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Globalization and Health

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Widespread consensus now exists that fundamental changes to human societies around the world are presently under way, a trend broadly referred to as globalization. Although this evolution is historically rooted in how all societies have formed and adapted over millennia, there is a sense that the changes of recent decades are more intense and accelerated. The resultant impacts of globalization potentially affect every individual and community.

The changes arising from globalization can be understood to extend to the field of public health in three main ways. First, processes of global change are shaping the broad determinants of health. Along with individual lifestyle factors, globalization is influencing determinants of health such as employment, housing, education, water and sanitation, and agriculture and food production. Moreover, general socioeconomic, cultural, and environmental conditions are undergoing a transformation. Overall, globalization is restructuring human societies in diverse ways, and hence potentially influencing a broad range of factors that affect individual and population health.

Second, a growing body of evidence indicates that health status and outcomes are being variably influenced by globalization. Many argue that globalization is giving rise to new patterns of health and disease linked to the consequent restructuring of human societies. These patterns include the spread of new and re-emerging diseases, as well as the reconfiguration of existing health challenges, including health inequalities within and across countries. In short, contemporary forms of globalization are producing winners and losers, and health outcomes are one reflection of this separation.

Third, as a consequence of the factors mentioned previously, societies must adapt their collective responses to changing health determinants and outcomes. Within the broader context of global governance, and specifically global governance for health (see Chapter 17), globalization is influencing healthcare financing and service provision in a diverse range of countries, as well as the ways in which many products and services that affect health are regulated and marketed. The need to negotiate collective arrangements within and across countries, within the health sector and beyond, and across the public and private sectors has created new challenges.

This chapter provides an overview of how globalization is affecting health determinants, health status and outcomes, and the regulatory environment for public health, including healthcare financing and service provision. These impacts can be collectively understood as the effects of the transition from international to global public health. The chapter begins by defining the often-used term “globalization,” its key drivers, and the precise changes it is creating. This explication is followed by a discussion of the links between globalization and shifting patterns of infectious and chronic diseases. Finally, the effects on collective responses to global health challenges are explored through consideration of the reform of healthcare financing and service provision, migration of health workers, and the restructuring of the pharmaceutical industry. The chapter concludes by outlining ways the public health community might potentially promote and protect health in an era of globalization, including the role of global health diplomacy.

What Is Globalization?

Globalization has undoubtedly caught the imagination of many, judging by the enthusiasm with which this term is so frequently used by scholars, policy makers, the business community, mass media, and the general public. Intuitively, the term articulates how the contemporary world is becoming more interconnected, with events in one part of the world having an impact elsewhere. If we are to understand the implications of globalization for public health, however, a more precise understanding of what it means is needed.

The Historical Context of Globalization

It is beyond the scope of this chapter to review the expansive literature on globalization. Moreover, the definition of this term remains highly contested, with ongoing debates about whether globalization is really happening, what its key drivers are, and, perhaps most controversially, whether it is having positive or negative impacts on human societies and the natural world. Nevertheless, beyond the rough-and-tumble of these debates, it is still possible to define globalization in more precise terms.

First, to assess whether a distinct phenomenon that can be called globalization is really happening, it is important to understand more recent developments in their historical context. Although many writers on globalization focus on changes taking place from the late twentieth century, it is helpful to see globalization as a longer process of social change occurring over the course of centuries, if not millennia (Berridge, Loughlin, & Herring, 2009). The early beginnings of globalization might be described as occurring when human species beginning with *Homo erectus* migrated out of Africa 1 million years ago, formed societies, and then interacted with one another across distant territories. This process accelerated and intensified with the development of long-distance modes of transportation (such as sea-going vessels) that enabled individuals to travel farther and in greater numbers. Major developments in social, political, and economic history marked the acceleration of globalization, such as the opening of the Silk Route between Asia and Europe, the arrival of Christopher Columbus in the Americas, the formation of the modern state system, European imperialism, the slave trade, and the Industrial Revolution. Characterizing all of these developments was an increased movement of people (voluntary or otherwise) and other life forms (plants and animals), capital, goods and services, and knowledge and ideas. Thus what many today refer to as

globalization is simply the contemporary intensification of the long-established interaction of human societies across territorial space.

Changing patterns of health and disease have been integrally linked to this historical evolution of human societies. A familiar example is the spread of bubonic plague during the fourteenth century by travelers along trade routes between Asia and Europe. The disease killed millions, and eventually led to the introduction of quarantine practices that sought to regulate trade to prevent further importation of the disease. Similarly, the transition of cholera from an endemic disease of South Asia to a pandemic disease from the 1830s onward was caused in large part by the social, political, and economic upheavals inflicted on local communities, economies, and ecosystems by European imperialism (Lee & Dodgson, 2002). The resulting cholera pandemics of the nineteenth century led to the development of the International Sanitary Conventions (later renamed the International Health Regulations, discussed later in this chapter).

Yet, although globalization can be understood as a historical process linked to the evolution of human societies, it remains necessary to identify what is distinct about the term “globalization” per se. How is globalization different from internationalization, liberalization, universalization, and Westernization—terms that are so often used interchangeably? What is “global” about globalization? The work of Scholte (2000) is helpful in this respect. He defines each of these “redundant concepts of globalization” in the following ways:

- *Internationalization.* The most common usage of the term “globalization” is in reference to the increasing interaction and interdependence of people in different countries. Various measures, such as trade, communication, and migration, certainly confirm that there has been a substantial increase in cross-border exchanges. Historically, however, there have been many periods of intensified interconnections since the establishment of the modern system of sovereign states some 500 years ago—a system that still defines international relations today. Because these interactions refer to exchanges between nations, or “inter-national” interactions, the term “internationalization” is an accurate description.
- *Liberalization.* This term is used especially often by advocates of neoliberal ideas, and their critics, to signal a global world that is defined as “one without regulatory barriers to transfers

of resources between countries.” Historically, we can identify periods where statutory constraints on cross-border movements of capital, goods, and services have been reduced. For example, the second half of the twentieth century saw a significant expansion of international trade and commerce as a result of widespread liberalization. The rounds of negotiations under the General Agreement on Tariffs and Trade (GATT), which was later replaced by the World Trade Organization (WTO), from the end of World War II to 1995 also led to successive reductions in trade tariffs. The continuation of this process since the mid-1990s, under multilateral, regional, and bilateral trade agreements, has often been referred to as globalization. Scholte (2000) argues convincingly that, in this sense, the term “liberalization” is appropriate and there is “little need now to invent a new vocabulary for this old phenomenon.” Distinguishing globalization from liberalization addresses criticisms that the former is nothing new.

- **Universalization.** Universalization generally refers to the spread of people and cultures to all corners of the world. Defined in this way, however, we can see that the human species has traveled intercontinentally for 1 million years or more. Similarly, several world religions have won followers worldwide, and trade has distributed goods and services on a worldwide scale for centuries. In this sense, the term “universalization” is deemed adequate and the new terminology of “globalization” unnecessary.
- **Westernization.** The term “Westernization” describes the belief that certain cultural values, aspirations, and behaviors characteristic of Western societies, and particularly U.S. society, are being adopted increasingly throughout the world. In this case, globalization is seen as a largely negative process of homogenization, a postindustrial form of colonization through Hollywood films, fast-food diets, and consumerism. Although it is undoubtedly the case that a certain degree of Westernization is taking place, Scholte (2000) argues that “intercontinental westernization, too, has unfolded since long before the recent emergence of globe-talk.” He suggests that the concepts of modernization and imperialism readily capture ideas of Westernization and “[w]e do not need a new vocabulary of globalization to remake an old analysis.”

Strictly speaking, Scholte casts aside these “redundant” terms, and reserves the term “globalization” to describe social interactions that not only cross national boundaries, but also transcend them. According to Scholte, only when territorial boundaries, based on physical geography, are circumvented or become irrelevant can we speak of globalization. Satellite communications, the Internet, illicit drug trafficking, and undocumented migration are examples of globalization in this strict sense. Thus it is important to be aware of how the term “globalization” is defined. A looser definition suggests that at least some aspects of what people call globalization today are not novel to the twenty-first century. A strict definition of globalization, as the transcendence of territorial boundaries, is more distinctive of the transition facing human societies in recent decades.

Key Drivers of Globalization

A second important definitional question is why globalization is occurring. In other words, what are the key drivers of globalization? McMichael (2001) usefully distinguishes between two types of global change.

The first type results from the interplay of natural forces (e.g., climatic dynamics, continental drift, evolution, and mass extinctions) that occurred during the history of the planet. For example, there have been five great natural extinctions since the advent of vertebrate life approximately 500 million years ago, the last of which marked the end of the dinosaurs 65 million years ago. This phenomenon was followed by a long period of cooling that eventually opened an evolutionary niche 6 million years ago “for an ape able to survive mostly out of the forest.” Over the past million years, there have been eight major glaciations, during which *Homo erectus* began to spread throughout Eurasia. It was only during the final interglacial period that *Homo sapiens* began to move out of northeast Africa and migrate worldwide. More recently, the rapid post-glaciation temperature rise between 15,000 and 10,000 years ago, amounting to approximately 5°C, caused substantial environmental changes and the extinction of many species of plants and animals.

The second type of global change is human induced, or anthropomorphic. These changes to the world occur as a result of human actions, individually or collectively, intentional or otherwise. The classic work on this subject is *The Earth as Transformed by Human Action* by W. C. Clark and colleagues (1990), which focuses on anthropomorphic changes to the Earth and its atmosphere. For example, the bulk of existing scientific evidence shows that global warming

of recent decades is the result of human activity such as the burning of fossil fuels and deforestation (United Nations Environment Program, 2001).

For the purposes of this chapter, the term “globalization” refers to human-induced rather than naturally occurring change. Globalization is driven, foremost, by the individual or collective actions of human beings—the formation of larger social groupings (e.g., megacities); the more frequent and farther-reaching mobility of populations; the adoption of larger-scale production and consumption patterns; the intensified use (and, increasingly overuse) of natural resources; the development and application of new technologies, knowledge, and ideas; and so on.

Some writers describe globalization as driven foremost by technology. It is assumed that communication and transportation technologies, in particular, are enabling people to travel the world more readily, interact with one another across vast distances, and carry out many forms of interaction that circumvent territorial boundaries. Hence, the advent of undersea cables, satellite communications, and the Internet, for instance, allows us to carry out financial transactions, information gathering and dissemination, and social interactions more quickly, cheaply and across greater distances (Hundley, Anderson, Bikson, & Neu, 2003). The availability of low-cost airlines, bullet trains, and automobiles allows millions of people to travel farther, faster, and more frequently. As Lawrence Summers, former Secretary of the U.S. Department of Treasury, stated, “Transportation is the industry that connects other industries . . . it is the key to globalization” (quoted in U.S. Department of Transportation, 2000).

Others argue that the key drivers of globalization are largely economic. Fukuyama (1992), for example, sees the emergence of a global economy as reflecting the ultimate triumph of capitalism over socialism. Liberal capitalism is described as “the final form of human government.” Fukuyama believes that no viable alternative to capitalism is possible and that we have reached the “end of history” as far as ideological development is concerned. It is this assumed economic logic of globalization that lies behind arguments favoring the further unleashing of globalization forces in the form of policies favoring trade liberalization, privatization, deregulation, and foreign direct investment. This perspective argues that all countries must embrace the inevitable and progressive march of globalization, defined in this way, or be left on the economic sidelines (International Chamber of Commerce, 1997). The stark social and environmental effects of economic globalization, in part cre-

ated by large-scale global financial crises, along with the dramatic shift in power to emerging economies such as China, India, and Brazil, suggest that global economic change continues apace.

