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Global Health: Governance and Policy Development

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KEYWORDS

• Global health • Governance • Policy • Globalization

Collective global action is increasingly recognized as central to achieving the highest attainable standard of health and wellbeing for the world's people. Governance constitutes the constellation of mechanisms a society uses to effect collective action toward common goals. Although individuals bear the major responsibility for maintaining healthy lifestyles and for seeking appropriate preventive and therapeutic care, many factors necessary for health can only be established through collective action on a larger scale.

Effective collective action requires coordinated policy and a collaborative approach to implementation. Historically, the purview of sovereign states and intergovernmental organizations like the World Health Organization (WHO), global health policy is now being influenced by an ever-increasing number of nonstate and non-intergovernmental actors with a range of mandates, interests, resources, means, and degrees of accountability.

Illustrative community needs amenable to organized, collective public-health solutions include the need to provide individuals with access to safe, potable water, hygienic housing and worksites, nutritious and uncontaminated food and drugs, and protection from infectious diseases. In recent decades, the challenges for global health governance have grown to encompass the prevention of interpersonal violence, unintentional injuries, threats to mental and reproductive health, and the prevention of global epidemics of chronic diseases. In health systems, current challenges include addressing the consequences of health-workforce migrations from communities in dire need to meet the growing demand for health workers in wealthier countries. Increases in global trade have extended the public-health mandate to concern about the safety and effectiveness of imported food, pharmaceuticals, and other products.

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Threats to health, actual and perceived, can also constitute challenges to peace, economic prosperity, family and military stability, and human rights. Responding to health threats can bring into tension competing global interests that require resolution in the global governance arena (eg, reconciling the right to have access to lifesaving antiretroviral drugs with intellectual property regimes). Indeed, many public goods can now be achieved only with global collective action.

GLOBALIZATION: A DRIVER FOR GLOBAL HEALTH GOVERNANCE

In the mid-nineteenth century there was recognition that collective supranational action was needed to control epidemic diseases, such as plague and cholera. From 1851 to 1903, at least 11 international sanitary conferences were convened to address the threats of cholera, yellow fever, and plague.¹ The motivation for these conferences was not merely the protection of individual health but also the implementation of disease control so that the benefits of industrialization, global trade, and cross-border traffic would not be unduly hampered.

The geo-temporal challenge of global health governance in the nineteenth century was modest. In 1850, when the world population was about 1.2 billion, an individual needed about 1 year to circumnavigate the globe. By 2000, when the world population had increased to more than 6 billion, a determined traveler could cover the same distance in less than 48 hours.² Pathogens can now be carried far and wide with great rapidity, as was seen with severe acute respiratory syndrome (SARS) in 2003 and with the H1N1 pandemic in 2009.^{3,4}

In the twenty-first century, the health impacts of globalization go far beyond the international spread of naturally occurring emerging infections.⁵ Medically inappropriate or inadequate uses of antimicrobial drugs have hastened the spread of resistant organisms (eg, extremely drug-resistant tuberculosis), which can migrate and threaten even well-developed countries. Sadly, biologic and chemical terrorism are ongoing threats, despite the provisions of the Biologic and Chemical Weapons Conventions.⁶ Two perhaps less-obvious phenomena are the globalization of pharmaceuticals and food supplies.

Pharmaceuticals originating in many developing countries have been associated with a range of quality problems, yet they are increasingly imported to the United States. According to calculations based on the United Nations (UN) Commodity Trade Statistics Database, the dollar value of pharmaceutical imports to the United States from all parts of the world increased more than 22-fold between 1985 and 2005. During that same period, when the values of imports from Switzerland and the United Kingdom increased 11-fold and 12-fold, respectively, the comparable increases for imports from China and India were 23-fold and 65-fold, respectively.⁷ Some pharmaceutical-manufacturing problems in the developing world may even reflect intentional adulteration. In 2007 and 2008 exported heparin of Chinese origin that included oversulfated chondroitin sulfate was tied to 149 US deaths in which one or more allergic/hypotensive symptoms were reported.⁸ The pharmaceutical-import business is so large that the US Food and Drug Administration (FDA) inspection of products at US points of entry is logistically impractical.

As depicted in **Fig. 1**, the globalization of agricultural trade over the last several decades has also been remarkable. Excluding imports from Canada and 27 nations of the European Union, the dollar value of agricultural imports to the United States from the next 13 national sources totaled about \$32,808,623,000 in 2009. Of this, approximately 51% was attributable to trade with Mexico, China, Brazil, Thailand, and India.⁹ A 2008 US Government Accountability Office report estimated that at

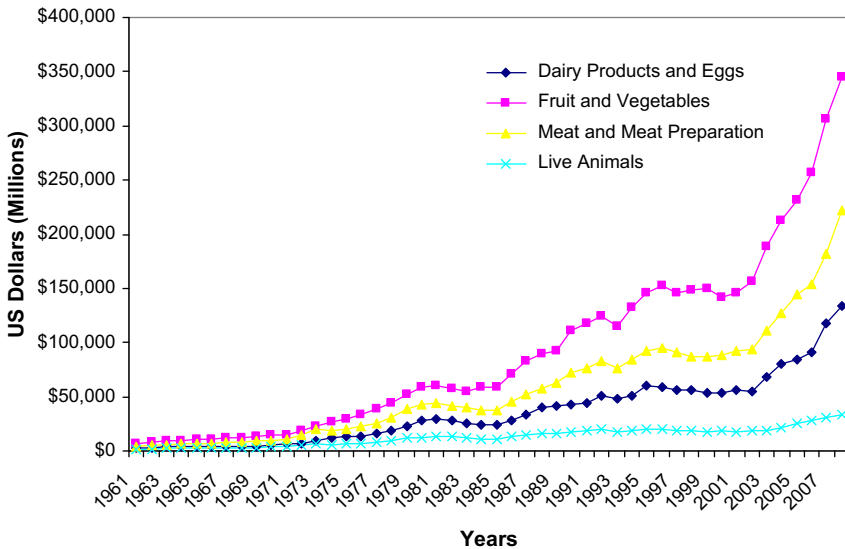


Fig. 1. Trends in international agricultural trade (total world imports + total world exports) by commodity type, 1961 to 2008. (Data from FAOSTAT, Statistics Division, Food and Agriculture Organization of the UN. Available at: <http://faostat.fao.org/site/535/default.aspx#anchor>, <http://faostat.fao.org/site/604/default.aspx#anchor>. Accessed March 23, 2011.)

