

# The expanding global health agenda: a welcome development

Anthony S Fauci

Over the past decade, issues related to the health of people in resource-poor countries have captured the attention of world leaders, governments, philanthropies, policy makers and the general public as never before. This attention has focused on scientific, public health and humanitarian challenges, and involves biomedical research on vaccine and drug development, implementation of public health measures and a growing realization of the deleterious effects of disease on economic development and political stability<sup>1</sup>.

## A global commitment

International bodies such as the United Nations, the World Economic Forum and the G-8 have made the improvement of global health a priority. Attention to global health issues has been unprecedented in both the current US administration and in a bipartisan manner in the US Congress. Organizations such as the Bill & Melinda Gates Foundation, the William J. Clinton Foundation and Médecins Sans Frontières have helped build health programs for patients throughout the world. Dozens of public-private health partnerships have been formed to fight HIV/AIDS, malaria, tuberculosis and other 'tropical diseases' that predominantly affect countries with low and middle incomes. Activists, including prominent entertainment celebrities, have heightened public awareness of global health issues in the media and have helped educate the public about the disparities in health between rich and poor countries.

Anthony S. Fauci is the director of the National Institute of Allergy and Infectious Diseases, 9000 Rockville Pike, Building 31, Room 7A-03, National Institutes of Health, Bethesda, Maryland 20892, USA.

E-mail: [afauci@niaid.nih.gov](mailto:afauci@niaid.nih.gov)

Published online 17 September 2007; doi:10.1038/nm1646

For those who work in biomedical research and public health, this evolution has been a welcome opportunity to build on existing and, in some cases, longstanding programs in research related to global health. Recent scientific advances in microbial pathogenesis, immunology, genomics and other disciplines have led to new opportunities to address important global health issues. And increased investments in global health research are facilitating exciting studies that promise to bring a new generation of therapies, vaccines and diagnostics to the clinic<sup>2</sup>. Funders in both the public and private spheres have taken to heart Mary Lasker's famous quote: "If you think research is expensive, try disease"<sup>3</sup> (Fig. 1). This is particularly true of diseases such as HIV/AIDS, malaria, tuberculosis, respiratory and intestinal diseases, and many neglected tropical diseases, which are prevalent in low- and middle-income countries. The burden of morbidity and mortality is huge for these illnesses, and in many cases the discovery and development of simple interventions can have an enormous impact<sup>1,2</sup>.

## HIV/AIDS and the growing awareness of global health issues

Global health has long been a subject of intense interest and commitment for a subset of the biomedical-research and public-health communities in the United States. Until relatively recently, however, people from rich nations had little understanding of the devastating impact of diseases that historically have fallen under the rubric of tropical diseases. The emergence of the HIV/AIDS pandemic changed this perspective, something I never would have anticipated in the early days of AIDS<sup>4</sup> (Fig. 2). At that time, the known cases of the new syndrome in the United States were confined to a small number of homosexual men. Today, more than 90% of the approximately 40 million people living with HIV infection reside in developing countries<sup>5</sup>.



**Figure 1** Mary Lasker: "If you think research is expensive, try disease." World Telegram & Sun photo by Fred Palumbo, 1957.

The keen interest that developed nations took in HIV/AIDS in the early years of the pandemic was initially spurred by efforts to control the disease at home. But the AIDS research and public health effort soon became a global endeavor (albeit on a much smaller scale than it is today) when it became evident that HIV/AIDS was a health crisis that disproportionately affected developing countries. The biomedical research response to HIV/AIDS was unprecedented, rapidly producing important advances in our understanding of viral etiology, pathogenesis and natural history, as well as the development of interventions such as diagnostics, tools of prevention and antiretroviral



US National Institutes of Health

**Figure 2** The author (right) examines an AIDS patient in the early years of the epidemic at the US National Institutes of Health Clinical Center.

drugs (ARVs)<sup>6</sup>. ARVs have had a remarkable impact on morbidity and mortality wherever they have been deployed; however, for many years their use was largely confined to developed countries.

In recent years, ambitious programs such as the US President's Emergency Plan for AIDS Relief (PEPFAR) and the Global Fund to Fight AIDS, Tuberculosis and Malaria have helped deliver ARVs to more than 2 million people in poor- and middle-income countries<sup>7</sup>. Progress continues to be made in delivering HIV treatment and prevention services in resource-poor settings, showing what can be accomplished, even in very poor countries, with adequate funding, a strong global commitment, collective action and political will. PEPFAR, the Global Fund and other important efforts have raised the bar with regard to the responsibilities and impact of developed nations in global health.

