International Trade, Law, and Public Health Advocacy

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Public health science and practice expanded during the course of the 20th century. Initially focused on controlling infectious disease through basic public health programs regulating water, sanitation and food, by 1988 the Institute of Medicine broadly declared that "public health is what we, as a society, do collectively to assure the conditions for people to be healthy."[1] Commensurate with this definition, public health practitioners and policymakers today work on an enormous range of issues. The 2002 policy agenda of the American Public Health Association reflects positions on genomics' role in public health; national health and safety standards for child care programs; sodium in Americans' diets; the health and safety of emergency rescue workers; and war in Central Asia and the Persian Gulf.[2]

International trade should also be on public health's policy agenda. The development of a robust trade system — a system of regulations, law and administrative structures established by nations to regulate the flow of goods, services and intellectual property between them — has driven the vast cross-border flow of goods, services, environmental agents and populations which increasingly connects societies around the world. Trade's ability to alter both the product/service mix and even the regulation of national markets deeply affects public health and compels public health participation to ensure the promotion of domestic public health agendas. The World Health Organization ("WHO") recognizes this and has offered training to develop skills and knowledge, promote policy coherence and contribute to global public health in relation to trade since 2001.[3] According to Dr. George Alleyne, the former Director of the Pan American Health Organization, "many of us have not devoted attention to understanding trade and trade considerations.... The major role for us is to have the information ... to be able to discuss intelligently" trade and its implications for public health.[4]

International trade affects public health both indirectly and directly. This article reviews ways in which trade directly affects public health and highlights basic principles of trade law and policy in order to promote effective public health advocacy in trade discussions.

The International Trade System

Historically, trade has centered on nation-to-nation (bilateral) economic transactions involving the exchange of tangible goods.[5] Three major developments in international trade occurred during the 20th century, however: (1) it moved to a multilateral (multiple nations relating to one another) format demonstrated in the World Trade Organization ("WTO") and by the North American Free Trade Agreement ("NAFTA"); (2) trade regulation grew to embrace not just goods, but also services and intellectual property; and (3) the multilateral treaty format, due to its complexity, gave rise to supra-national administrative institutions.[6]

The WTO, the most prominent of the multilateral trade institutions, was established on January 1, 1995 as a result of the six-year Uruguay Round of international trade negotiations. It has an administrative staff (the Secretariat) of 560 and includes 146 member nations; its highest decision-making body is the Ministerial Conference (meeting at least once every two years), below which lies the General Council composed of delegates from national governments. The General Council functions as the trade policy review and dispute settlement body. Approximately 60 different agreements and sets of commitments — there are 14 principal legal texts[7] — fall under the auspices of

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the WTO.[8] As a consequence of the challenge to state sovereignty over trade policy inherent to participation in institutions such as WTO and NAFTA, commentators have increasingly criticized the trade system as un-representative and un-democratic[9] — a perception which trade institutions themselves deny.[10]

Effects of Trade on Health

Modern trade agreements attempt to facilitate trade by reducing, with the goal of elimination, trade barriers. Trade barriers are legal or working practices impeding the flow of goods and services across jurisdictions. It is of considerable importance to public health advocates that, from a trade-centric perspective, national health and safety regulations are considered barriers to trade.[11] WTO agreements, for example, hold that while national regulation to protect life and health is appropriate and sanctioned, "these actions are disciplined, for example to prevent them being used as an excuse for protecting domestic producers — protectionism in disguise."[12]

The trade system stresses domestic health regulation by subjecting it to scrutiny within a framework designed to identify overt or disguised biases against foreign goods or services. Participation in global or regional trade institutions such as WTO or NAFTA exposes member nations' health regulatory structures to the possibility of alteration, under threat of economic sanctions, to facilitate more open trade. A WTO trade dispute arbitration panel may interpret a national health policy as violating free trade principles, thereby opening the nation to economic sanctions and providing a powerful incentive for the member to revise its policy in ways that may be less protective of public health. Similarly, nations may be required to open their markets to new, otherwise undesirable, products as a condition of membership in institutions such as the WTO. In the case of Vanuatu, a small Pacific Island nation (with no domestic, small-arms manufacturing capacity) ringed with a defensive tariff barrier against the importation of firearms, WTO members sought in membership negotiations to open the market to American handgun imports.[13] Conversely, the international trade system could strengthen health regulations in some countries. The use of international standards may allow countries lacking sufficient independent regulatory expertise to identify and implement public health regulations offering higher levels of protection.