recent inspection rates it would cost the FDA \$3.16 billion and take more than 13 years to inspect the 189,000 foreign facilities involved with registered food production for export to the United States.¹⁰

Governance structures for building consensus and for collectively managing public health actions are necessary because the world's inhabitants cannot create societies and economies that are largely self-contained and insulated from outside threats. The world's inhabitants increasingly share the same air, water, exposure to infectious diseases, foods, pharmaceuticals, and health workforce. Through climate change, the impact of human activities in a few countries can affect harvests, the epidemiology of infectious diseases, and the potential for global natural disasters.¹¹ Even among countries with strong public health programs, harmonization of standards and processes is important for effective and efficient collective action. Today's global health governance structures include a complex web of UN agencies, public/private partnerships, donor and recipient governments, foundations, corporations, and civil society organizations. A recent report from the Kaiser Family Foundation identified 50 multilateral international health treaties, commitments, partnerships, and other agreements, 26 of which are legally binding under international law. The United States is a party to 36 of these of agreements, 16 of which are legally binding. These agreements cover many topical areas, including specific diseases, environmental issues, trade and intellectual property, specific populations (eg, refugees or children), health security/preparedness, water, and food/nutrition.¹²

THE CURRENT ARCHITECTURE OF GLOBAL HEALTH GOVERNANCE

The World Health Organization and Other United Nations Agencies

In the aftermath of the nineteenth-century international sanitary conferences that focused on threats to ports and trade, the early twentieth century saw international

global health governance reflected in new institutions, such as the International Sanitary Bureau (ISB) based in Washington, DC, and the Office Internationale d'Hygiène Publique in Paris. The ISB subsequently became the Pan American Health Organization, which since 1948 has been one of 6 regional offices of the WHO. When the UN system was conceived in 1945, Brazil and China proposed the WHO. The WHO constitution contains several key principles, including:

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition.

*The health of all peoples is fundamental to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and States.*¹³

The broad mandate of the WHO has 6 core functions: the provision of collective health leadership, the shaping of research as well as the generation and dissemination of knowledge, the setting of norms and standards and the promotion and monitoring of their implementation, the production of ethical and evidence-based policy options, the provision of technical support and capacity-building, and the monitoring of health situations and trends.¹⁴ The organization has a 6-point agenda: promote development; foster health security; strengthen health systems; harness research, information, and evidence; enhance partnerships; and improve performance.¹⁵ This agenda is shaped at annual meetings in Geneva by the 193 member countries that compose the World Health Assembly. An 8000-person secretariat based in Geneva and at the 6 regional and 147 country offices performs WHO programs. The breadth of the programs undertaken is vast, although not always deep. Some of the topics addressed include HIV/AIDS; malaria; tuberculosis; chronic noncommunicable diseases; mental disorders; violence; traffic safety; visual impairment; maternal and child health; aging; disasters; health equity; environmental health; nutrition and food safety; drug access; research; health systems strengthening; and tobacco, alcohol, and drug abuse, and other unsafe behaviors.

When the WHO was envisioned, the concept of its operations was quite vertical and focused primarily on relationships with member states. Few other actors were engaged in global health. Since its founding, the WHO has celebrated major accomplishments but has also suffered from an erosion of its influence. Beyond the eradication of smallpox (an event that has likely saved more than 20 million lives since 1977), WHO technical leadership has also played a role in the near eradication of polio; the containment of the deadly 2003 SARS epidemic; the landmark 2003 WHO Framework Convention on Tobacco Control (the first treaty negotiated under the auspices of WHO); and the 2005 revision of the International Health Regulations (IHR). Compared with the previous IHR that was focused on classical diseases of international importance, plague, yellow fever, and cholera, the 2005 revision is more powerful and practical in that it encompasses all acute public health risks of transnational significance. The new IHR defines broad reporting requirements and establishes the authority of the WHO to initiate disease-control actions, if necessary, through use of information sources other than country governments. The new IHR also requires countries to strengthen their existing surveillance capacities.

Many have hoped that the WHO would take a stronger role in the setting and enforcement of norms, given its extraordinary constitutional authorities and its quasi-legislative power to adopt binding regulations. The WHO has, however, leaned more toward providing technical advice than toward exerting bold, proactive leadership through binding norms and regulations.¹⁶

Given its mandate, the WHO is handicapped by a modest budget and by its dependent fiscal relationships. The proposed budget for 2010 to 2011 was \$4.94 billion before currency adjustments. Because only about 18.8% of the WHO budget comes from the dues assessments of member countries, its flexibility in focusing its program based on the scientific priorities it determines is constrained. Wealthier countries pay larger assessments and thus have more influence over the direction of WHO programming than poorer countries, which have the greater need for help. Moreover, the remaining 81.2% of the budget is projected as “voluntary contributions,” which are largely earmarked by donors for specific purposes.¹⁷ This arrangement contributes to fragmented programming and perhaps to certain donor-influenced compromises. In this century, the WHO also faces growing challenges. Although its members are sovereign governments, many other powerful actors (including nongovernmental entities, such as other UN agencies, foundations, corporations, and civil society organizations) have entered the global-health arena. Placating these competing interests is not a recipe for bold action.

The United Nation General Assembly and Health

The WHO is the lead UN agency for health. Owing to the increasing recognition that health is fundamental to the broader UN goals of fostering the international rule of law, global security, economic development, social progress, human rights, and world peace, health issues have now taken a more prominent place than they had in the United Nation’s first 50 years. In 2001, world leaders came together at the UN headquarters to adopt the 8 Millennium Development Goals (MDGs), 3 of which are focused on health.

