By comparison, the United Kingdom and France spent about 0.29% and 0.56% of their GNP, respectively. Bloom and others also note that the United States has fallen billions of dollars behind in aid-related payments to the United Nations and the WHO. At press time, President Clinton had asked Congress for $1 billion to help pay these debts.

Ironically, the reality of foreign aid sharply contrasts with public perception. Several nationwide surveys suggest that U.S. citizens support far higher investment in global health and international development. In a 1995 poll conducted by the program on international policy attitudes at the University of Maryland, for example, those surveyed said the United States should spend about 15% of the federal budget on foreign aid, an amount 150 times greater than that actually spent.

"The polls indicate that most people favor helping developing countries with health issues," says David Rall, a report contributor who is also the IOM foreign secretary and director emeritus of the NIEHS. "In fact, the average person vastly overestimates how much money we do give away." Americans also might be surprised at how much can be accomplished with minimal taxpayer dollars, he adds.

To improve the U.S. global health effort, the IOM report proposes creating the Interagency Task Force on Global Health within the government. Representing agencies such as the USAID, the CDC, the DOD, and the Food and Drug Administration, the task force would be a strategic leader, coordinating global health projects and recruiting partnerships with

academia, industry, and international agencies. The report recommends giving the DHHS earmarked funds and specific authority to create the new task force.

But can disparate agencies, amid budget-conscious times, really share their turf in such a coordinated fashion to meet a common goal? Linda Vogel, deputy director of the DHHS, isn't sure. "I'm not convinced that having an interagency committee is the best way to deal with global health problems," Vogel says. "A committee cannot necessarily overcome resistance by one agency or another to following their own vision of what needs to be done." For example, she notes, the DHHS might put a different twist on problems of child survival than the USAID does. Which viewpoint becomes the standard?

Vogel also stresses the complexity of global health problems. In the developing world, just getting vaccines transferred from the hands of the government into needy communities can be challenging. "In almost every country, there's the same question: how do you get resources to the periphery?" Vogel says. "And how do you provide appropriate regulatory oversight? What's more, how do you teach people about their personal responsibility for their own health? You've got to deal with superstitions, myths, traditional practices."

Still, researchers say that with a little work they can bridge the borders separating both government agencies and geographic regions. At the University of Iowa, for example, Kross collaborates with researchers from the Medical Center for Health Services and Management in Timisoara, Romania. Together, the team is studying Romanian children who were exposed to nitrates and developed methemoglobinemia ("blue baby disorder"), which can lead to developmental defects as children age. Over the past five years, an estimated 500 infants in a small Romanian region developed the disorder. These and other projects have been funded by private and public organizations, including the NIH, the USAID, the EPA, and the company Pioneer Hi-Bred International, headquartered in Des Moines, Iowa.

"These are the kinds of partnerships and research collaborations that the IOM report has in mind," says Kross. "I think people need to quit debating the feasibility and get on with it." Rall agrees. "It's hard to predict what will come from this report," he says, "but we've got to get global health issues on the table. The more we get people talking, the better off we are."

Kathryn S. Brown

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