Although technology and economics are certainly important drivers of globalization, it does not necessarily follow that globalization is somehow inevitable, singular, and rational in its current forms. Given that it comprises a set of change processes driven by human actions, it is vital to recognize that normative-based interests are embedded within current forms of globalization. Contemporary globalization is a manifestation of the vested interests of powerful individuals and groups who stand to benefit from it. This relationship suggests that not only is globalization within human capacity to shape and direct, but also that if the adverse social and environmental consequences resulting from globalization are to be minimized or at least shared fairly, it is imperative that these change processes be actively managed.

Effects of Globalization: Positive Versus Negative

This point brings us to the final issue of major debate on globalization—whether the resultant changes are having positive or negative impacts on human societies and the natural world. As described previously, globalization is having diverse effects on a wide range of social spheres, including the economic, political, cultural, technological, and environmental realms. These effects are creating both positive and negative impacts. Individually, each of us gains and loses from specific aspects of globalization. The Information Revolution has given us 24-hour access to news, entertainment, and personal messages, but at the expense of our ability to switch off and enjoy down time. The globalization of the food industry has potentially diversified our diets by, for example, offering access to fresh fruits and vegetables throughout the year. Yet the global spread of more intense farming methods, the transport of more and more products worldwide, and greater dependency on food imports are creating new risks.

It is also important to recognize that the distribution of these gains and losses varies considerably across population groups. For the relatively wealthy, educated, gainfully employed, literate (including computer literate), and mobile, globalization offers exciting opportunities for personal growth and material gain. The availability of an ever-expanding variety of goods and services, declining prices for many of these products due to economies of scale, the ability to retrieve information anytime from all corners of the

globe, and the possibility of traveling abroad for business or pleasure are attractive benefits from globalization to which many aspire.

In contrast, for the relatively disadvantaged in terms of socioeconomic status, education, geographical location, race, and gender, the net balance between gains and losses from globalization can tip more toward the negative. As well as being less able to enjoy its benefits, they shoulder a relatively heavier burden of its costs. Lower wages, greater insecurity of employment, poorer housing and sanitation due to rapid urbanization, and greater vulnerability to environmental degradation define the experiences of globalization by the world's poor across all countries. As well as failing to realize the promised "trickle-down" effects of globalization, the globally disadvantaged may very likely remain so given how current forms of globalization may be stacked in favor of some at the expense of others.

A good example is the current cost of food. Between 2006 and 2008, the cost of food increased by 57%, prompting social unrest among the poor in approximately 33 low- and middle-income countries as people struggled to buy basic foods. Several factors have been identified as contributing to the sharp increase in food prices, including the devaluation of the U.S. dollar, higher oil prices, and new demand among wealthier citizens in emerging economies for grains, cereals, and meat. Another key factor has been growing demand for biofuels as an alternative energy source (Food and Agriculture Organization [FAO], 2009). This new industry, which comprises large corporations based primarily in the United States, Brazil, and the European Union, is supported by hefty government subsidies to produce ethanol. This development, in turn, is contributing to food shortages (and correspondingly higher prices) as surplus food crops are purchased for ethanol production and farmers are encouraged to convert their land from production of food crops to ethanol-producing crops (Tenenbaum, 2008).

Another structural inequity of contemporary globalization is the flow of development aid. Few countries have lived up to the agreed commitment to give 0.7% of their gross national income (GNI) as official development assistance (ODA). After a decade of declining aid levels, aid volume rose by 11% during 2002–2003 following the UN Financing for Development Summit held in Monterrey (Manning, 2004), which elicited widespread support for achieving the Millennium Development Goals (MDGs) by 2015 (see Chapter 17, Exhibit 17-8). Nonetheless, funding of the MDGs has been woefully inadequate

(Lee, Walt, & Haines, 2004). Although further commitments were made at the 2005 G8 Gleneagles Summit to increase aid (Fratianni, Kirton, & Savona, 2007), it is now estimated that a further 55 to 90 million more people will remain in extreme poverty (defined as people living on less than \$1.25 per day) as a consequence of the 2008 global financial crisis and high-income countries attempting to reduce public expenditure (United Nations Development Program [UNDP], 2009).

The distribution of wealth through globalization has produced widening gaps not only between rich and poor countries, but also between rich and poor people within countries. Over the past two centuries, wealthier regions of the world led economic development, with massive inequalities emerging both between regions and between individual countries. By and large, however, income inequality within countries remained relatively stable, or was observed to decline as a middle class emerged. In the last 60 years, however, the situation has changed considerably, with countries such as China and India experiencing much more rapid economic growth than many Western countries historically. This trend, in turn, has changed the nature of global income inequality, with what appears to be a progressive equalization of wealth between regions and countries, but rising income inequality within countries (Firebaugh, 2003).

Alongside economic inequalities, health inequalities appear to be growing within and across countries as well. These trends are often more difficult to observe because of the aggregated nature of available data. Nonetheless, some evidence suggests that globalization is creating new patterns of health inequalities that do not conform to nationally defined populations. Many lower-income countries now have emerging upper and middle classes whose living conditions are increasingly similar to those in more affluent countries, yet who reside alongside large populations who remain deeply impoverished. Thus new patterns of winners and losers, in terms of the global distribution of health and ill health across countries, are emerging:

- Increased impoverishment among the globally disadvantaged has been accompanied by increased world hunger, with an estimated 1.02 billion people now undernourished. Most people suffering from hunger live in Asia (642 million) and sub-Saharan Africa (265 million). There are also 15 million undernourished people now living in high-income countries—a 50% increase since 2003 (FAO, 2009).

- A rising incidence of type 2 diabetes mellitus has been reported in children and adolescents in countries as diverse as the United States, Japan, Hong Kong, Singapore, Bangladesh, and Libya, among others. Until recently, most children with diabetes had type 1 disease. The rise in type 2 disease is associated with the increase in childhood obesity, which is linked in turn to the globalization of more sedentary lifestyles and diets containing a high fat, sugar, and salt content (O'Dea & Piers, 2002).
- The increased concentration of ownership in the tobacco industry, and the spread of the industry globally into so-called emerging markets, is expected to lead to a sharp rise in tobacco-related deaths. Today tobacco kills 5.4 million people annually, a figure expected to rise to 10 million by 2030, 70 percent of deaths to occur in the developing world (World Health Organization [WHO], 2008).

It is these sorts of global health inequalities, and a conviction that improved health conditions are a prerequisite for improved economic performance, that prompted the formation of the WHO Commission on Macroeconomics and Health in 2000 to investigate “how concrete health interventions can lead to economic growth and reduce inequity in developing countries.” Among its tasks was to recommend “a set of measures designed to maximize the poverty reduction and economic benefits of health sector investment” (WHO, 2000).

Within the context just described, it is important to understand how globalization is affecting the broad determinants of health. As defined by Dahlgren and Whitehead (1991), health can be influenced by a broad range of factors (see Chapter 3, Figure 3-1). As discussed in this chapter, for example, a growing body of evidence indicates that human-induced changes to the world's climate (global warming) are affecting the distribution and epidemiology of diseases such as malaria and dengue fever. Similarly, the intensified competition for foreign direct investment within a globalizing economy is believed to be leading to pressures not to adopt necessary health and safety standards in the workplace. Liberalized trade in food and drink, as well as tobacco products, may be leading to lifestyle changes that will increase populations' risk of many chronic diseases. What will be critical for the public health community to understand better, if these practitioners are to address the existing health gaps and prevent globalization from widening them further, is how these diverse changes are influencing each type of determinant.

Globalization: A Summary

In summary, the shift from international to global health can be defined in the following ways:

- Globalization must be understood within a historical context over centuries, with contemporary forms of globalization distinguished by the intensity of cross-border (and in some cases transborder) activities taking place and the geographic extent of their reach.
- A strict definition of globalization focuses on the transcendence of geography, whereas looser definitions often use the term to describe related phenomena such as liberalization, Westernization, and universalization.
- Globalization is affecting a broad range of social spheres.
- Globalization is affecting different individuals and population groups in diverse ways.
- Contemporary forms of globalization appear to be worsening inequalities in health for certain individuals and population groups.
- The capacity to address these inequalities effectively requires that we understand globalization in relation to the broad determinants of health.

The Global Dimensions of Infectious Disease

The Risks from Infectious Diseases in a Globalizing World

Globalization has the potential to affect a broad range of biological, environmental, and social factors that influence human infections. Indeed, the implications of globalization on infectious diseases have received considerable attention in recent years. Most importantly, the interaction between human populations and pathogens must be seen in evolutionary terms, within a long history of the development, adaptation, and interaction of human societies. As human societies have formed and interacted with local environments and with other human societies, patterns of infection have evolved accordingly. Agrarian societies, for instance, where populations live in close proximity to domesticated animals, demonstrate a greater susceptibility to zoonotic infections. In contrast, urbanization, which is characterized by larger numbers of people living in relatively close proximity, demonstrates greater susceptibility to so-called

crowd diseases, including infections spread by close human contact (e.g. plague, influenza). Greater mobility of individuals within and between societies raises the risk of infections spreading farther afield (e.g. SARS).

In this context, we can see how globalization might influence patterns of population mobility and, in turn, the susceptibility of specific populations to certain infections. A good example is the association of meningococcal disease with the centuries-old pilgrimage of Muslims to Mecca (in Saudi Arabia), known as the Hajj. Over the past 50 years, the scale of this annual event has grown markedly, with a 100% increase in numbers of pilgrims every decade since 1949. In 2009, an estimated 3 million people from more than 160 countries participated in the event, with the bulk of travelers coming from abroad. This growth has been supported by the expansion of facilities at the site, greater wealth among potential travelers, and increased accessibility of transportation (97% travel by air). Because the event brings ever larger numbers of people together from more widely dispersed communities, who then interact in close proximity and subsequently disperse again, the setting poses an opportunity for the global spread of infectious disease. The most well-known health consequence is regular epidemics of meningococcal disease that occur during and after the event. Cases linked to the pilgrimage have been reported in most parts of the world, with secondary epidemics occurring as long as 2 years later in destination countries (Saker, Lee, Cannito, Gilmore, & Campbell-Lendrum, 2004). Universal availability and mandatory use of quadrivalent conjugate meningococcal vaccine by all pilgrims appears to be successfully reducing the risk of such outbreaks (Borrow, 2009). In 2009, the Hajj took place during the H1N1 influenza pandemic which prompted Arab health officials to adopt travel warnings for high-risk groups and consider other restrictions (Al Jazeera, 2009).

Another association between globalization and infectious disease is the impact of global change (see Chapter 10) not only on the natural world, but also on built and social environments. The natural environment can be modified by local influences, such as pollution and growth of human settlements, as well as global-scale forces, such as changes in the world's biophysical systems that alter the climate. Environmental changes can either be natural or human induced, and all can play an important role in shaping human health (Saker et al., 2004).