The leaders of 192 UN member states agreed to partner to achieve these goals by 2015. The 3 health-related goals have directly provided high-level, consensus global health policy direction (**Box 1**). Another goal is related to hunger reduction. Regrettably, the MDGs lack a target for chronic diseases, such as cardiovascular diseases and cancers, which now account for more than 50% of the global burden of disease.

Since 2000, progress toward the MDG targets has been mixed. For example, between 2003 and 2008, the number of individuals infected with HIV placed on antiretroviral drugs rose from 400,000 to 4 million (ie, 42% of the 8.8 million people in

Box 1

Selected health-related United Nations millennium development goals

Goal 4: Reduce child mortality rate

Target 4A: Reduce the under-5 mortality rate by two-thirds, between 1990 and 2015

Goal 5: Improve maternal health

Target 5A: Reduce the maternal mortality ratio by three-quarters, between 1990 and 2015

Target 5B: Achieve universal access to reproductive health by 2015

Goal 6: Combat HIV/AIDS, malaria, and other diseases

Target 6A: Have halted and begun to reverse the spread of HIV/AIDS by 2015

Target 6B: Achieve universal access to treatment for HIV/AIDS for all those who need it by 2010

Target 6C: Have halted and begun to reverse the incidence of malaria and other major diseases by 2015

need). In developing countries, 37% of births in 2008 still took place without a trained birth attendant present, and maternal mortality remains shockingly high.¹⁸

As a result of the HIV/AIDS pandemic and its immense scale and impact on human life, dignity, rights, social cohesion, and economic development, a UN General Assembly special session issued a formal Declaration of Commitment on HIV/AIDS in June 2001.¹⁹ That declaration endorsed the establishment of the “Global AIDS and Health Fund,” which would pool contributions from countries and from the private sector to fund HIV prevention and treatment efforts. It also set out a policy approach to providing leadership; improving prevention, care, and treatment; preserving human rights; reducing the vulnerability of women and children at risk for or affected by HIV/AIDS; and mobilizing financial resources. A UN special session on noncommunicable diseases and their prevention will convene in September 2011.

As illustrated in **Box 2**, the UN has spawned a wide array of specialized agencies and other entities with direct or indirect interests in health. To some degree, these compete with the WHO for legitimacy and resources, and some have a significant role in global health governance.

In recognition of the multidimensional challenge of HIV/AIDS, the Joint UN Program on HIV/AIDS (UNAIDS) was launched in 1996. Its sponsors are the WHO and 9 other UN entities: the Office of the UN High Commissioner for Refugees (UNHCR); the UN Children’s Fund (UNICEF); the World Food Program (WFP); the UN Development Program (UNDP); the UN Population Fund (UNFPA); the UN Office on Drugs and Crime (UNODC); the International Labor Organization (ILO); the UN Educational, Scientific, and Cultural Organization (UNESCO); and the World Bank.

UNAIDS provides coordinated leadership and broad policy guidance on a wide range of areas pertinent to HIV/AIDS. It addresses HIV/AIDS prevention, care, and

Box 2

Major United Nations agencies and organizations with a significant health role

- Food and Agriculture Organization of the United Nations
- International Labor Organization
- Joint United Nations Program on HIV/AIDS
- Organization for the Prohibition of Chemical Weapons
- Office of the UN High Commissioner for Refugees
- United Nations Children’s Fund
- United Nations Development Program
- United Nations Development Fund for Women
- United Nations Drug Control Program
- United Nations Educational, Scientific, and Cultural Organization
- United Nations Population Fund
- United Nations World Food Program
- World Bank Group
- World Health Organization
- World Intellectual Property Organization
- World Tourism Organization
- World Trade Organization

treatment, especially among migrants, women and girls, peacekeepers, travelers, and orphans; it unites the relevant UN agencies, civil society organizations, governments, and the private sector; it advocates for rights, resources, and accountability; it empowers actors with strategic information; and it supports country leadership.

Created by the General Assembly in 1946 for post-war relief, UNICEF is now focused on providing on-the-ground, long-term humanitarian and developmental assistance to children and mothers in developing countries. Funded by governments and the private sector, the 2009 UNICEF expenditures totaled \$3.3 billion.²⁰

Based in Rome, the Food and Agriculture Organization of the United Nations (FAO) operates through regional offices and through more than 70 country offices around the world. With a biennial budget in 2008 to 2009 of \$929.8 million, the FAO leads UN efforts to enhance food security and to eliminate hunger, the number-one MDG. The FAO provides a neutral forum in which all countries can negotiate agreements and debate policy. Its experts disseminate technical information and assist countries with disease outbreaks and in developing sound agriculture policies. Where issues of human health and animal health intersect (eg, avian influenza or food safety emergencies), the FAO plays a role.

Although not actually a UN agency, the World Organization for Animal Health (previously known as the Office International des Epizooties and still known as the OIE) is also an intergovernmental organization; it seeks to perform global disease control for the animal population. Based in Paris and having regional and subregional offices worldwide, the OIE is an important partner of the WHO, the FAO, and the World Trade Organization (WTO). Like the WHO, it operates under the collective control and authority of an assembly of member countries. OIE relevance to global health governance stems from the often-underappreciated connection between human health and animal health. This connection, embodied in the one-health concept, is most evident in the context of emerging zoonotic diseases and food safety.²¹ In 2009, an Institute of Medicine (IOM) committee concluded that the OIE rules lacked critical provisions found in the 2005 WHO IHR, provisions that would be valuable for an organization involved in protecting animals capable of transmitting infections to humans. The committee recommended that the OIE create legally binding obligations for members to develop and maintain core surveillance-and-response capabilities, that the OIE be authorized to publically disseminate the animal-disease information received from nongovernmental sources when the member state does not do so in a timely and accurate way, and that the OIE director general be empowered to declare animal-health emergencies and related recommendations as appropriate.²²