Importantly, efforts to address HIV/AIDS in developing countries have brought attention to other equally devastating diseases that coexist with it<sup>4</sup>. Through the lens of the HIV/AIDS pandemic, the catastrophic health status of many countries in the developing world, especially the impact of other infectious diseases that have devastated regions throughout history, has been brought into sharp focus. For example, an estimated 300–500 million clinical cases of malaria occur every year; about 1.3

million deaths were attributed to the disease in 2005, most of them among children in Africa. An estimated one-third of the global population is infected with the bacterium that causes tuberculosis. Most cases are latent; yet there are 8.8 million new cases of active disease each year, and 1.6 million deaths were due to tuberculosis in 2005. Vaccine-preventable childhood diseases (such as measles, pertussis and tetanus) take more than one million lives annually, mostly in poor countries<sup>8</sup>. Parasitic diseases such as helminth infections (hookworm, filariasis), vector-borne protozoan infection (leishmaniasis) and certain bacterial infections (trachoma)—unknown for the most part to people in rich countries but epidemic in poor ones—collectively result in hundreds of thousands of deaths each year and widespread suffering in developing nations. It is encouraging that these diseases, frequently referred to as 'neglected tropical diseases' have joined the 'big three'—HIV/AIDS, tuberculosis and malaria—in garnering increasing attention and resources.

The neglected tropical diseases, like many other infectious diseases of global importance, are diseases of poverty that are endemic in poor cities, towns and villages. They also promote poverty by reducing workforces and worker productivity, and by impairing childhood growth, intellectual development and education. Thus, a vicious feedback loop is

established: poor people become even poorer because of the deleterious effects of infectious diseases. The inexorable link between poverty and infectious diseases is increasingly appreciated as the general understanding of global health issues rises.

### Enlightened self-interest and medical diplomacy

Western societies have long felt an altruistic and humanitarian obligation to help people throughout the world live longer and healthier lives. However, humanitarian concerns alone have frequently not triggered a sustained effort to address what often seem to be insurmountable problems in poor, seemingly remote countries. A key element in the recent support of global health initiatives has been the growing realization by political leaders of the importance of global health to their national interests.

It is now clear that we live in a global society, with globalization of trade and economies leading to an unprecedented interdependency of nations that are thousands of miles apart. Thus, the health of one nation in the developing world can have an important impact on developed nations, the economy of which is related to the productivity and markets of the developing nation. In this regard, global health takes on an entirely new perspective.

Furthermore, it is now axiomatic that, in an increasingly global society, people everywhere are threatened by disease epidemics that originate elsewhere. With regard to infectious diseases, there is virtually nowhere in the world from which we are remote and almost no one from whom we are truly disconnected. Indeed, diseases in a nation in which we have economic interests have an indirect impact on those of us in the developed world. In addition, because of the enormous volume of international travel and trade, it is folly to think that at home we are isolated from health threats that might emerge in a distant developing country. HIV/AIDS, a disease well documented to have originated in sub-Saharan Africa, made the reality of such a threat abundantly clear. A virulent strain of influenza virus could reach the US from Asia in less than 24 hours.

Many observers, including intelligence services in the United States, have concluded that the 'big four' (that is, HIV/AIDS, tuberculosis, malaria, neglected tropical diseases) and other disease threats have the potential to greatly exacerbate social, economic and political instability in nations and regions of the world in which Western countries have significant economic and political interests. Summarizing such concerns, the Board on International Health of the US Institute of Medicine con-



Anthony S. Fauci

**Figure 3** The author poses with children in a village near Tororo, Uganda, during a 2003 mission of the US Department of Health and Human Services to observe the impact of HIV/AIDS in sub-Saharan Africa.

cluded that “America has a vital and direct stake in the health of people around the globe, and that this interest derives from both America’s long and enduring tradition of humanitarian concern and compelling reasons of enlightened self-interest”<sup>9</sup>. It is clear that the notion of “enlightened self-interest” helped sustain funding for HIV/AIDS research; increasingly, world leaders are realizing that this concept has relevance to other diseases with a great global impact. Like HIV/AIDS, these diseases have the potential to provoke social fragmentation, economic decay and political polarization, and can be considered to be security, as well as humanitarian, issues.

Recently, the concept of ‘medical diplomacy’ has emerged, and political leaders in the United States and other developed nations have embraced it<sup>10</sup>. Medical diplomacy can be defined as the winning of hearts and minds of people in poor countries by exporting medical care, expertise and personnel to help those who need it most. I have had the privilege to play a small role in such efforts over the past several years, notably in the formulation of PEPFAR and, to some extent, the President’s Malaria Initiative. PEPFAR is a \$15-billion, five-year effort that has achieved remarkable

results in providing treatment, care, prevention services, testing and counseling in 15 poor countries in Africa, the Caribbean and Asia<sup>11</sup> (**Fig. 3**). Thirty billion dollars has been proposed for the next five years of the program. The President’s Malaria Initiative seeks to assist national malaria control programs in cutting malaria-related deaths by 50% in 15 countries with a high burden of the disease<sup>12</sup>.