A growing body of evidence has linked global climate change and the epidemiology of infectious diseases such as malaria, yellow fever, and dengue

fever. Current concerns about climate change focus on rising global average land and sea surface temperatures (global warming) and the increasing frequency of extreme weather conditions in many parts of the world. There is now substantial evidence that average temperatures have risen by 0.6°C since the mid-nineteenth century, with most of this change occurring since 1976. The UN Intergovernmental Panel on Climate Change (IPCC) predicts that average global temperatures will rise by 1.8 to 4°C by 2100. Although the causes of this phenomenon remain the source of some controversy, the IPCC concludes that much of the global warming during the last 50 years can be attributed to human activity (IPCC, 2007).

Detecting the influence of observed and predicted changes in global climate on infectious disease transmission is not straightforward. An irrefutable case would require standardized monitoring of exposure (climate), the outcome (incidence of a particular infectious disease), and other determinants of disease (e.g., immunity, treatment, socioeconomic factors) over many years. Such data sets are rare. Nonetheless, best estimates of the likely current and future impacts of climate change come from theoretical consideration of the known effects of climate on disease transmission, and from indirect assessment based on the reported effects of climate on infectious diseases in the present or recent past. This information tells us that, in general, climate constrains the range of infectious disease, whereas weather affects the timing and intensity of outbreaks (Dobson & Carper, 1993). Higher ambient air temperatures, along with changes in precipitation and humidity, appear to affect the biology and ecology of certain disease vectors and intermediate hosts, the pathogens they transmit, and consequently the risk of transmission (Githeko, Lindsay, Confalonieri, & Patz, 2000).

Diseases carried by mosquitoes are especially sensitive to meteorological conditions because these insects have fastidious temperature thresholds for survival and are extremely vulnerable to changes in average ambient temperature (Epstein, 2001). Available evidence suggests that in parts of the United States, for example, small outbreaks of locally transmitted malaria have occurred during unseasonably hot weather spells. Malaria is now prevalent in elevated regions where it did not previously exist, such as in the rural highlands of Papua New Guinea (Githeko et al., 2000). Climate change may also be a factor contributing over the past 30 years to the dramatic advance of dengue fever, a disease of the tropics transmitted by the *Aedes aegypti* mosquito. In Mexico, higher median temperatures during the rainy season were found to be a strong predictor of dengue

prevalence, while in the South Pacific region, outbreaks of dengue from 1970 to 1995 on the fringe of the endemic zone correlated with El Niño events (Hales, de Wet, Maindonald, & Woodward, 2002). Similarly, the first appearance of West Nile virus in the United States (which subsequently spread to Canada and, more recently, to southern Europe) is believed to be a consequence of mosquito proliferation following extreme summer drought conditions in the New York area (Githeko et al., 2000).

Although the increased risk from acute and “exotic” diseases and climate change are clearly worrying developments in terms of health impact, they are dwarfed by the challenge posed by the global spread of tuberculosis (TB). *Mycobacterium tuberculosis* has been present in the human population since antiquity, but it was not until 1944 that effective treatments (beginning with streptomycin) were developed. This discovery was followed by the development of a rapid succession of anti-TB drugs, leading public health experts to predict the long-awaited end to this ancient scourge.

In an age of globalization, however, we face a very different scenario. Today, one-third of the world’s population is infected with TB, and the disease caused approximately 1.6 million deaths in 2005. Today the largest number of deaths occurs in Southeast Asia, but the highest mortality per capita is in Africa, where the HIV/AIDS pandemic has been associated with rapid increases in the incidence of TB. Transmission of TB across borders has increased as a result of population mobility, inadequate healthcare delivery, and ineffective coordination of control strategies. For example, between 1990 and 2008, TB cases reported in the United States declined from 25,701 to 12,904. However, the proportion of cases occurring among foreign-born persons rose from 24% to 59%, of which most originated from Mexico and Central America. In 2008, Mexico was the country of origin for 23% of all foreign-born persons with TB in the United States (Centers for Disease Control and Prevention [CDC], 2009).

Of particular concern is the spread of drug-resistant forms of TB, which have arisen from the incorrect or incomplete use of existing regimens (see Chapter 5). Drug-resistant TB is now found in all regions of the world. The prevalence of multidrug-resistant TB (MDR-TB) is especially high in the former Soviet Union, China, Ecuador, and Israel. As of 2009, India had the world’s highest incidence of MDR-TB, with 25.7% of all TB cases in that country involving the drug-resistant pathogen (WHO, 2009c). As Mario Raviglione, director of WHO’s Stop TB Department, states, “It is in the interest of

every country to support rapid scale-up of TB control if we are to overcome MDR-TB. Passport control will not halt drug resistance; investment in global TB prevention will” (quoted in WHO, 2004a).

Perhaps the most serious infectious disease threat of all, in an era of intensifying globalization, comes from “democratic” infections that are relatively indiscriminate in the populations they can infect. The common cold, for example, is probably the most widespread illness experienced by humans. Caused by more than 200 different viruses (notably rhinoviruses) and readily transmitted by air and close contact, colds affect adults with an average two to four episodes annually. Fortunately, colds are usually mild and rarely life threatening. The prospect of an infection emerging with the transmissibility of a cold but with more lethal consequences is the public health community’s worst-case scenario. It was fears of this scenario that spurred the global response to the SARS outbreak of 2002–2003 (Exhibit 18-1).

Although the number of SARS cases and deaths was eventually less than feared, the experience focused attention on the likely capacity of public health systems to cope with the anticipated pandemic to come with the next major shift in the influenza A virus, which at the time of writing last occurred in April 2009 with the emergence of the H1N1 pandemic. Minor changes to the influenza virus (antigenic drift) happen continually over time, which explains its ability to reinfect populations. The change is usually so minimal that the previous year’s influenza or vaccine offers some protection. Occasionally (every 10 to 12 years or so), there is an abrupt, major change in the virus (antigenic shift) against which most people have little or no protection. The H1N1 pandemic has, to date, been relatively mild, with fewer deaths on average compared to seasonal epidemics of influenza. By comparison, the Spanish influenza pandemic of 1918–1919 killed an estimated 40 million people worldwide. Influenza A viruses are found in many different animals, including ducks, chickens, pigs, whales, horses, and seals. Although it is unusual for people to contract influenza infections directly from animals, sporadic human infections and outbreaks caused by certain avian influenza A viruses have been reported.

The danger arising from an antigenic shift in the influenza virus is magnified by globalization. In East Asia, where new strains of influenza more frequently originate, population pressures combined with intense farming methods and close contact with domesticated animals may increase the likelihood of mutations emerging. Once the virus emerges, population mobility means that the outbreak is likely to

Exhibit 18-1 The Global Warning from Severe Acute Respiratory Syndrome

The outbreak of severe acute respiratory syndrome (SARS) in 2002–2003 demonstrated how a globalizing world can be more vulnerable to infectious disease. SARS is a respiratory illness caused by a previously unknown type of coronavirus (SARS-CoV). Normally, coronaviruses cause mild to moderate upper respiratory symptoms. People with SARS develop a high fever (greater than 38°C), cough, shortness of breath, difficulty breathing, and other, more severe symptoms. Some develop severe pneumonia or respiratory failure that can be fatal. Between November 1, 2002, and July 31, 2003, there were 8,096 cumulative cases of SARS and 774 deaths in 27 countries (WHO, 2004b).

Although the eventual disease burden from SARS proved to be relatively low (by comparison, influenza causes 250,000 to 500,000 deaths each year worldwide), the outbreak was seen as an important lesson concerning the global management of such a public health emergency. The outbreak was described as unprecedented in the speed and extent of its global spread. Its airborne transmission, the lack of diagnostic technologies, the absence of an effective vaccine, and, perhaps most importantly, the disease's rapid spread via a globally mobile population made it "the first infectious disease epidemic since HIV/AIDS to pose a truly global threat" (Fidler, 2004). As described in a report by the University of Toronto, "In the Middle Ages, it took three years for the plague to spread from Asia to the western reaches of Europe. The SARS virus crossed from Hong Kong to Toronto in about 15 hours" (Joint Centre for Bioethics, 2003). It is believed that air travelers eventually spread SARS to 16 countries (Bonn, 2003).

The economic cost of the outbreak was estimated at between \$30 billion and \$100 billion (Smith & Sommers, 2003). These costs were distributed across a wide range of countries, illustrating the vulnerability of a globalizing economy to public health emergencies of international concern. Had the outbreak been more serious, or another outbreak occurs, the economic impact on the global economy would likely be even more substantial. As described in a report by the U.S. National Intelligence Council, "an outbreak of SARS in major trade centers again would be likely to have significant economic and political implications. . . . global trade and investment flows could seize up if quarantines shut down factories and shipments" (Monaghan, 2003). As such, the outbreak demonstrates the shared interest by all countries in ensuring effective management of such emergencies.

SARS served as an important opportunity to test existing systems of international health cooperation. The initial refusal by the Chinese government to report cases confirmed inherent weaknesses in the International Health Regulations, which required member states to report on only three diseases (yellow fever, plague, and cholera). WHO thus lacks the formal authority to command information that is potentially vital to the world's health, and action comes down to the willingness of the Director-General to challenge the mettle of sovereign states.

Once the outbreak was confirmed, the international community began to mobilize. Within two weeks of the Hong Kong outbreak, on March 12, 2003, WHO declared SARS to be a global health emergency. On March 17, the WHO collaborative multicenter research project on SARS diagnosis was established to identify the causative agent and develop a diagnostic test.

For many public health practitioners, WHO's handling of the SARS outbreak reaffirmed the organization's vital and unique role in global health. No other organization had the legitimacy to pull together the international health community. At the same time, the outbreak highlighted the inherent weaknesses in the International Health Regulations as well as the national public health systems of affected countries. SARS also demonstrated how infectious diseases can provoke public fears, fueled both by the unknown nature of the disease and by the mass media. Fortunately, SARS proved less serious than anticipated, providing a timely opportunity for the global public health community to prepare itself for the next emergency outbreak.

spread worldwide with great speed. After World War I, influenza spread globally within a month, facilitated by large-scale movements of civilians and armed forces. With the advent of modern transport systems, a new strain of influenza can reach anywhere in the world in a matter of hours, as the 2009 H1N1 pandemic demonstrated.

Enhancing Global Governance for Communicable Disease Prevention, Control, and Treatment

Of foremost importance to enabling the public health community to detect and respond to a communicable disease outbreak are epidemiologic and clinical data.

The challenges posed by globalization have reinvigorated efforts to strengthen how the global public health community might respond to infectious disease outbreaks. The historical underpinning for international cooperation on infectious disease control is the International Health Regulations (IHR). As mentioned earlier, this legislative framework has its origins in the International Sanitary Conferences of the nineteenth century, but the more formal version of the treaty was first ratified in 1951 by the 4th World Health Assembly (WHA). Between 1951 and 1981, the guidelines underwent a series of revisions, not only resulting in a name change (from "International Sanitary Regulations" to "IHR"), but also reducing

their scope to cover only three diseases—cholera, plague, and yellow fever. Yet while countries were obliged to report outbreaks of these diseases, compliance remained poor due to the economic consequences that often accompanied notification of disease outbreaks. In short, the framework lacked both the means and the incentives to encourage greater collaboration (WHO, 2002).