The WTO, a member of the UN family since 1995, is primarily concerned with the rules of trade between nations. With globalization, however, trade and health are increasingly connected. The WTO has several agreements related to health and health policies, including the Agreements on Technical Barriers to Trade; the Sanitary and Phytosanitary Measures; the Trade-Related Intellectual Property Rights (TRIPS); and the Trade in Services. Although trade can be restrained for scientifically valid reasons related to health, relevant interpretations can be controversial. Some health issues relevant to WTO agreements include food safety and protection from zoonotic diseases; TRIPS patent protection for pharmaceuticals (to balance incentives for drug development vs ensuring affordable access to drugs); tobacco control; biotechnology; and the transnational migrations of health workers, patients, and investment in health services.²³

The World Bank Group, founded in 1944, is a critical source of financial and technical help for developing countries. Headquartered in Washington, DC, it employs more than 10,000 people worldwide. The bank provides low-interest loans, interest-free credits,

and grants to developing countries for health and other purposes. The World Bank consists primarily of 2 unique development institutions owned by 187 member countries: the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA). The IBRD serves middle-income and creditworthy poorer countries; whereas, the IDA mission is to serve the world's poorest countries. IBRD lending is primarily financed through AAA-rated bonds sold on the world's financial markets; the IDA funds come from 40 donor countries and are replenished periodically. Additional funds come from repayments of loan principal on long-term, no-interest loans. The IDA accounts for more than 40% of World Bank lending, and its loans are largely supervised and evaluated by the World Bank country offices. IDA loans have been used to improve sanitation and water supplies, support immunization programs, and combat the HIV/AIDS pandemic.

In fiscal 2009, the World Bank Health, Nutrition, and Population program lent \$2.9 billion, a 3-fold increase from 2008. Since 1997, the bank group provided \$17 billion in country-level project financing and \$873 million in private health and pharmaceutical investments. In fiscal 2009, the bank disbursed \$290 million for existing HIV projects and committed nearly \$326 million to new HIV/AIDS efforts. It also committed funds in fiscal 2009 for pandemic preparedness.²⁴

Bilateral Donor Governments

Achieving the MDGs will require an estimated \$20 billion to \$70 billion annually.²⁵ Higher-income countries have made substantial policy commitments to support the lower-income countries that have insufficient resources to provide a basic package of essential health benefits (estimated at \$34 per capita per year). Funding for action by wealthier countries has often been coordinated through governance mechanisms, including the annual Group of Eight (G8) summits. G8 progress toward these commitments is summarized in **Table 1**.

In 2002, the UN Millennium Project estimated that to meet the 2015 MDGs, the total overseas development assistance (ODA) from high-income countries would need to

Commitment	Progress by 2010
Provide at least \$60 billion to fight infectious diseases and improve health systems by 2012	The G8 is on track to meet this commitment with 2008 overseas development assistance disbursements exceeding \$12 billion.
Provide 100 million insecticide-treated nets for malaria prevention by 2010	The G8 is on track to provide more than 100 million insecticide-treated nets by 2010.
Mobilize support for the Global Fund to Fight AIDS, Tuberculosis, and Malaria (GFATM)	For the 2001 to 2009 period, the G8 contributions, including from the European Commission, to GFATM totaled \$12.2 billion, representing 78% of all contributions to the fund.
Support the Global Polio Eradication Initiative	For the period 2005 to 2009, G8 funding to the initiative was \$1.68 billion. G8 commitments for the period 2010 to 2012 total \$287.4 million.

Data from Muskoka Accountability Report: assessing action and results against development-related commitments (executive summary). 2010. Available at: http://canadainternational.gc.ca/g8/assets/pdfs/muskoka_accountability_report.pdf. Accessed March 22, 2011.

rise to 0.54% of gross national income (GNI). In absolute terms, the US government has contributed great amounts to ODA; however, as depicted in **Fig. 2**, the relative amount contributed in 2009 was only 0.20% of US GNI, a figure less generous than the percentage contributed by most European countries, Australia, and Canada.

The US government's global health program, compared with that of many other donor governments, cuts across many departments. It draws upon both the foreign-assistance structure but also the government's extensive public health capabilities. In addition to well-known actors, such as the US Agency for International Development and the US Centers for Disease Control and Prevention, executive branch agencies with a significant involvement in global health include the departments of state, defense, agriculture, homeland security, labor, and commerce, as well as the National Institutes of Health, the Food and Drug Administration, the Environmental Protection Agency, the Peace Corps, and the Health Resources and Services Administration. These agencies carry out programs in more than 100 countries and are overseen by more than 15 congressional committees.²⁶

The US financial commitment to global health has dramatically increased over the last decade, especially with the implementation of the President's Emergency Plan for AIDS Relief (PEPFAR) and the President's Malaria Initiative (**Fig. 3**). Originally authorized in 2003 at about \$15 billion, PEPFAR focused on 15 countries, mostly in Africa. Over its first 5 years, PEPFAR sought to support antiretroviral treatment for 2 million people infected with HIV; prevent 7 million HIV infections; and provide care, including care for orphans and vulnerable children, for 10 million individuals. The program has been viewed as a major success for US global health policy.²⁷ With wide bipartisan support, PEPFAR was reauthorized in 2008 for another 5 years at \$39 billion, with substantial increases in the prevention, treatment, and care targets. The legislation also authorized \$4 billion for tuberculosis programming and \$5 billion for malaria efforts.²⁸

Although PEPFAR represents a landmark US achievement in global health, it also illustrates how policy can be skewed by nonscientific factors. **Fig. 4** shows that among