### The need for sustainability

A single entity cannot address the complex issues of global health; the confluence of many is required. Long-term success in global health requires building a sustainable infrastructure in developing nations and, importantly, providing developing nations with the means to ultimately solve their own problems through the establishment of economic stability and self-sufficiency. Unfortunately, popular Western culture tends to have a short attention span, and today’s latest trend can quickly become yesterday’s news. Although we have made important strides in the fight against HIV/AIDS and other global diseases, the real work of solving such health problems lies ahead. It is imperative that we use our current momentum to move forward, recognizing that the enormous challenges of global health—ranging from biomedical research to the implementation of public-health measures—will require a long-term commitment that is sustained even when global health and those fighting to improve it are no longer in the headlines.

It remains critical that the medical and public health communities channel the spirit of Mary Lasker and argue cogently for medical research, and for adequate attention and sustained support for the delivery of the fruits of that research to the people who need them most. As the International Declaration of Health Rights proclaims, “The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being. It is not a privilege reserved for those with power, money or social standing”<sup>13</sup>. Our collective work in fighting the many challenges to global health must not wane

as we endeavor to make these rights a reality for many more of our fellow human beings.

### ACKNOWLEDGMENTS

I thank G.K. Folkers for discussions and review.

### COMPETING INTERESTS STATEMENT

The author declares no competing financial interests.

1. World Health Organization. The world health report 2006 - working together for health (World Health Organization, Geneva, 2006) <<http://www.who.int/whr/2006/en/index.html>>.
2. Fauci, A.S. Infectious diseases: considerations for the 21st century. *Clin. Infect. Dis.* **32**, 675–685 (2001).
3. Lasker Foundation and Funding First. Exceptional returns: the economic value of America’s investment in medical research (Mary Woodward Lasker Charitable Trust, New York, 2000) <<http://www.laskerfoundation.org/reports/pdf/exceptional.pdf>>.
4. Folkers, G.K. & Fauci, A.S. The AIDS research model: implications for other diseases of global health importance. *JAMA* **286**, 458–461 (2001).
5. Joint United Nations Programme on HIV/AIDS (UNAIDS) and World Health Organization. AIDS epidemic update: special report on HIV/AIDS: December 2006 (UNAIDS, Geneva, 2006) <[http://www.unaids.org/en/HIV\\_data/epi2006/](http://www.unaids.org/en/HIV_data/epi2006/)>.
6. Fauci, A.S. HIV and AIDS: 20 years of science. *Nat. Med.* **6**, 839–843 (2003).
7. World Health Organization, UNAIDS, UNICEF. Towards universal access: scaling up priority HIV/AIDS interventions in the health sector: progress report, April 2007 (World Health Organization, Geneva, 2007) <[http://www.who.int/hiv/mediacentre/universal\\_access\\_progress\\_report\\_en.pdf](http://www.who.int/hiv/mediacentre/universal_access_progress_report_en.pdf)>.
8. World Health Organization. WHO Statistical Information System <<http://www.who.int/whosis/en/>> (2007).
9. Institute of Medicine. America’s Vital Interest in Global Health: Protecting Our People, Enhancing Our Economy, and Advancing Our International Interests (National Academy Press, Washington, DC, 1997) <<http://www.nap.edu/readingroom/books/avi/>>.
10. Iglehart, J.K. Advocating for medical diplomacy: a conversation with Tommy G. Thompson. *Health Aff. (Millwood)* [online] **W4** (web exclusive), 262–268 (2004) (doi:10.1377/hlthaff.W4.262).
11. Office of US Global AIDS Coordinator and Bureau of Public Affairs, US State Department. The power of partnerships: the President’s emergency plan for AIDS relief. *Third Annual Report to Congress on PEPFAR* <<http://www.pepfar.gov/documents/organization/81019.pdf>> (2007).
12. US Agency for International Development. Saving the lives of mothers and children in Africa: first annual report. *The President’s Malaria Initiative* <[http://www.fightingmalaria.gov/resources/pmi\\_annual\\_report.pdf](http://www.fightingmalaria.gov/resources/pmi_annual_report.pdf)> (2007).
13. Johns Hopkins University School of Hygiene and Public Health. The international declaration of health rights <[http://www.jhsph.edu/school\\_at\\_a\\_glance/health\\_rights/](http://www.jhsph.edu/school_at_a_glance/health_rights/)> (1992).