In 1995, the WHA authorized the WHO Director-General to substantially revise and update the IHR in the wake of concerns about the impact of globalization on human health. A series of disease outbreaks ranging from cholera in Latin America (1991), to plague in India (1994), to Ebola virus in Zaire (1995) added to new concerns following the discovery of the former Soviet Union's biological weapons program (1991) and a bioterrorist attack on a Tokyo subway (1994). At the time of the 2003 SARS outbreak, the IHR revision process remained incomplete, and the event served as a catalyst, lending much needed political impetus to develop a new framework. In 2004, an intergovernmental working group was convened to finalize the revision process. The revised IHR was subsequently completed and endorsed by the WHA in 2005, and the new treaty entered into force in June 2007.

Under the revised IHR, countries are obligated to report any adverse health event that has the potential

to spread beyond their borders (referred to as a “public health emergency of international concern” [PHEIC]). This requirement includes not only infectious disease outbreaks, but other threats to human health as well. To avoid replicating the compliance problems in reporting, the revised IHR permits WHO to be notified about PHEICs from both government and nongovernmental sources (Table 18-1). In addition, whereas the previous framework mainly emphasized the need to bolster border surveillance (to prevent the importation of disease), the new framework requires countries to strengthen their health systems so that they can detect, verify, and respond to health events before they threaten other countries.

Yet while the scope of the revised IHR has been expanded considerably, and the new version represents a marked improvement over the former regulations, weaknesses within the system persist, some of which were highlighted by the 2009 H1N1 pandemic. For example, one of the core problems under the former system was the ability of member states to impose trade and travel restrictions against countries experiencing disease outbreaks to an extent that might be excessive and even adversely harmful to affected economies. Although the revised IHR was ideally meant to address this challenge, in practice countries still can, and do, take such measures. In 2009, for instance, several countries banned live pig and pork

Table 18-1 Broadening Data Sources for Communicable Disease Surveillance

National	U.S. Centers for Disease Control and Prevention Pasteur Institutes, Sentiweb UK Public Health Laboratory Service Health Canada WHO country offices
Regional	WHO regional offices European Community (EC) Rapid Alert System for Non-food Products (RAPEX) European Network for Diagnostics of “Imported” Viral Diseases (ENIVD) Pacific Public Health Surveillance Network (PACNET)
International	WHO UN Global Program on HIV/AIDS UN High Commissioner for Refugees UN Development Program UN Children’s Fund
Global	Global Public Health Intelligence Network (GPHIN–Health Canada) PROMED (Federation of American Scientists) TravelMed Red Cross/Red Crescent Médicins Sans Frontières (MSF) Merlin International Rescue Committee

meat imports despite the absence of scientific evidence that humans could contract the H1N1 (“swine flu”) virus from eating or working with pigs (WHO, 2009b). As such, no system of governance currently exists to regulate the economic impact on countries of disease outbreaks, and countries continue to suffer losses disproportionate to the actual health risk posed.

To summarize, human populations and infectious diseases have historically coexisted and coevolved over time, and it may be tempting to overlay the threat from infectious diseases being created by globalization. This unwarranted suspicion can result in the stigmatization of certain population groups (e.g., migrant populations, ethnic minorities) and the skewing of resources and policy priorities. Nonetheless, changes in global patterns of human settlement and interaction among human societies have led to corresponding changes in infectious disease susceptibility. It is necessary, in this context, to ask how contemporary forms of globalization are changing the epidemiology of some infectious diseases, and how corresponding adaptation by human societies is needed to protect and promote human health.

The Globalization of Chronic Diseases

Chapter 7 highlights the impact of chronic diseases and risks on health and economies. As mentioned in that chapter, important processes of globalization—trade, foreign investment, marketing, and technological change—have implications for the spread and alleviation of chronic diseases. These issues are expanded upon in this section.

Trade Liberalization and Chronic Diseases

Tobacco, alcohol, and food products are being produced and marketed on an unprecedented scale by transnational corporations (TNCs) seeking to increase their economies of scale and, therefore, their profits through expansion into new markets across the world. In the case of tobacco, trade liberalization has facilitated a shift in market share, from traditional markets to emerging markets in Asia, Latin America, the Middle East, and the former Soviet Union. Most overtly, the United States used bilateral trade relations in the late 1980s to exert pressure on countries such as Thailand, Taiwan, and South Korea to open up their domestic markets to cigarette imports. The Uruguay Round of the GATT, which concluded in 1994, liberalized trade in unmanufactured tobacco.

Since 1995, multilateral trade agreements under the WTO have significantly reduced tariff and nontariff barriers to tobacco trade (Bettcher et al., 2003). In addition, pressure has been exerted by tobacco manufacturers’ home countries to include tobacco in negotiations to liberalize the agricultural sector, and industry objections have squelched stronger tobacco control measures under the terms of trade agreements (Peterson, 2010). This has resulted in increased and more competitive tobacco trade between countries, leading to increased supply, more extensive marketing, and lower prices.

More research is needed to understand the implications of changing trends in food production for chronic diseases. For example, the trade of oilseeds and corn for livestock feed may be associated with the dramatic increase of livestock production in many low- and middle-income countries and associated rise in meat consumption. Another trend that may have implications for dietary patterns is the increased trade of high-value processed agricultural products (e.g., meats, dairy products, frozen foods). Exports of these products from the United States are growing faster than any other category of agricultural exports (Bolling, 1998; Whitton, 2004). The global health implications of increased marketing of processed and fast foods are discussed later in this chapter.

The Impact of Foreign Direct Investment

Foreign direct investment (FDI) has played an unprecedented role in recent decades as a source of capital for economic growth and development. FDI is an investment by an enterprise from one country into an entity or affiliate in another, in which the parent firm owns a substantial but not necessarily majority interest. The foreign enterprise becomes an affiliate of the parent company, thereby creating or joining a TNC. FDI is one of the mechanisms through which TNCs enter new markets, and it reflects an intention to remain invested over the long term.

Over the past 25 years FDI has risen dramatically, largely among high-income countries. Since the 1990s, however, emerging markets in low and middle-income countries have attracted substantial FDI. In 2002, \$162 billion of foreign money flowed into the low- and middle-income world, mainly from TNCs based in high-income countries (United Nations Conference on Trade and Development, 2003). The global economic and financial crisis of the late 2000s saw a sharp decline in FDI worldwide, from more than \$2 trillion in 2007 to less than \$1 trillion in 2009. Importantly, this decline has been less marked in emerging economies, which, for the first time, have

attracted more FDI than high-income countries (UN Conference on Trade and Development, 2009).

These trends in FDI can have important implications for the globalization of chronic diseases where it represents a strong investment in tobacco, unhealthy food, and alcohol products, especially in emerging markets where there is the most potential for growth in consumption. The privatization of national industries can offer further opportunities for FDI, notably where such products can be more expensive to produce abroad and transport, which in turn encourages their local production by subsidiaries or licensed manufacturers (Bolling, 2002; Walkenhorst, 2001). Finally, regional trade agreements can create incentives for TNCs to relocate within trade-partner areas to take advantage of more favorable tariff rates.

Evidence suggests several trends in FDI warrant closer scrutiny in relation to chronic diseases (Exhibit 18-2). For example, 10 of the 100 largest TNCs (ranked by foreign assets) manufacture tobacco, food, or alcohol, as do a high proportion of the largest affiliates of foreign TNCs in emerging economies. The substantial FDI by these companies can bring much-needed capital, skills, technology, and goods and services to the local market, encouraging host countries to liberalize investment rules and other incentives to attract FDI (Organization for Economic Cooperation and Development [OECD], 2000). At the same time, such regimes can preclude the introduction of regulations or standards intended to protect public health interests. For example, the desire to attract FDI may bring with it pressures for lower tax rates, thereby re-

Exhibit 18-2 The Food Industry, Foreign Direct Investment, and Chronic Disease Risks

Foreign direct investment has so far been overlooked as an important driver of the diet transition. FDI into food processing, service, and retail has become particularly significant since the mid-1980s. Food companies, based mainly (but not exclusively) in Western Europe and the United States, have a significant international presence.* By 2001, 12 transnational food companies (TFCs) were among the top 100 holders of foreign assets globally, double the number in 1990. The foreign assets of these companies amounted to \$257.7 billion in 2002, an enormous increase (658%) from \$34 billion in 1990. During the same period, foreign sales increased from \$88.8 trillion to \$234.1 billion (164%) (Hawkes, 2004b). By 2007, global sales in packaged foods were estimated to have reached \$1.3 trillion, and the top 10 companies accounted for 35% of the revenue (ETC Group, 2008). A high proportion of foreign assets and sales are in high-income countries, but foreign affiliates of TFCs are frequently among the largest companies in the tertiary sector in the low- and middle-income world. This factor has contributed to a “nutrition transition” in terms of food availability and consumption patterns, as diets based on local staples have given way to nutritional regimes that contain higher levels of fats, animal products, and sweeteners (Thow & Hawkes, 2009).

Globally, food processing is the most important recipient of FDI relative to other parts of the food system, including the farm sector. American FDI into foreign food processing companies grew from \$9 billion in 1980 to \$36 billion in 2000, and between 2000 and 2006 U.S. FDI in food processing virtually doubled to \$67 billion (Hawkes & Murphy, 2010). As FDI has increased, the allocation of investment has shifted toward highly processed foods for sale in the host market, and away from products for export to the home market and those produced by primary processing (although these items may remain important in certain cases). The tendency to allocate investment into highly processed foods is illustrated by the economies of Central and Eastern Europe, and the Baltic states, which attracted soaring rates of FDI in the food sector in the 1990s. Such investment largely concentrated on soft drinks and confectionery. The confectionery sector in Poland, for example, attracted FDI of \$963 million between 1990 and 1999—more than the FDI in meat, fish, flour, pasta, bread, sugar, potato products, fruits, vegetables, vegetable oils, and fats put together (Hawkes, 2004b). By 2003, FDI in Poland’s food processing industry had reached around \$3.4 billion and by 2006 it had almost doubled to \$6.6 billion (Jansik, 2009). On a global scale, this trend has led to the dominance of foreign investors in the highly processed food sector. In China and Mexico, foreign investors dominate packaged foods, such as instant noodles, soft drinks, snacks, sweet biscuits, and fast foods.

Processed food sales in low- and middle-income countries are lower than those in high-income countries (one-fourth or less of all food expenditures compared with almost half). Yet wider availability, lower prices, and new purchasing channels are driving rapid sales growth. The annual sales growth for processed foods is approximately 29% in low-middle-income countries, compared with 7% in upper-middle-income countries. The market for highly processed foods is expanding fast, and TFCs clearly perceive that their best chances for sales growth lie in low- and middle-income countries. Vietnam, China, and Indonesia are expected to be the fastest-growing markets for packaged food retail sales over the coming years, with growth rates forecasted at 11%, 10%, and 8%, respectively. Korea, Thailand, India, and the Philippines rank among the top 10 fastest-growing markets, with total packaged food retail sales expected to grow 5% to 7% annually (Hawkes, 2004b). It is still not clear how the consumption of highly processed foods has affected the diets and nutrition of different households and individuals, but it is likely to fuel increases in diet-related chronic diseases unless effective policies are implemented.