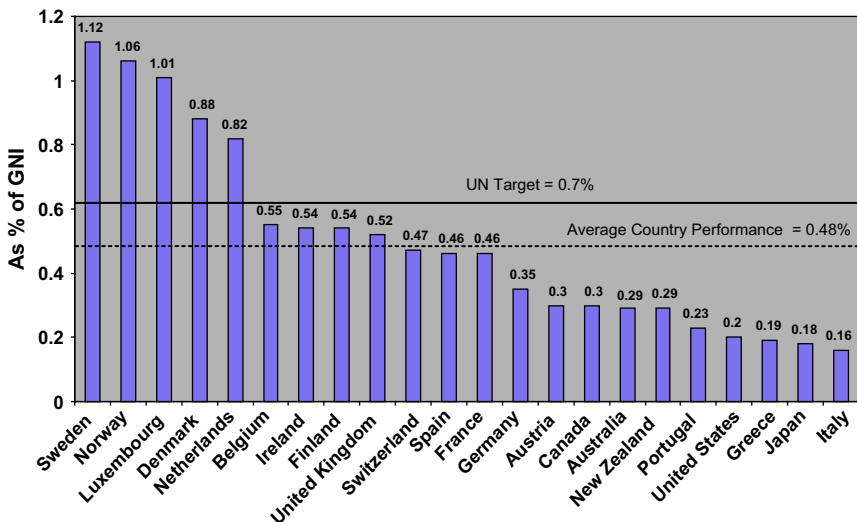


Fig. 2. Net Overseas Development Assistance (ODA) for 2009 as a percent of gross national income. (Data from OECD. Chart 1: Net Official Development Assistance in 2009. Available at: <http://www.oecd.org/dataoecd/17/9/44981892.pdf>. Accessed September 24, 2010.

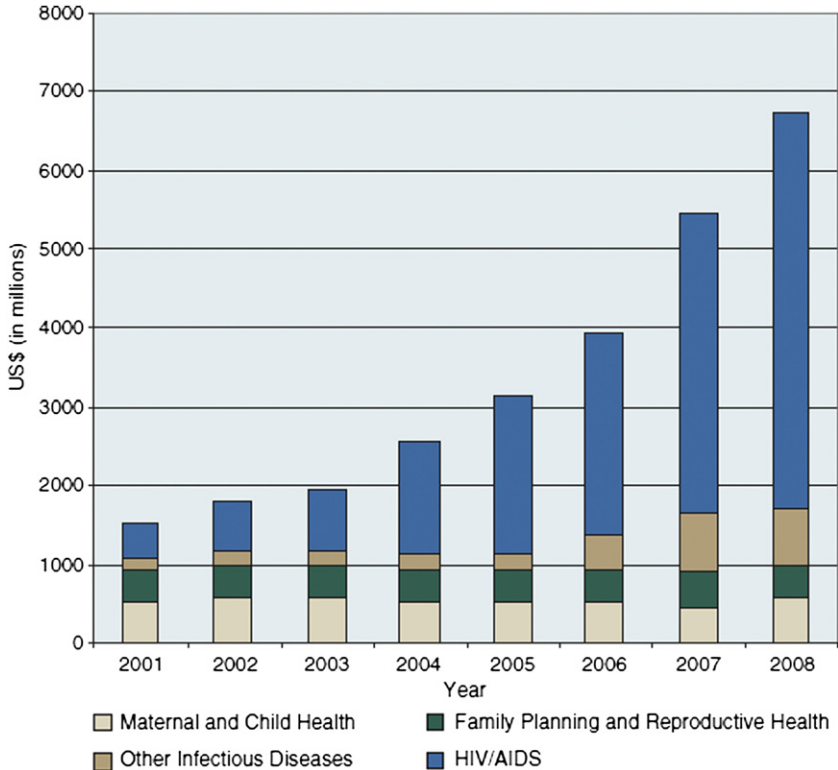


Fig. 3. US State Department (Global HIV/AIDS Initiative) and US Agency for International Development spending on global health (2001–2008). (From The Institute of Medicine Committee on the US Commitment to Global Health. *The U.S. commitment to global health: recommendations for the public and private sectors*. National Academies Press; 2009. p. 137; with permission.)

the top 7 causes of death for individuals younger than 70 years in low-income and middle-income countries, HIV/AIDS accounts for only 8% of those deaths. In fiscal year 2008, however, HIV/AIDS represented more than 52% of the \$9.6 billion in US ODA health funding. The 2009 IOM committee on the *US Commitment to Global Health* called for a rebalancing of this portfolio to better support initiatives against non-communicable diseases, malnutrition, and injuries.²⁹

The signature global health program of the Obama administration, the Global Health Initiative (GHI), aims to provide \$63 billion in health assistance between 2009 and 2014. Although HIV/AIDS still dominates the GHI, increased investments are being made for neglected tropical diseases, malaria, maternal and child health, and family planning (**Box 3**). The aims of the GHI are to implement a woman-centered and girl-centered approach; increase impact and efficiency through strategic coordination and integration; strengthen and leverage key partnerships, multilateral organizations, and private contributions; encourage country ownership and investing in country-led plans; improve metrics, monitoring, and evaluation; and promote research and innovation.³⁰

The US government's policy commitment to global health has been greatly lauded as a reflection of our vital health and economic self-interests, our humanitarian values,

