

The Incredible Shrinking Planet Globalization Unites Humanity . . . for Richer and Poorer, in Sickness and Health

Ann Marie Kimball

Globalization has been heralded and maligned in the media as a force that is changing the way we live. Since World War II, global trade and travel have skyrocketed to unprecedented levels. The human community has surpassed six billion and has become more closely linked than ever through communications, travel, and trade. At least 400 million people travel across international borders each year. Global trade in food and animals has increased each year for the past four decades (Figure 1). Washington is the most trade-dependent state in the Union. In 1999 our state economy topped \$106 billion in total two-way trade (included goods passing through the state for other destinations, but excluding services and software).

Washington State has a substantial “stake” in things foreign. We have become home to many new arrivals from war-torn economies, and they have enriched and diversified our population. An estimated 16,000 immigrants have joined our state’s population rolls

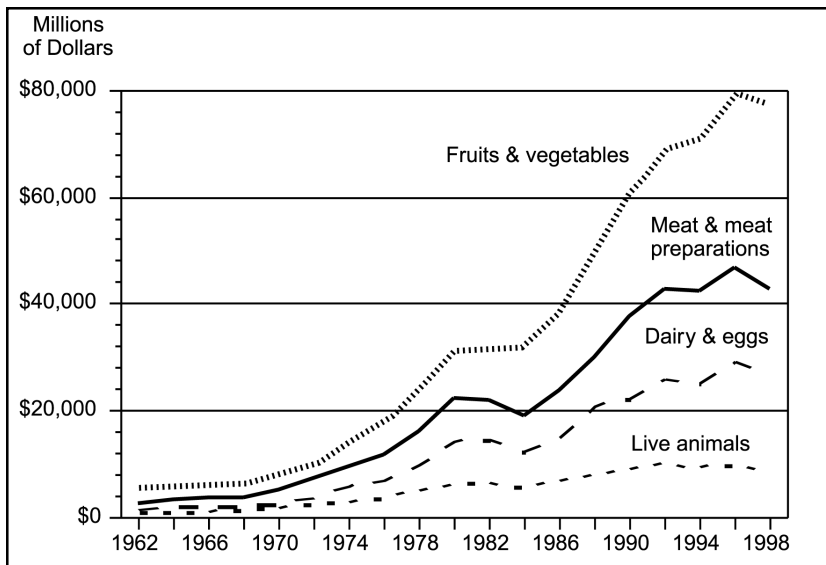
annually over the past decade. These new residents bring a perspective that encompasses people and cultures beyond our shores. Through this in-migration, we have become more connected to other countries.

So what is “globalization”? The term literally means “to make global, especially to make worldwide in scope or application.” Transnational corporations applying this concept as a business strategy have accumulated historically unprecedented corporate and personal wealth. “Mitsubishi is bigger than Indonesia, Ford is bigger than Turkey and Wal-Mart is bigger than Israel,” trumpeted a report from the Institute for Policy Studies. In a parallel fashion, human activities of all genre have become globalized: travel, employment, investment, diet, fashion, art, music, and so on.

The World Trade Organization talks held in Seattle in November 1999 and their attendant protests brought these realities home to our community. Among the proliferation of publicity were thoughtful discussions of how the current international trade agenda impacts health. Is trade an “engine of development” or purveyor of economic inequity? One message came through with clarity — health and disease can no longer be thought of as “local conditions.”

As difficult as it may be to address local population health problems in the Pacific Northwest, they are just a small piece of the fabric of global human health and disease. Our piece cannot be isolated from the fabric as a whole. Globalization is a cross-country, interdisciplinary phenomenon. The challenge to public health is to address globalization in a similar interdisciplinary manner. This article touches briefly on three areas of globalization: health determinants, emergent infections, and issues of intellectual property in pharma-

Figure 1: Global trade in agricultural products, 1962–1998.



ceuticals. Finally, the implications for the State of Washington and its potential for leadership abroad will be discussed.

The search for determinants of population health is central to the history of public health. It is beyond the scope of this article to chronicle the work done to date; however, paradigms have included the “population carrying capacity” resource concept of the 1970s, the postcolonial political construct, the concept that absolute poverty determines health, and the more current thinking that distribution of wealth within societies determines overall population health. Cross-national comparative studies have attempted to demonstrate the validity of the paradigm under study.