Two potential approaches to influence FDI and redirect the diet transition toward better health have been proposed. One would be to impose health-oriented conditions on FDI by TFCs. These policy options (and others) are contained in the

continues

Exhibit 18-2 continued

WHO Global Strategy on Diet, Physical Activity and Health, and many countries have the structures in place to implement them. Through its position upstream, FDI would be a single entry point at which to implement a multiple range of public health policies.

A second option would be to look directly to TFCs for a solution. An alternative to the regulatory option might be to encourage TFCs to invest in healthier products, such as less salty snacks and baked goods and more low-fat products, nutrient-rich foods, or even foods with functional benefits. At the same time, this approach would ensure that TFCs do not market unhealthy products and lifestyles to children.

These two different approaches reflect one of the fundamental tensions in policy development today: how to balance the role of government and transnational corporations. A mixed approach will probably evolve over time.

*Here the term “food company” refers to a company that is involved in the processing, service, or sale of highly processed food. It includes diversified companies that manufacture, serve, or sell products other than food, such as personal care products or tobacco. It excludes companies concerned solely with agricultural production, processing, or research.

moving a significant barrier in discouraging tobacco consumption. In the food sector, TNCs may exert pressure on government agencies to minimize labeling requirements or nutritional standards, or to soften restrictions on marketing and advertising such as to children. Such negotiations are often conducted between TNCs and ministries of trade and finance with minimal public health input, despite the fact that they have obvious public health consequences.

Gilmore and McKee (2004) offer a case study of how British American Tobacco and Philip Morris—the world’s two largest transnational tobacco companies—are among the largest foreign investors in Russia and Moldova. Given their importance as source of new investment, these companies have been able to negotiate advantageous conditions that benefit their businesses, such as tax breaks, exemption from monopoly regulation, and even a role in drafting health legislation. The International Monetary Fund (IMF) has traditionally supported the privatization of state-owned enterprises in emerging markets, including the tobacco industry. Although this position may make sense from a macroeconomic perspective, it ignores the impact that privatization without appropriate government regulation and tax policies can have on a major risk factor in health. Importantly, if the IMF were to draw on the World Bank’s more recent policy prescriptions for tobacco control, and support governments prior to privatization, macroeconomic and health goals could be met together.

The Globalization of Marketing, Advertising, and Promotion

The increasingly global pattern of consumption for certain goods and services has been facilitated, in large part, by marketing, advertising, and promotion campaigns. These activities, in the form of brand names, imagery, logos, and messages, seek to influence consumer behavior.

TNCs invest heavily in marketing, advertising, and promotion of their products, in the process creating a growing number of regional and global brands to be sold in diverse local settings. From a public health perspective, evidence suggests such activities have been effectively used to increase the consumption of tobacco, alcohol, and unhealthy food products (Babor, 2003; Jackson, Hastings, Wheeler, Eadie, & Mackintosh, 2002). In low- and middle-income countries, regulation of such activities can often be relatively weak, enabling TNCs to target selected population groups, such as the poorly educated, children, women, or young adults, who represent promising targets for market growth but can be particularly vulnerable to commercial claims (Hawkes, 2002, 2004a). In Asian countries, for example, tobacco companies use glamorous images to advertise “light” and “mild” cigarettes specifically to young adults—notably, girls and women (Lee, Carpenter, Challa, Lee, Connelly, & Koh, 2009; Mackay & Eriksen, 2002). Similarly, some food companies attempt to increase “stomach share” in the low- and middle-income world through campaigns aimed at children. Where high-calorie products are involved, such efforts are believed to be contributing to rising levels of obesity by adversely influencing the “human energy equation” (Witkowski, 2007).

Globalization, Politics, and Chronic Disease Prevention

In recent years, greater efforts have been made to address global influences on chronic diseases through collective action across countries. The experiences of developing the Framework Convention on Tobacco Control (FCTC) and the Global Strategy on Diet and Physical Activity and Health provide valuable lessons for public health.

From an economic perspective, both tobacco and sugar have been regarded as highly valuable export

commodities. Both have been highly subsidized and protected, and seen as a source of export earnings. When evidence that they could be of harm to health first appeared, the response by producers and manufacturers was similar: consistent denial of the evidence, creation of front groups to oppose public health action, and intense and sustained lobbying of policy makers to thwart stronger regulation at the national and international levels.

As evidence of the public health harms of tobacco use and poor diet accumulated, two different approaches were taken by governments, in large part influenced by the intensity of industry pressure and the degree of acceptance by the public of the need for government intervention. Nordic countries, supported by Canada, have argued that for “healthy choices to be the easy choices,” social, environmental, and commercial influences on health need to be addressed through government regulation, fiscal policy, and intersectoral action, combined with health education. In contrast, the United States has given primacy to the importance of individual responsibility and, therefore, health education. Generally, industry has supported the U.S. approach, whereas many nongovernmental organizations (NGOs) have supported the Nordic approach. These approaches have also been debated at every WHO session that addresses public health and behavioral change.

Enhancing Global Governance for Chronic Disease Prevention and Control

As the factors influencing chronic diseases have become increasingly global, collective action to prevent and control them has also been forced to adapt accordingly. This governance has proved difficult to achieve on a global level, however, for several reasons.

First, among the many global health players influencing the broad determinants of chronic diseases, some have yet to become fully engaged in such activities. These entities include the World Bank, IMF, CDC, World Heart Federation, International Union Against Cancer (UICC), World Medical Association, representatives of the WHO collaborating centers, International Federation of Pharmaceutical Manufacturers Association (IFPMA), UNICEF, and FAO. Some of these organizations do not see themselves as playing a major role in public health. The mission of the FAO, for example, is to raise nutrition levels, promote food security, improve agricultural productivity, better the lives of rural populations, and contribute to the growth of the world economy. These goals can bring the FAO into conflict with WHO’s efforts to re-

duce tobacco and sugar production and consumption. The importance of promoting intersectoral action for chronic disease control requires a more sustained and rigorous effort that should include deeper involvement with those responsible for agriculture, transport, urban design, and education policy.

The experience of the ad hoc Task Force on Tobacco Control, as an example of efforts to strengthen policy coherence on tobacco control during negotiation of the FCTC (see Exhibit 18-3), suggests that considerable progress can be made by having the FAO, World Bank, IMF, and others develop a shared approach to a public health problem, and use their different channels of influence to affect change at the country level. The establishment of similar interagency bodies on chronic diseases could improve policy coherence among different institutions, identify institutional strengths and weaknesses, lead to development of actions based on comparative advantages, and define potential partnerships and collaborations. Comparable models of governance could be developed at the country level.

Second, fuller consideration might be given to which incentives are needed to encourage global industries whose goods or services influence chronic disease risks and outcomes, as well as members of the investment community, to act in ways that are both profitable and beneficial to public health goals. This approach would require, among other things, careful consideration of the regulatory environment and financial mechanisms in place for goods and services that contribute positively to health. Agreement on global standards concerning production, manufacture, and marketing is needed, as is enforcement of such standards at the national level. In the absence of binding global agreement, “soft” measures to encourage compliance may be effective. Metrics related to desired corporate behaviors and actions, for example, might be developed to provide consumers and investors with indices of compliance with agreed-upon public health standards. Such metrics are already used to report on ethical business practices and environmental sustainability (e.g., Dow Jones Sustainability Index, Global Reporting System). In addition, more critical analysis of the potential to develop reporting systems for public health, which could reward progressive companies that are supportive of health goals, is needed.

Third, there is a need for enhanced capacity building for tackling chronic diseases, notably in the low- and middle-income world (see Chapter 7). Without significant investment in capacity building, global progress in chronic disease prevention and control

Exhibit 18-3 Building Policy Coherence for Global Tobacco Control

Policy coherence on tobacco control was strengthened among UN organizations in the following ways:

- The Policy Strategy Advisory Committee (PSAC) was established by WHO to improve policy coherence on tobacco control, solidify support for WHO activities, and expand the base of advocacy and action. The PSAC includes representatives from the World Bank, United Nations Children's Fund (UNICEF), World Self-Medication Industry (WSMI), International Nongovernmental Coalition Against Tobacco (INGCAT), Campaign for Tobacco-Free Kids, and U.S. Centers for Disease Control and Prevention (CDC).
- WHO was asked by the UN Secretary-General to convene the Ad Hoc Inter-Agency Task Force on Tobacco Control. The Task Force replaced the former UN tobacco focal point, which had been situated within the UN Conference on Trade and Development (UNCTAD). This move shifted the tobacco debate within the UN from one of addressing issues relating to supply of tobacco as a first-order priority (i.e., protection of tobacco farming) to one of putting the protection and promotion of health first. Fifteen UN organizations, as well as the World Bank, the IMF, and the WTO, participate in the work of the Task Force.

Among nongovernmental organizations, policy coherence was improved in the following ways:

- In 1999, WHO obtained funding from the UN Foundation to develop partnerships with civil society organizations (CSOs) to raise awareness and counter the global marketing practices of the tobacco industry. Based on the successful California counter-advertising campaign, which had pioneered the strategy of exposing the tobacco industry's behavior, the "Don't Be Duped" campaign sought a new language, a new idiom, and a new sense of purpose and direction for tobacco control. One particularly effective campaign, aimed at countering the rise of the Marlboro man as the twentieth century's most successful global advertising icon, was to replace the traditional "No Smoking" sign with an image of two Marlboro cowboys riding into the sunset with one confiding to the other that he has cancer. The campaign engaged and supported nationally based tobacco control champions and became an important avenue for accessing nongovernmental partners to support and advocate for the FCTC.
- WHO ensured early civil society participation in the FCTC process when it held its first-ever public hearings in October 2000. All interested parties, including representatives of the tobacco industry, were invited to present their views on the FCTC. During 2 days of testimony, more than 90 public health groups took the floor, along with representatives from all 4 leading tobacco companies (Philip Morris, British American Tobacco, Japan Tobacco International, and Imperial Tobacco). The hearings were widely reported on by the world's media, and the publicity helped to intensify the emerging global tobacco control debate. Although some tobacco industry representatives challenged the evidence base linking passive smoking to disease, the public hearings did provide the first truly global forum in which tobacco companies admitted the addictive and deadly effects of active smoking.

will be limited and unsustainable. Considerable expertise is already available within academic centers in high-income countries and could, with modest increased support, be made more widely available. Twinning arrangements between researchers in high- and low-income countries, such as those supported by the U.S. National Institutes of Health's Fogarty International Center, could be pursued with urgency. "South-south" cooperation among low- and middle-income countries should be particularly encouraged. A mixture of short-course and longer degree programs in chronic disease control for low- and middle-income countries could be stimulated through exchanges with major donor agencies.

Finally, there is need for active support for the implementation of agreed-upon global norms and standards to enhance health promotion. The Bangkok

Charter on Health Promotion in a Globalized World, which was ratified in 2005, identifies actions, commitments, and pledges required to address the broad determinants of health in a globalized world. Unfortunately, it remains a statement without clear mechanisms or authority to enforce its provisions. More progress has been achieved through the FCTC, which, as of May 2011, had been ratified or acceded to by 172 countries. As a binding treaty, the FCTC represents a milestone for the promotion of public health by requiring each party to submit to the Conference of the Parties (COP) periodic reports on its implementation of the Convention. The objective of reporting is to enable parties to learn from one another's experience in implementing the FCTC; the reporting also serves as a compliance mechanism to ensure fulfillment of obligations. Importantly, additional

protocols and guidelines can be adopted to support implementation of specific articles. For example, four sessions of the Intergovernmental Negotiating Body for the elaboration of a Protocol on Illicit Trade in Tobacco Products had been held as of March 2010, with a fifth and final session scheduled for 2012.