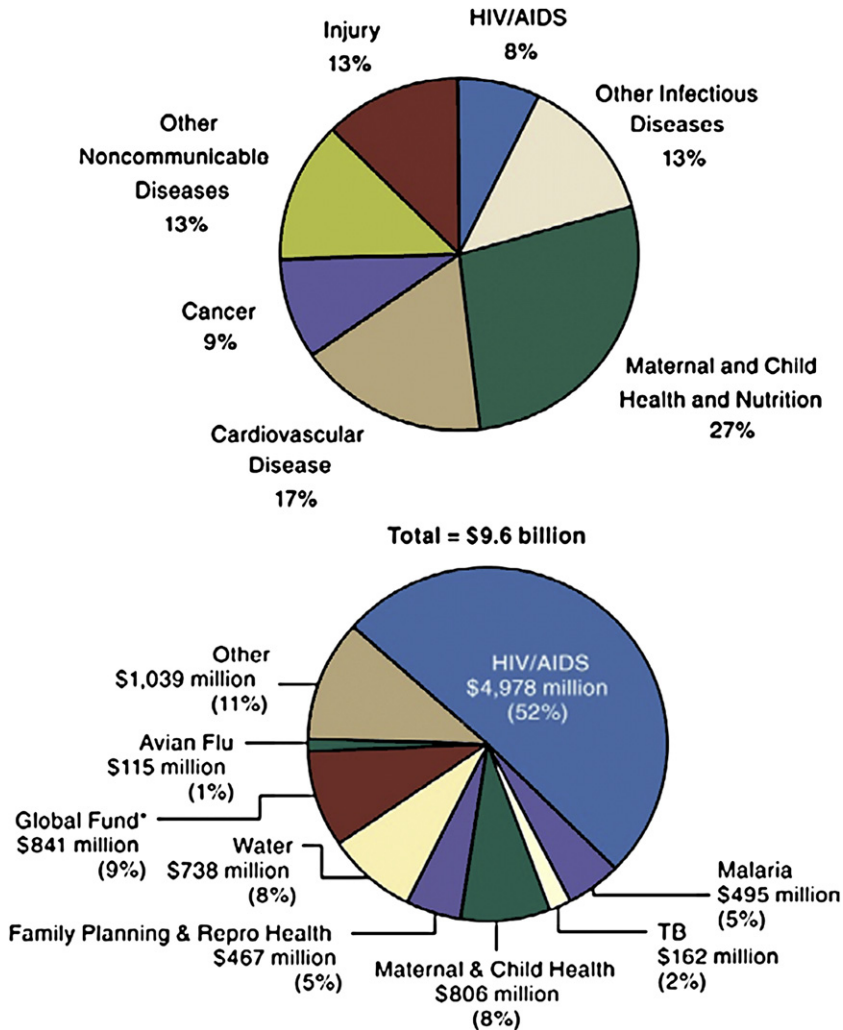


Fig. 4. Leading causes of death in individuals aged younger than 70 years in low-income and middle-income countries versus the distribution of US government funding for global health by major subsector and for the Global Fund, fiscal year 2008. (From The Institute of Medicine Committee on the U.S. Commitment to Global Health. *The U.S. commitment to global health: recommendations for the public and private sectors*. Washington, DC: National Academies Press; 2009. p. 139; with permission.)

and “smart power.”^{31–33} In many ways, it is an important form of diplomacy; however, some aspects of it may also hinder diplomatic prerogatives. Some forms of ODA can be used as leverage in diplomatic negotiations, but once a patient infected with HIV is taken into a PEPFAR-funded treatment program, it would be unethical for the US government to threaten the loss of those lifesaving drugs for diplomatic advantage.³⁴

Public-Private Partnerships

Beyond UN agencies and national governments, the global health enterprise is now a much more horizontal and networked endeavor than it was even 15 years ago.

Box 3**The goals and targets of the US government global health initiative**

- HIV/AIDS: The US President's Emergency Plan for AIDS Relief will: (1) support the prevention of more than 12 million new HIV infections; (2) provide direct support for more than 4 million people on treatment; and (3) support care for more than 12 million people, including 5 million orphans and vulnerable children.
- Malaria: The President's Malaria Initiative will reduce the burden of malaria by 50% for 450 million people, representing 70% of the at-risk population in Africa, and expand malaria efforts into Nigeria and the Democratic Republic of the Congo.
- Tuberculosis (TB): Save approximately 1.3 million lives by reducing TB prevalence by 50%, which will involve treating 2.6 million new TB cases and 57,200 multidrug-resistant cases of TB.

Maternal health: Save approximately 360,000 women's lives by reducing maternal mortality by 30% across assisted countries.

- Child health: Save approximately 3 million children's lives, including 1.5 million newborns, by reducing under-5 mortality rates by 35% across assisted countries.
- Nutrition: Reduce child undernutrition by 30% across assisted food-insecure countries, in conjunction with the President's Feed the Future Initiative.
- Family planning and reproductive health: Prevent 54 million unintended pregnancies by meeting unmet need for modern contraception. Contraceptive prevalence is expected to rise to 35% across assisted countries, reflecting an average annual increase of 2 percentage points. First births by women younger than 18 years should decline to 20%.
- Neglected tropical diseases: Reduce the prevalence of 7 neglected tropical diseases by 50% among 70% of the affected population, and eliminate onchocerciasis in Latin America by 2016, lymphatic filariasis globally by 2017, and leprosy.

Data from Available at: <http://www.usaid.gov/ghi/factsheet.html>.

Although this makes it harder for the WHO to lead, it also brings a wider array of talent and resources to bear on problems. **Fig. 5** illustrates an example of the partnership paradigm of global health governance today: the Roll Back Malaria (RBM) partnership, a 500-member collaboration. Even though the WHO was one of the founders of RBM and hosts the secretariat, it is not positioned as the dominant core of the effort. The RBM partnership not only works to facilitate policy coordination at the global level but also executes an operating framework with performance targets reflective of the MDG malaria goal; it articulates technical strategies and provides multidirectional accountability through its partners forum. A decision-making partnership board with 27 members (6 ex-officio) represents the 7 broad RBM constituencies and meets periodically. There are 21 voting members of the board representing foundations (1 seat), malaria-endemic countries (8 seats), multilateral institutions (4 seats), NGOs (2 seats), Organization for Economic Cooperation and Development (OECD) donor countries (3 seats), private sector (2 seats), and research and academia (1 seat). The Stop TB Partnership (<http://www.stoptb.org/>) also has many similarities to RBM.