In this sense, the search for determinants of population health is an early example of “globalization” at work in public health. However, the globalization of action based on these paradigms has been more challenging. With the definition of health adopted at the 1978 World Health Organization meeting in Alma Ata, U.S.S.R., came the recognition that health is an intersectoral event. However, the tools for improving health outlined in the declaration’s 10 components of primary health care are limited and leave public health practitioners searching in their toolbox as globalization of human activity presents new realities. Changing the distribution of wealth or focus of economic activities within societies has not traditionally been the purview of public health.

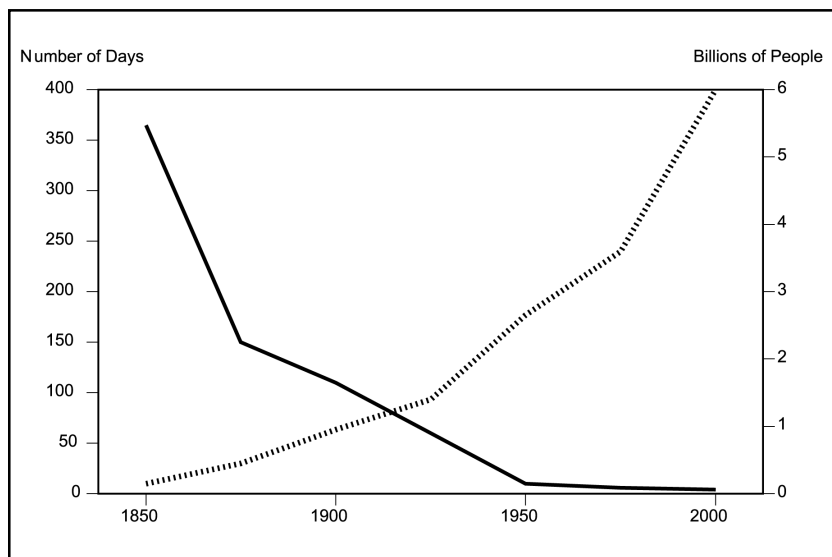
Trade and travel are two areas of human activity that have been “globalized.” The 1992 Institute of Medicine Report *Emerging Infectious Diseases* chronicles the role of trade and travel as conduits of infectious disease and

factors in the emergence of new diseases. A half billion people travel by air every year, and jets can carry anyone halfway around the globe in only a day (Figure 2). Nevertheless, the quarantine system of the United States languished as a national priority and only recently has it received new attention. However, traditional quarantine at borders is no longer a useful approach. Airport-based strategies were applied to detect and prevent the incursion of plague into the United States during the outbreak of putative pneumonic plague in Surat, India in 1993. More often than not, potentially infected individuals were located after they had already returned to their workplaces and homes, which demonstrates the ineffectiveness of this approach. Newer efforts focus on international cooperation and technical collaboration to ensure the safety of food and travelers.

Food-borne outbreaks of disease now are being traced to tainted products with international distribution. However, only a few cases may become apparent in any locality, so this new type of outbreak can defy normal “shoe leather” epidemiologic methods that traditionally rely on numerous cases to pinpoint a common exposure. The “smart” application of laboratory methods and molecular techniques to surveillance is becoming more important. Advances in pulsed-field gel electrophoresis developed at the University of Washington and the Washington State Department of Health offer a powerful method for “DNA fingerprinting” to quickly identify dispersed domestic and international outbreaks. This technology relies on computer storage of standardized laboratory-generated gel patterns in a national computer network called PulseNet, maintained by the Centers for Disease Control and Prevention (CDC). Sophisticated computer analysis allows rapid comparison of bacterial isolates, such as for *E. coli* 0157:H7, to determine whether a widely distributed contaminated food product is the source of illness among persons in different regions of the country. Several Asian trading partners, including Korea, have expressed interest in PulseNet.

Epidemiologic investigation is becoming more rather than less important in the brave new world of globalization. Japan is setting up an Epidemic Intelligence Service training program similar to that run by the CDC in Atlanta. The University of Washington enjoys a unique collaboration with the local and state

Figure 2: The past 150 years have told a saga of booming world population and shrinking travel times to circumnavigate the globe.



health authorities that has strengthened outbreak investigation in the public health curriculum. As large epidemics caused by new agents occur around the Pacific Rim, epidemiologic skills are becoming more valued. Historically, this state-local-university partnership has served us well in meeting the challenges of detection and control of infectious diseases. Such cooperation occurs in few other economies around the Pacific Rim and has potential to become our new “export.”