Unfortunately, resources to enable implementation of these requirements at the national level remain woefully inadequate despite the clear public health benefits to be gained. In general, global norms and standards for health promotion remain in their infancy and will require much greater political and economic support to be truly effective.

Impacts on Healthcare Financing and Service Provision

In addition to having varied impacts on health status and outcomes, globalization is believed to be leading to changes in healthcare provision and financing (Smith, 2004). In providing an introduction to some of these changes, this section examines three areas: the migration of health workers, the globalization of the pharmaceutical industry, and the global spread of health-sector reform.

Migration of Health Workers

Population mobility is a core feature of contemporary globalization, encompassing many types of migration, including temporary visitors (e.g., tourists, students), permanent settlers, documented and undocumented migrant laborers, asylum seekers, refugees, and internally displaced persons (International Organization for Migration, 2010). An estimated 214 million people (3.1% of the world's population) lived outside their country of birth in 2009, an increase from 100 million (1.8% of the world's population) in 1995, and a more than doubling since 1965. Data on the various types of population movement are notoriously incomplete across countries. Nonetheless, it is clear that globalization has been contributing to a marked increase in the number of people moving across national borders, the frequency of such movements, and the distances traveled. As Martin (2001, p. 41) writes,

Few countries remain untouched by migration. Nations as varied as Haiti, India, and the former Yugoslavia feed international flows. The United States receives by far the most international migrants, but migrants also pour into Germany,

France, Canada, Saudi Arabia, and Iran. Some countries, such as Mexico, send emigrants to other lands, but also receive immigrants—both those planning to settle and those on their way elsewhere.

Given the intensified scale and global reach of migration, countries have sought to improve the means of regulating and managing population flows. These efforts have been aimed at easing the movement of selected populations (e.g., skilled workers to fill labor shortages) through such measures as harmonizing accreditation and licensing requirements, or reciprocal agreements between countries on workforce migration. Conversely, migration policies have sought to restrict certain populations whom governments wish to deter from greater mobility (e.g., human trafficking, criminals, economic migrants).

Trends in the migration of healthcare workers suggest an emerging global marketplace for such labor. In the past, health workers have represented only a small proportion of highly skilled workers who migrate, given national licensing, language, and other requirements. Nonetheless, there has been a clear trend toward the increased migration of doctors and nurses, along with pharmacists, physiotherapists, dentists, laboratory technicians, and other health-related workers. Historically, health workers have long migrated to greener pastures, enticed by differentials in wages, training opportunities, and working conditions.

The so-called brain drain of health workers from poorer to richer countries has raised considerable concern. During the 1960s and 1970s, a large number of doctors and nurses from other parts of the British Commonwealth migrated to the United Kingdom to meet staffing shortages. By the 1980s, it was estimated that 35% of all hospital physicians in the United Kingdom were trained overseas, 60% of these in low-income countries (Abel-Smith, 1986, cited in Martineau, Decker, & Bundred, 2002). Worldwide, at least 140,000 physicians (6% of the world total, excluding China) were based outside their country of birth or training in 1971. Similarly, approximately 135,000 nurses (4% of the world total) worked outside their country of birth or training during the 1970s (Mejia, 1978).

From the 1990s onward, a marked increase in the number of health workers migrating from the low- and middle-income world was noted, with a wider range of countries involved in these outflows and inflows. One of the drivers of this change, according to Martineau, Decker, and Bundred (2002), was “the globalization of markets and the develop-

ment of free trade agreements.” According to these authors, this factor “facilitated international migration and reduced barriers to trade and mobility of services, products and people, including the skills of health professionals.” Harmonization of qualifications within the European Union, for example, enabled a greater flow among member states. Another driving force was growing demand on healthcare systems owing to aging populations, which put pressure on high-income countries to fill labor gaps. Furthermore, worsened economic conditions in many low- and middle-income countries encouraged health workers to seek better job prospects elsewhere. For example, the Philippines has been a historically important source of migrant health workers to the world. Given the value of overseas remittances to the national economy, the government has even supported a policy of intentionally training health workers for export. An estimated 85% of Filipino nurses (more than 150,000) worked overseas by 2003, even though there were more than 30,000 unfilled nursing posts in their home country (Aitken, Buchan, Sochalski, Nichols, & Powell, 2004). Data on why health workers migrate are limited, but clearly complex push and pull factors are at play. Nonetheless, the opportunity to secure better working conditions, salaries, and quality of life has been important.

The brain drain out of Africa has been especially worrisome because of the shortage of staff and the impact of the HIV/AIDS epidemic on health worker numbers. At a time when additional external funds were made available to provide antiretroviral therapy, there was declining availability of qualified staff to provide this treatment (Padarath, Chamberlain, McCoy, Ntuli, Rowson, & Loewenson, 2003). In Zimbabwe, for example, approximately 340 nurses graduated each year between 1998 and 2000, while the annual number of Zimbabwean nurses registering in the United Kingdom in 2000 totaled 382 (Stilwell, Diallo, Zurn, Dal Poz, Adams, & Buchan, 2003). Similarly, more than 500 nurses left Ghana in 2000—more than twice the number graduating from nursing programs that year (Buchan & Sochalski, 2004). Between 2000 and 2004, more nurses left Malawi to work abroad than the 330 who remained to care for the country’s 11.6 million people (Dugger, 2004). In contrast to high-income countries, which have ratios of more than 1,000 doctors/nurses per 100,000 people (Chen, 2010), in 2010 it was estimated that there were only 17 nurses for every 100,000 people in Malawi (Senior, 2010).

The United Kingdom has been a key destination for migrating health workers from Commonwealth

countries. Between 1999 and 2002, the number of foreign-trained nurses based in the United Kingdom and eligible to practice doubled to around 42,000 (Buchan, 2003). By 2008, this number had grown a further 16% to 48,782 (Nursing and Midwifery Council, 2008). In the future, the collective demand for health workers by the United States, Canada, Ireland, Australia, New Zealand, and the United Kingdom is predicted to be “large enough to deplete the supply of qualified nurses throughout the developing world” (Aitken et al., 2004). For example, by 2020 it is projected that the shortfall of nurses in the United States will reach 800,000 (Dugger, 2004).

While the issue of health worker migration must be considered within the context of the wider need to improve the global governance of migration, the majority of action to date has been pursued on a country-by-country basis. For example, in November 1999 the U.K. Department of Health introduced voluntary guidelines to limit the recruitment of health workers from low- and middle-income countries. However, these guidelines excluded private recruitment agencies and employers (Stilwell et al., 2003). While they initially seemed to result in a decline in new registrants from South Africa and the West Indies, the effect was transitory: It was soon followed by a doubling of registrants from low-income countries in 2001–2002 (Buchan and Dovlo, 2004).

In 2004, the World Health Assembly passed a resolution (WHA 57.19) that acknowledged the problems associated with health worker migration, and tasked the WHO Secretariat with developing a new international code of conduct on health worker recruitment that member states would be encouraged to voluntarily adhere to (Buchan, 2010). In 2009, a WHO expert committee also set out a strategy to improve retention of health workers in remote areas, by focusing on three main categories of intervention: education and regulation, financial incentives, and management environment and social support (WHO, 2009a). Reaching international consensus on the necessary measures to implement, along with the adoption of appropriate and effective legislative frameworks and the designation of clear organizational responsibilities, remain major challenges (Martin, 2001).

Globalization and the Pharmaceutical Industry

In recent decades, the pharmaceutical industry has grown in total size, as have the sizes of the largest companies within it. In 2003, the industry earned \$492 billion in sales worldwide. By 2009, worldwide

Rank (2007 Rank)	Company and Headquarters (website)	2008 Global Pharmaceutical Sales (change from 2007)	R&D Spend	2008 Top-Selling Drugs (2008 sales)
1 (1)	Pfizer; New York, NY (pfizer.com)	\$44.2 billion (−0.5%)	\$7.9 billion	Lipitor (\$12.4 billion), Lyrica (\$2.6 billion), Celebrex (\$2.5 billion)
2 (2)	GlaxoSmithKline; Brentford, England (gsk.com)	\$43.0 billion (11.2%)	\$5.2 billion	Seretide/Advair (\$6.0 billion), Valtrex (\$1.7 billion), Lamictal (\$1.4 billion)
3 (3)	Sanofi-Aventis; Paris, France (sanofi-aventis.com)	\$38.7 billion (4.8%)	\$6.5 billion	Lovenox (\$3.9 billion), Plavix (\$3.7 billion), Lantus (\$3.5 billion)
4 (4)	Novartis; Basel, Switzerland (novartis.com)	\$36.0 billion (10.7%)	\$7.2 billion	Diovan/Co-Diovan (\$5.7 billion), Gleeevec/Glivec (\$3.7 billion), Zometa (\$1.4 billion)
5 (5)	AstraZeneca; London, England (astrazeneca.com)	\$31.6 billion (10.1%)	\$5.1 billion	Nexium (\$5.2 billion), Seroquel (\$4.5 billion), Crestor (\$3.6 billion)
6 (6)	Johnson & Johnson; New Brunswick, NJ (jnj.com)	\$24.6 billion (−1.2%)	\$5.1 billion	Remicade (\$3.7 billion), Topamax (\$2.7 billion), Procrit (\$2.5 billion)
7 (7)	Merck; Whitehouse Station, NJ (merck.com)	\$23.6 billion (−2.4%)	\$4.8 billion	Singulair (\$4.4 billion), Cozaar/Hyzaar (\$3.6 billion), Fosamax (\$1.6 billion)
8 (8)	Roche; Basel, Switzerland (roche.com)	\$21.0 billion (3.4%)	\$7.2 billion	MabThera/Rituxan (\$5.6 billion), Avastin (\$4.9 billion), Herceptin (\$4.8 billion)
9 (10)	Eli Lilly; Indianapolis, IN (lilly.com)	\$19.3 billion (9.6%)	\$3.8 billion	Zyprexa (\$4.7 billion), Cymbalta (\$2.7 billion), Gemzar (\$1.6 billion)
10 (9)	Wyeth; Madison, NJ (wyeth.com)	\$19.0 billion (2.3%)	\$3.4 billion	Effexor (\$3.9 billion), Plevnar (\$2.7 billion), Enbrel (\$2.6 billion)

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sales had almost doubled to \$750 billion (Trombetta, 2009). Perhaps not surprisingly, the pharmaceutical industry is dominated by large MNCs. In 2008, the 10 largest companies earned almost half of the total revenues (\$301 billion) garnered by the world pharmaceuticals market (Table 18-2). Together they marketed 30 products that earned more than \$1 billion each in sales. Importantly, emerging markets such as Brazil, China, and India are rapidly becoming global players in the pharmaceutical industry, as both producers and consumers (Deutsch Bank Research, 2008).

Analysis by Taribusi and Vickery (1998) found that the pharmaceutical industry has been indeed undergoing major restructuring. This transition has been the result of a flurry of mergers and acquisitions as companies have sought to increase economies of scale (and with it cost savings, market access, and portfolios of products).