Founded in 2000, the Global Alliance for Vaccines and Immunizations (GAVI) is another innovative partnership that links developing-world governments and donor governments; philanthropic foundations; the financial community; vaccine manufacturers from developed and developing countries; research and technical institutes; civil society organizations; and intergovernmental entities, such as WHO, UNICEF, and the World Bank. Immunizations funded by GAVI have prevented an estimated 3.4 million deaths in developing countries. GAVI also supports innovative financing

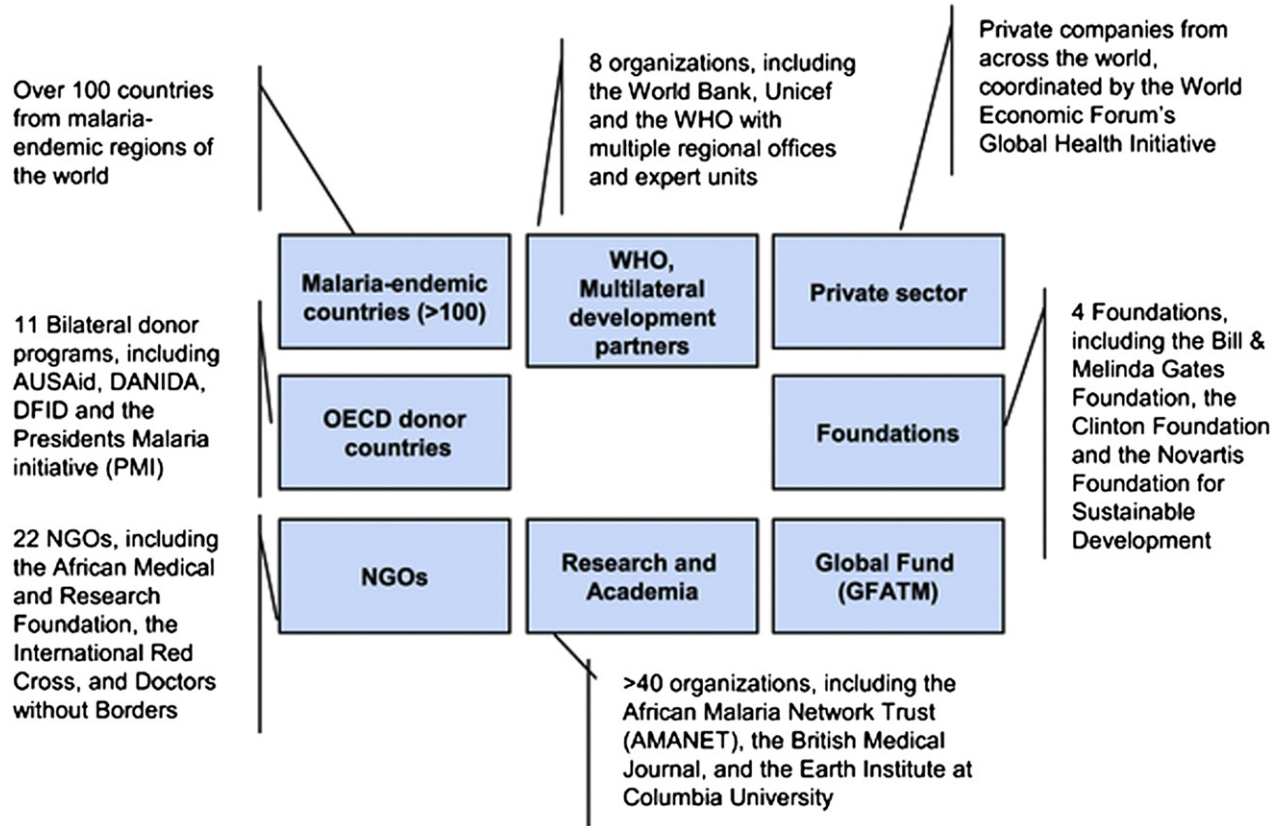


Fig. 5. Roll Back Malaria: Global Health as Partnership. OECD, Organization for Economic Cooperation and Development. AUSAID, Australian Government Overseas AID Program; DANIDA, Danish International Development Agency; DFID, UK Department for International Development. (From Szlezák NA, Bloom BR, Jamison DT, et al. The global health system: actors, norms, and expectations in transition. *PLoS Med* 2010;7(1):e1000183. doi:10.1371/journal.pmed.1000183; with permission.)

mechanisms, such as advanced market commitments to reduce the costs of immunizations needed by developing countries.

The 2001 UN Declaration of Commitment on HIV/AIDS called for the establishment of a global fund of pooled contributions to support HIV/AIDS needs. This Global Fund to Fight AIDS, Tuberculosis, and Malaria (GFATM), unlike the previously mentioned partnerships, has as its sole focus mobilizing and distributing financial resources in a manner driven by technically sound national plans and priorities and principles of transparency and accountability. The GFATM is a partnership between governments, civil society, the private sector, and affected communities. More than 40 countries have pledged funds to the GFATM; other major donors include the Bill and Melinda Gates Foundation, UNITAID, and Chevron. About \$21 billion has been pledged, of which more than \$16 billion has already been paid.³⁵ With funding approved for more than 500 programs in nearly 150 countries, the GFATM is the source of one-quarter of all international financing for AIDS globally as well as for two-thirds of that for tuberculosis and three-quarters of that for malaria.³⁶

An innovative fiscal contribution to solving the crisis of antimalarial drug resistance and the dwindling number of effective drugs has been the creation of the Affordable Medicines Facility for Malaria (AMFm). Conceived by the IOM Committee on the Economics of Antimalarial Drugs, the AMFm was designed to re-engineer market forces to favor the effective treatment of resistant malaria through the appropriate use of artemisinin-containing combination antimalarial drugs (ACTs). In 2004 the committee recommended the commitment of \$300 to \$500 million per year to subsidize the entire global ACT market to create a steady supply of affordable and desirably priced ACTs in all malarious areas.³⁷ Several donors accepted this recommendation. The AMFm was established by the GFATM and initially capitalized with more than \$146 million.³⁵

Philanthropic Foundations

Although the greatest sources of funding, technical support, and leadership will continue to come from donor governments, recipient governments, and UN agencies, contributions from the world of philanthropy have never been more significant. Early in the twentieth century, Rockefeller philanthropy supported efforts to eliminate hookworm, first domestically and then internationally. It has since taken on many other disease-control efforts directed toward conditions, including malaria, schistosomiasis, yellow fever, and vaccine-preventable childhood infections. In 1914, it created the China Medical Board to develop modern medicine in that country but arguably its most significant contributions to advancing global health governance were investments to establish the Johns Hopkins School of Hygiene and Public Health as well as schools of public health at Harvard and the University of Michigan. Reflecting the emergence of the new era in global health governance, in 1998 the Rockefeller Foundation established an initiative to create innovative new public-private partnerships, including the Medicines for Malaria Venture, the Global Alliance for TB Drug Development, and the International Partnership on Microbicides.³⁸