Globalization also presents opportunities in biotechnology and pharmaceutical endeavors, but from the public health perspective proffers obstacles along with advances. Lack of market potential has slowed or halted development of new drugs for traditional infectious disease scourges. The rapid evolution of antimicrobial resistance among pathogens has also tempered enthusiasm for investment in new therapeutic agents. Finally, intellectual property restrictions have hampered access to needed treatments in poor regions, as has a lack of inexpensive production alternatives.

So what do these trends mean for Washington State and its 34 health jurisdictions? Public health regulation and enforcement occurs primarily through local government. State law gives most of the authority for control of epidemics and quarantine to the county public health officers. Globalization potentially pits David (local health) against Goliath (the international trade community) if conflicts occur between the authority of county government and the global agenda for open and free trade and transport. What if a county wants to restrict the sale of unpasteurized juice because of recent outbreaks of infection with *E. coli* O157:H7? Is such a restriction on trade allowed? What are the roles of county and state governments? Of the United States government? Of the World Trade Organization? Where is the “muscle” to back up local government decision making about the welfare of consumers in that county? This example may seem far afield, but mirrors some issues raised before the WTO regarding environmental protections enacted by the United States on gasoline importation.

Local public health systems surely will feel the impact of the expanding global marketplace. Interestingly, for a state as trade dependent as Washington, local health jurisdictions have shown little evidence of an international perspective. As national frontiers further dissolve through travel and trade, local health officials will find that knowledge of the global marketplace is increasingly germane to their work. In fact, the global marketplace affects the price of apples, the picking of crops, the housing of migrants, and other local issues. Yakima County and the Tri-Cities already host a major influx of migrant workers each picking season, and have done so for decades. King, Snohomish, and Pierce counties are struggling to meet the demands of their new multilingual and multi-ethnic populations in schools and services. Integrating the local and global perspective in health service delivery and planning is becoming increasingly central to success. Integrating these areas of expertise is a challenge, but also an opportunity for which the partnership of academia and government in Washington is uniquely poised.

That public health institutions need to change to meet the challenge of globalization is clear. A recent series of articles by Yach and Bettcher (1998) highlight the prospects for change and assert that “Transnational actions must be built on firm local and national foundations.” The complexity of issues raised through a global approach to health is evident in the range of disciplines touched upon by the foregoing examples: economics, business, law, international studies, infectious diseases, and pharmacy, to mention just a few. The challenge will be to preserve and strengthen valued local partnerships and to apply “lessons learned” across borders by drawing upon the expertise of diverse disciplines.

Recommended Reading

- Bezručka S: Globalization proves hazardous to health of world population. *Seattle Post Intelligencer*, November 18, 1999.
- Fritz CL, et al: Surveillance for pneumonic plague in the United States during an international emergency: a model for control of imported emerging diseases. *Emerg Infect Dis* 1996; 2(1):30–36.
- Health for All by the Year 2000 Declaration. Geneva: World Health Organization, 1978.
- Institute of Medicine: Emerging Infections: Microbial Threats to Health in the United States. J Lederberg, RE Shope, SC Oaks Jr (eds). Washington, DC: National Academy Press, 1992.
- Longworth RC: Businesses wealthier than many countries. *Chicago Tribune*, October 11, 1996.
- Lang T: Diet health and globalization: five key questions. *Proc Nutr Soc* 1999; 58(2):335–343.
- Merriam-Webster's Collegiate Dictionary, 2000 ed. Springfield, MA: Merriam-Webster, Inc.
- Oberle M, et al: Enhancing student practicum opportunities: the outbreak investigation option. *J Public Health Manage Pract* 1995; 1(2):69–73.
- The Year in Trade 1999: The Washington State Trade Picture. Seattle: Washington Council on International Trade, 2000.
- Wilkinson RG: National mortality rates: the impact of inequality. *Am J Public Health* 1992; 82(8):1082–1084.
- Yach D, Bettcher D: The globalization of public health. I—Threats and opportunities and II—The convergence of self-interest and altruism. *Am J Public Health* 1998; 88(5):738–741.

Author

Ann Marie Kimball, M.D., M.P.H., is associate professor of health services and epidemiology and director of community medicine at the UW School of Public Health and adjunct associate professor of medicine at the UW School of Medicine.

Reprinted from
Washington Public Health, Fall 2000
 A publication of the University of Washington
 School of Public Health and Community Medicine
 Box 354809, Seattle, Washington 98195-4809
 (206) 685-2617, Fax (206) 543-9345