More recently, Busfield (2003) looked more carefully at the extent to which the term “globalization”

can be strictly applied to describe the pharmaceutical industry. She confirms that the consolidation of the industry has continued into the early twenty-first century, with no signs of abatement. The percentage of the world market held by the top 10 companies has continued to increase and now sits at almost half of the total market, up from approximately one-third in 1995.

Although it is clear that the pharmaceutical industry has become larger in scale and more concentrated in ownership, the extent to which production has become globalized remains subject to debate. Busfield (2003) concludes that it is more accurate to describe the industry as becoming highly internationalized and perhaps globalizing, but not yet globalized. She notes that the industry as yet does not have companies without clear national identities, nor do those companies demonstrate internationalized management or willingness to relocate across the world. So far production and consumption remains concentrated in high-income countries, though signs suggest that

richer low- and middle-income countries have begun playing a more prominent role in recent years.

Setting aside these debates, the increased economic might and reach of the industry do raise important policy issues. Pharmaceutical companies, and notably the industry leaders, argue that there is an economic logic to expanding their size because of the increasing need to compete in the global marketplace. According to this perspective, it is their size, in turn, that enables them to access sufficient resources needed to develop and market new products. As private-sector (profit-seeking) companies, global pharmaceutical companies insist that the demands of the marketplace must invariably drive product development. This practice means ensuring that pricing and ultimately profits give a sufficient return to shareholders and investment in research and development (R&D).

Public health advocates, however, have raised concerns about the dominance of the industry by a small number of large firms and, more specifically, their ability to determine the products and prices available to consumers. One important issue is which products are produced and for what purposes. Critics argue that the market-driven approach of drug companies means that they compete for the lucrative customers of the rich world or focus almost exclusively on conditions where there are sufficient buyers, at the expense of those consumers who are less able to pay for drugs or who have rarer conditions without a sufficient “customer base.” This phenomenon explains, for example, the proliferation of “me-too” drugs and the huge investments in drugs to treat obesity and impotence, while investment in conditions

more common to the low- and middle-income world is less forthcoming.

Another key issue that has gained increasing prominence in recent years is the drive to improve access to medicines. In 1977, WHO published its first Model List of Essential Drugs, which identified some 220 essential drugs that a country could use to meet the majority of its people’s health problems calling for drug solutions. The list, both then and now, serves as a model for countries in developing their own national lists. Since 1977, the WHO list has been updated to include the most effective and cost-effective drugs. If a pharmaceutical company successfully brings a new product to market, which typically requires spending an average of \$500 million on R&D, the firm will rely on patent protection under intellectual property rights (IPR) to recoup its development costs and earn profits. For the world’s poor, this practice means higher drug prices that often put important medicines beyond their reach.

This clear tension between meeting important public health needs and the practical workings of the market came into intense focus in 2001 with the dispute over access to antiretroviral treatment for HIV/AIDS (Exhibit 18-4). The case highlighted the challenge of reconciling the interests of two very different communities, increasingly brought together by globalization. As a follow-up to the dispute, the British government initiated a Commission on Intellectual Property Rights in 2001 to look at how IPR might work better for poor people and low- and middle-income countries. The commission was asked to consider the following issues:

Exhibit 18-4 The Implications of the TRIPS Agreement for Pharmaceuticals

The Agreement on Trade Related Property Rights (TRIPS) was adopted at the end of the Uruguay Round of international trade negotiations in 1994. The agreement establishes minimum standards for protecting and enforcing nearly all forms of intellectual property rights (i.e., patents, trademarks, and copyrights) for WTO member states, with standards derived from legislation in high-income countries. All member states must comply with these standards, where necessary modifying their national legislation. Importantly, the agreement explicitly acknowledges in Article 8 that, in framing national laws, members “may adopt measures necessary to protect public health and nutrition, and to promote the public interest.”

In an important departure from previous conventions, pharmaceutical products are accorded full intellectual property rights under TRIPS. Pharmaceutical companies are granted the legal means, as patent owners of new drug products, to prevent others from making, using, or selling the new invention for a limited period of time. This provision led to concerns within the public health community over its potential implications for access to medicines. TRIPS specifies that patents must be available for all discoveries that “are new, involve an inventive step and are capable of industrial application” (Article 27). Thus patent protection can be obtained for new drug products, which enables the patent holder to have exclusive rights to produce and sell the product. Pharmaceutical companies argue that such rights, and the consequent ability to charge a higher price for a drug under patent, are necessary to recoup the many millions of dollars spent to research and develop a drug and bring it to market. Without the prospect of earning such prices, the incentive to invest in research and development would

continues

Exhibit 18-4 continued

is made possible—viable—by two important features of our economic system: one is market-based pricing . . . the other is intellectual property protection.”

Within the public health community, however, the increased prices charged for drugs under patent protection raise concerns about access to medicines. For drugs unprotected by patent rights—because such rights were not granted, are not asserted, or have expired—other producers can manufacture generic versions that can be sold at more competitive prices. This process leads to lower drug prices for consumers, which is an especially important consideration in low-income communities and countries. Where a drug is needed for an important public health condition, the high cost of patented drugs becomes a particularly acute issue.

The tension between market economics and public health need came to a head in 2001 when the South African government sought an amendment to the South African Medicines and Related Substances Control Amendment Act that would allow the import and use of cheaper generic versions of prescription drugs. The key clause stated that the government could find and “parallel import” the cheapest drug available and grant “compulsory licensing” to other companies allowing them to make copies of patented drugs. It was argued that the prevalence of HIV/AIDS in the country warranted such measures. Thirty-nine pharmaceutical companies, including GlaxoSmithKline, Merck, and Roche, launched legal action against the amendment as a direct violation of their patent rights. Supported by the campaigning of NGOs such as Health Action International and Médecins sans Frontières, the case generated huge public pressure. Faced with negative publicity and strong criticism, the pharmaceutical companies ultimately withdrew the case in April 2001.

Attempts to address continued concerns related to public health protections available under TRIPS led to the Declaration on the TRIPS Agreement and Public Health (known as the Doha Declaration). This agreement affirmed the right of WTO member states to interpret and implement TRIPS in a manner supporting the protection of public health and, in particular, access to medicines. While the TRIPS agreement was initially well received, consternation soon arose over the interpretation of Article 31(f), which states that a compulsory license can be issued only for primarily domestic use. This paragraph precluded generic drug production for export to countries without their own domestic capabilities, leaving the poorest countries still without access to generic medicines. After a further two years of deliberation, the WTO’s decision on the interpretation of Paragraph 6 was announced in 2003: It waived this requirement, thereby allowing a country to issue a compulsory license for either domestic use or export, on the basis of public health need. Following the decision, countries remained reluctant to use available flexibilities for fear that pharmaceutical companies would withdraw access to other drugs. The negotiation of reduced prices directly from patent holders became an alternative option. Since the mid- to late-2000s, Thailand, Brazil, and other countries have issued compulsory licenses to produce or import patented drugs despite industry pressure.

Today, three key problems continue to hinder access to medicines. The first is the inability of many very poor countries to implement the flexibilities given their stark resource constraints. Even at reduced cost, increased and innovative financing remains needed. The second is the undermining of TRIPS flexibilities by provisions adopted under bilateral and regional trade agreements. Known as “TRIPS plus” or “WTO plus” measures, the standard of IPRs being negotiated and adopted under subsequent trade agreements can be more restrictive of public health protections. Third, achievement of an appropriate balance between ensuring access to medicines and creating incentives for drug development and innovation has remained elusive. Since 2004, an Independent Commission, Intergovernmental Working Group, and Global Strategy and Plan of Action on Public Health, Innovation and Intellectual Property have been tasked with finding a regulatory framework that reconciles the interests of industry and public health and can gain consensus among the WTO members.

Sources: World Health Organization. (2001). *Globalization, TRIPS and access to pharmaceuticals: WHO policy perspectives on medicine no. 3*. Geneva, Switzerland: Author; World Trade Organization. (2003). *TRIPS and pharmaceutical patents*. Geneva, Switzerland: Author; and World Health Organization. (2008). *The global strategy and plan of action on public health, innovation and intellectual property (GSPOA)*. Geneva, Switzerland: Author.

- How national IPR regimes could best be designed to benefit low- and middle-income countries within the context of international agreements, including the Agreement on Trade Related Property Rights (TRIPS)
- How the international framework of rules and agreements might be improved and developed (for instance, in the area of traditional knowledge) and what the relationship between IPR rules and regimes covering access to genetic resources should be

- The broader policy framework needed to complement intellectual property regimes

In its final report published in 2002, the Commission put forth a series of recommendations to integrate development objectives into the protection of IPR in low- and middle-income countries (Commission on Intellectual Property Rights, 2002).

Internationally, the need to balance the creation of new medicines and access to medicines led to the Doha Declaration on TRIPS and Public Health in November 2001. The declaration stated that WTO

members had the right to grant compulsory licenses and engage in parallel importing where “public health crises” made this necessary. The declaration also extended exemptions on pharmaceutical patent protection for the poorest countries until 2016.

The key dilemma—that is, the tradeoff between access to medicines and innovation—led WHO to create the Commission on Intellectual Property Rights, Innovation and Public Health in 2004. While its final report provides an important review of the existing evidence and proposals for improving current incentive and funding regimes so as to stimulate the creation of new medicines and other products, disagreement has persisted regarding the effectiveness of the flexibilities available under TRIPS for increasing access to medicines in countries without manufacturing capacity. The impact of data exclusivity laws and of intellectual property provisions in bilateral trade agreements have also raised major concerns (WHO, 2006). Policy debates since the late 2000s have largely focused on the potential contributions of patent pools, advance purchasing agreements, and innovative financing mechanisms.

In conclusion, it is more accurate to describe the pharmaceutical industry as a globalizing, rather than globalized, sector. Efforts to standardize products, regulation, and intellectual property rights worldwide can be seen as steps toward the creation of a global market for pharmaceuticals. However, concerns about access to medicines and product development, for example, have led to debates about the costs and benefits to public health of such trends. The term “internationalization,” rather than “globalization,” perhaps more accurately describes the sector so far given the continued concentration of ownership, staff, R&D, and markets in high-income countries. Globalization would evolve the industry so that production and consumption become distributed more broadly across the world, and companies no longer have clear national identities but truly internationalized management.

Globalization and Health-Sector Reform

One of the key aspects of globalization concerns changes to how we see ourselves and the world around us. Globalization is affecting a wide range of thought processes, including values and beliefs, cultural identities and products, scientific research, and policy decisions (Lee, 2003). Health sector reform over the past two decades is an example of the global power of ideas. Around the world, countries have grappled with the challenge of improving the financing and provision of health care. At the root of this en-

deavor are shifts in thinking about health care—for example, how better health can best be achieved, how health systems should be restructured, whose needs should get priority, and who should pay for it. The reforms put forth to address these questions have been underpinned by values, beliefs, ideologies, research, and other cognitive processes about what needs to be changed.

The thinking that has driven health-sector reform over the past three decades can be described as globalizing, in the sense that ideas about reform have flowed across a diverse range of countries, involving both public- and private-sector actors. In the United States, this effort was brought into sharp focus in 2009 with the healthcare reform debates that compared the U.S. system to the British National Health Service (Clark, 2009). The origins of this wave of reform are complex, but stem foremost from pressures on governments to address rising health costs and improve the quality of health services. As Dixon and Preker (1999, p.1449) describe,

[I]t would be too easy to blame ideology and economic crises alone for exposing public services to competitive market forces and increasing private sector participation. In reality, the welfare state approach has not always met the health needs of populations. Although state involvement is clearly needed, it has been dogged with the failure of the public sector to provide the services well.