Over the years, many other foundations have made important contributions to facilitating global health action, including the Ford Foundation, Atlantic Philanthropies, the Carnegie Corporation, the Bloomberg Family Foundation, the Burroughs Wellcome Trust, the Burroughs Wellcome Foundation, and the Doris Duke Charitable Foundation. The most noteworthy newcomer is the Bill and Melinda Gates Foundation. With assets of approximately \$33 billion, the Gates Foundation is the largest private philanthropy in the world. Its current annual disbursements are approximately \$3 billion, much of which goes to global health. Among foundations, its major

commitments to GAVI (at least \$1.5 billion), the Rotary International polio-eradication effort (\$355 million), and the GFATM (\$650 million) give it a uniquely powerful and sometimes controversial voice in global health governance. Its investments in research, implementation, and advocacy encompass enteric and diarrheal diseases; HIV/AIDS; malaria, pneumonia, tuberculosis, and neglected and other infectious diseases; family planning; nutrition; maternal, neonatal and child health; tobacco control; and vaccine-preventable diseases. Private funding now accounts for almost one-quarter of global health aid.³⁹

Unlike the foundations previously mentioned, the William J. Clinton Foundation is not a grant-making organization. For nearly a decade, however, it has been a unique contributor to advancing global health. By capitalizing on the influence of former President Bill Clinton, this foundation has catalyzed many initiatives. Among these initiatives have been tremendous gains in access to HIV/AIDS treatment through negotiations with suppliers of drugs and diagnostic tests. Through successive agreements, suppliers to low-income countries have reduced the prices of first-line treatments by 50%, pediatric medicines by 90%, and second-line HIV/AIDS medicines by a cumulative reduction of 30%.⁴⁰

CORPORATIONS AND CIVIL SOCIETY ORGANIZATIONS

Over the last decade, the corporate sector has also been making an increasing mark on global health. Although corporate initiatives are too numerous to catalog in detail, their donations of drugs are especially noteworthy. Since 1987, for example, Merck has donated ivermectin for the control of onchocerciasis (river blindness) worldwide. In 1998, in partnership with GlaxoSmithKline, this commitment was expanded to include the elimination of lymphatic filariasis; ivermectin and GlaxoSmithKline's albendazole were coadministered in African countries and in Yemen (countries where lymphatic filariasis and onchocerciasis are coendemic). Over 21 years, more than 1 billion treatments for these infections have been provided through a large partnership.⁴¹ Johnson and Johnson donates enough mebendazole each year to treat 25 million children for intestinal helminthes; Boehringer Ingelheim donates nevirapine to prevent mother-to-child transmission of HIV. Pfizer has proved to be a valuable and innovative partner with its support for capacity-building activities, such as the Pfizer Global Health Fellows program. Each year, this program deploys up to 50 talented employees to work on high-impact, capacity-building projects in developing countries.⁴² Similarly, BD strengthens capacity through a partnership with PEPFAR to improve laboratory systems in countries highly affected by HIV/AIDS and TB.⁴³

The emerging corporate role in global health is not limited to companies focused on the business of health. Companies as diverse as ExxonMobil, Warner Brothers, and Nike have engaged in important partnerships focused on controlling malaria, HIV/AIDS, and violence against girls. American Cyanamid has donated millions of dollars of the larvicide temephos to support guinea worm eradication efforts. Formal business coalitions have developed to take on issues of malaria, tuberculosis, and HIV/AIDS.⁴⁴

The role of civil society organizations in global health predates all of those entities previously named. The WHO lists 189 NGOs with which it has an official relationship.⁴⁵ As the WHO notes:

*No longer the domain of medical specialists, health work now involves politicians, economists, lawyers, communicators, social scientists and ordinary people everywhere. The involvement of civil society has profoundly affected not only the concepts underpinning public health but the formulation and implementation of public health programs and policies as well.*⁴⁶

Civil society organizations span a wide array of secular and faith-based entities. They include groups with a disease-specific orientation; groups with a professional-specialty focus; charities that work on the ground; and global professional service organizations, such as Rotary International. (Rotary International is a key global partner in the WHO campaign for polio eradication.⁴⁷)

Perhaps the most exciting recent development in the United States has been the explosion in interest in global health education at universities. Suffice it to say that if governance is the constellation of mechanisms a society uses to effect collective action toward common goals, then the catalyst of the many new US multidisciplinary university programs in global health education will initiate and energize an unprecedented level of collective action.⁴⁸

CURRENT POLICY CHALLENGES FOR INTERNATIONAL GOVERNANCE

Despite the vast inflow of resources for global health, the remaining policy challenges are significant. Perhaps today's most acute global health challenge is achieving the 3 health-related MDGs. Current trends indicate that none of these basic targets will be near achievement by 2015. Overall access to care is still lacking or suboptimal for billions of people. Access to clean water and essential medicines is uneven. Modern pharmaceuticals are often unaffordable or unavailable. Globalization has brought some health benefits to the world's poorest, but it has also fostered the transnational spread of infectious diseases, the brain drain of skilled health care workers from developing countries, and the trade in poor-quality food and pharmaceuticals. Surveillance for human and animal diseases is of variable quality and the enforcement of the relevant regulatory regimes needs improvement. Despite the challenges that remain in coordinating the many diverse players now engaged in global health, the vast increase in the commitment of both private and public wealth over the last decade is to be celebrated. Commitments have gone far beyond money and have brought forth legions of individuals who choose to commit themselves in the global context to the universal value of health. Research is steadily discovering and developing new technological interventions. New mechanisms of cooperation have been developed, and there is a growing interest in implementation science and in program evaluation to increase accountability and effectiveness. Improved global health governance to better catalyze and coordinate collective action remains an essential underpinning to meeting the diverse challenges to saving lives in all parts of the globe.

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