Although there has been considerable debate about how best to meet these challenges, a clear set of ideas emerged from the early 1980s focused on rethinking (and in many cases reducing) the role of the state and introducing market mechanisms to manage and deliver health services. Initially introduced in the United States and United Kingdom, where enthusiasm for health reforms was perhaps most pronounced, these ideas began to be taken up in a wide variety of settings, including many parts of the low- and middle-income world.

The publication of *World Development Report 1993: Investing in Health* by the World Bank (1993) marked an important point in the emerging discourse of health-sector reform. Based on the innovative, yet controversial findings of the Global Burden of Disease project, which was carried out by the Harvard School of Public Health, the report ignited fierce debates about setting priorities and financing health care in the low- and middle-income world. *World Development Report 1993* set out a new approach to priority setting that sought to target those conditions inflicting

the heaviest disease or disability burden (measured by DALYs) for which cost-effective interventions are available. In addition, a new language of reform known broadly as the “new public management” began to permeate health policy at the national and global levels—internal markets, contracting out, public-private mix, decentralization, cost-effectiveness, rationing, autonomous hospitals, managed care—all bent on making health systems worldwide leaner and meaner.

The content of these reforms, and assessments of their relative merits and demerits at achieving their declared intentions, has been dealt with extensively elsewhere (see, for example, Berman & Bossert, 2000; Mills, 2001). What is interesting here, in the context of globalization, is the way in which such policy ideas flowed across territorial boundaries more readily than ever before. This phenomenon might be explained by the inherent “rightness” of the policies themselves, which claim to offer proven and effective measures to deal with practical problems in public-sector management common across countries. However, the adoption of reforms in so many countries prior to the availability of supporting evidence of their effec-

tiveness directly challenges this view. So do the sometimes heated debates surrounding specific reforms—the appropriateness of reforms to local settings, the inequitable effects imposed on certain population groups (especially the poor), the quality of the evidence base and methodology, and the underlying assumptions and values. The debate over WHO’s efforts in 2001 to comparatively assess the world’s health systems is a good example (Exhibit 18-5).

The sometimes controversial response suggests that the flow of ideas about health-sector reform over the past decade or so cannot be solely explained by the quality of their content. Rather, it is important to recognize that the messengers have been as important as the messages themselves. At the national level, successive conservative-thinking governments favored the adoption of policies based on neoliberal economic principles such as downsizing of the state, deregulation and privatization, and strengthening the market. At the global level, organizations such as the World Bank, IMF, and U.S. Agency for International Development (USAID) advocated similar policies, including structural adjustment programs, which became known as the “Washington consensus.” Given

Exhibit 18-5 The Global Debate over *World Health Report 2000*

In 2001, WHO published its *World Health Report 2000: Health Systems—Improving Performance* (WHO, 2001c) as “the first ever analysis of the world’s health systems.” Using five performance indicators (overall level of population health, health inequalities within the population, health system responsiveness, distribution of responsiveness, and distribution of the health system’s financial burden within the population) to measure health systems in 191 member states, the report was intended “to stimulate a vigorous debate about better ways of measuring health system performance and thus finding a successful new direction for health systems to follow.” The report stated that “[b]y shedding new light on what makes health systems behave in certain ways, WHO also hopes to help policy-makers weigh the many complex issues involved, examine their options, and make wise choices.” The results found France to be providing the best overall health care, followed by Italy, Spain, Oman, Austria, and Japan. The U.S. health system, which consumes a higher portion of gross domestic product than any other country’s health system, ranked 37th (WHO, 2001b).

The analysis immediately met with strong criticism on methodological grounds. Many public health practitioners objected to countries being ranked on the basis of untested methods that they felt were also based on ethically unacceptable assumptions. For example, Almeida and associates (2001, p. 1692) wrote that the “measures of health inequalities and fair financing do not seem conceptually sound or useful to guide policy; of particular concern are some ethical aspects of the methodology for both these measures, whose implications for social policy are cause for concern.” Similarly, Nolte and McKee (2003) challenged the report’s assessment of overall performance of health systems as a composite measure and, in particular, the attribution of health attainment to health systems. Many determinants of health lie outside of health care, and the method used by the *World Health Report* has been criticized for inadequately allowing for them. Applying a measure known as “avoidable mortality” to 19 countries, Nolte and McKee (2003) found that “no country retained the same rank with both methods.” Even the editor-in-chief of the report subsequently called the data “spurious” and “of no use for judging how well a health system performs” (Musgrove, 2003).

Although a second report with methodological refinements and new rankings never appeared, and criticisms continue to question WHO’s political judgment in undertaking such an exercise, the report was successful in drawing attention to the importance of better understanding health systems. The exercise spurred efforts to develop better methods and then to use them to unravel the “black box” of health systems’ performance.

these factors, together with the increased opportunities for policy makers to interact with their counterparts across the world, it is perhaps unsurprising that a considerable degree of policy convergence has occurred. Much more needs to be understood about how this evolution takes place, which key individuals and institutions are involved, and which policy issues have been most affected. New areas of research such as policy transfer, policy learning, and network analysis seek to grapple with these questions.

In short, health-sector reforms in recent decades illustrate well how transborder flows of thought processes are a key aspect of globalization. Ideas today move across national borders in a variety of forms via the mass media, the advertising industry, research institutions, consultancy firms, governments, civil society, corporations, international organizations, and individuals (e.g., via the Internet). The health sector is an arena in which ever-changing knowledge and ideas are at the core of practice. As a consequence, we can speak of health-sector reforms as being “globalized” to the extent that these ideas driving reform have become universally debated and, in many cases, adopted by diverse health systems around the world.

Although knowledge and ideas have flowed across societies throughout history, the technological advances that characterize contemporary forms of globalization have intensified this intellectual exchange to an unprecedented degree. Global policy networks of influential individuals and institutions, in turn, shape which ideas are put into practice in health-care financing and service delivery.

The Growing Importance of Global Health Diplomacy

The changing nature of health determinants and outcomes as a result of globalization has prompted concerted reflection on the need for more effective global health governance. As a part of this reflection, growing attention has been paid to global health diplomacy as a means of facilitating consensus on collective action. Global health diplomacy can be defined as “policy shaping processes through which States, intergovernmental organizations, and non-State actors negotiate responses to health challenges or utilize health concepts or mechanisms in policy-shaping and negotiation strategies to achieve other political, economic, or social objectives” (Smith, Fidler, & Lee, 2009, p. 1). Such processes recognize that the changing roles and responsibilities of the increasingly diverse

public and private actors concerned with global health require a range of approaches to collective action. Of significance is the absence of an overarching authority to adopt and enforce legally binding measures. Yet the world’s experiences with SARS and H1N1 influenza, for example, have reemphasized the shared nature of global health challenges. To date, the focus has largely centered on negotiating global governance mechanisms to deal with acute public health threats—notably, infectious diseases outbreaks. However, greater attention needs to be given to how state and nonstate actors at different policy levels can work more effectively together to address other global health issues such as strengthening health systems, health worker migration, access to medicines, and preventing and controlling the rapid increase in chronic diseases.

Over the past six decades, WHO has been at the forefront of global health diplomacy as the UN specialized agency for health. The World Health Assembly has served as a valued forum for debating issues and encouraging consensus among member states. The post–Cold War era, however, has seen the rise of the Group of Eight (G8) countries as a core influence in international relations. More recently, the rapidly growing economies of China, India, and Brazil have ensured growing prominence for the Group of Twenty (G20) countries. Both the G8 and G20, along with major forums within which they participate, such as the World Economic Forum (WEF) and the Organization for Economic Cooperation and Development (OECD), will remain key players in foreign policy.

Moreover, as discussed earlier in this chapter, global health actors embrace a broad range of non-state actors—notably, private companies and civil society organizations, and the public–private partnerships that bring them together with state actors. This interweaving of organizations directed at global health is complicated further by the influence of other sectors, including trade, security, environment, migration and agriculture. The greater complexity of issues, and the diverse actors that need to be engaged to address them, means that global health diplomacy has assumed even greater importance. WHO has sought to diversify its engagement activities by hosting issue-specific meetings, convening working groups, and disseminating best-practice guidelines and recommendations (Kickbusch, Silberschmidt, & Buss, 2007). Yet, far greater understanding is required regarding how diplomatic negotiations should be conducted, which skills are needed for effective negotiation, and which ends global health diplomacy should seek to achieve.

Conclusions: Health Protection and Promotion Amid Globalization

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This chapter has presented an introduction to the subject of globalization and health. Globalization is a wide-ranging subject that is plagued by definitional ambiguity, heated debate, and a limited, albeit steadily growing, evidence base. Despite the sometimes muddy waters surrounding this issue, it is clear that the public health community is faced with fundamentally critical and, in some cases, unprecedented challenges. It is increasingly accepted that a transition from international to global public health is taking place, as evident in shifting patterns of health and disease within and across countries. More complex is the need to better understand, and respond effectively to, the causes of these health impacts. Coming to terms with globalization requires tackling its implications for the broad determinants of health, which quickly takes the public health community beyond its usual comfort zone. Such issues as foreign policy, trade and finance, agricultural subsidies, corporate restructuring, and international law are unavoidably bumping up against more familiar public health agendas. Dealing with the overlap necessitates the acquisition of new sets of knowledge, new skills to deploy them, and seats at unfamiliar decision-making tables to voice public health concerns.

On some issues, signs indicate that the public health community is rising to the challenge. High-profile efforts to globalize tobacco control and to strengthen global responses to infectious disease outbreaks have received deserved attention. Away from the spotlight, there have been efforts to globalize many essential public health functions. For example, the tenth revision of the International Classification of Diseases is part of the ongoing development of common definitions of diseases and deaths carried out since 1893. Such initiatives represent an important example of how globalization of standards has led to better decision making and improved prospects

for global surveillance of major risks and diseases, and smoothed the way toward standardized approaches to prevent and treat conditions. Similarly, common standards for surveillance have been developed for infectious diseases and for chronic disease risks and outcomes.

More controversial outcomes have resulted when public health advocates have sought to tackle the broader determinants of health, such as poverty and inequality, which are embedded within the structures of contemporary globalization. As a starting point, there remains acute variation in health systems capacity among countries. The International Classification of Diseases, for example, must be underpinned by national systems for surveillance, diagnostics, and reporting. The value of global standards, in other words, is determined by the ability to implement them meaningfully. Drawing much-needed attention to unacceptable weaknesses in health systems, along with persistent inequities in health status and outcomes, amidst a world of rapid globalization, requires political courage to point fingers at inadequate regulation, weak political will, and the dominance of vested interests. It has meant making deeper forays into new territories for the public health community, but such incursions are critical if the health of the public is to be appropriately protected and promoted in an increasingly globalized world.

• • • Discussion Questions

1. Identify at least two positive and two negative examples of how globalization is affecting the broad determinants of health.
2. Name some goods and services that could benefit or harm health if traded more readily worldwide.
3. How do you think your own specific field of work or interest within public health is being influenced by globalization? Which regulatory measures or incentive systems might be needed to tackle the issues raised?

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