Indirect Effects of Trade on Health

While this paper focuses on trade's direct effects, public health practitioners and advocates recognize the tremendous importance of trade's indirect effects on health. Resource re-distribution, or wealth re-allocation, is probably the clearest example of an indirect effect of trade on health. Trade advocates frequently argue, for example, that trade increases the wealth of the world's poorer populations and therefore improves living conditions and access to health care. In President George W. Bush's view, "developing countries receive approximately $50 billion every year in aid. That is compared to foreign investment of almost $200 billion in annual earnings from exports of $2.4 trillion. So, to be serious about fighting poverty, we must be serious about expanding trade."[14] A joint review by the World Health Organization and the World Trade Organization's Secretariat completes the connection between wealth, trade and health by recognizing the "positive link between freer trade and economic growth, which can lead to reduced poverty and higher standards of living, including better health."[15] These views tie international trade expansion to economic development and therefore to improved population health.

Studies by government agencies, advocacy groups and academic institutions have attempted to address the question of whether trade, and more broadly, "globalization," actually increases the wealth of poorer populations; how it does so, under what conditions, and to what ends.[16] The complex debate concerning trade's economic benefits engenders controversy even among traditional allies, however; Oxfam drew widespread attention from the development community in 2002 by reversing a traditional position and endorsing international trade expansion (though sharply criticizing the contemporary trade environment).[17] We believe that public health practitioners and advocates should participate in these discussions. We also believe, however, that public health advocates should participate more actively in discussions of trade's direct affects. This includes offering well-articulated, science-based (where possible), targeted defenses of health-oriented regulatory schemes directly affected by the international trade system.

Direct Effects of Trade on Health

The literature on trade's direct effects on health is growing. It now includes analyses of trade and health services;[18] the World Trade Organization's incorporation of national health policy protections;[19] international law, trade and communicable disease;[20] trade, health and alcohol;[21] trade, intellectual property protection and pharmaceutical access;[22] trade and injury prevention;[23] and trade and health generally.[24]

There are two primary ways in which international trade directly affects domestic public health: through goods introduced to (or barred from) national markets, and through services introduced to (or modified within) national markets. There is also a third direct effect of trade on public health, more complex and difficult to measure: the potential chilling effect of trade disputes on domestic health regulators. Cases such as *Methanex Corp. v. United States* – brought under Chapter 11 of NAFTA – have raised

concerns among some commentators that the trade system is designed to discourage most public regulation of business.[25] That much broader discussion lies outside the scope of this paper.

The following section introduces important principles of the international trade system related primarily to the direct effects on health of trade in goods and services.

Trade in Goods

Even in 2001 — a year of declining growth in international trade — worldwide goods exports and imports alone accounted for approximately 15 trillion U.S. dollars.[26] The developing regions of Central and Eastern Europe, the Baltic States, the Russian Federation, Africa, the Mideast and China all experienced growth of between 2% to 20% in the value of world merchandise trade.[27] The influence of global trade in goods is difficult to underestimate.

Three specific WTO-governed treaties place conditions on health-oriented regulations that affect trade in goods: (1) the General Agreement on Tariffs and Trade requires that they not be arbitrary, unjustifiably discriminate between countries, or operate as disguised restrictions on international trade;[28] (2) the Agreement on the Application of Sanitary and Phytosanitary Measures ("SPS") requires that regulations concerning dangerous additives, contaminants, toxins, or disease-causing organisms not unnecessarily restrict international trade;[29] and (3) the Agreement on Technical Barriers to Trade ("TBT Agreement") also requires that "technical" regulations, such as product labeling requirements, also do not unnecessarily restrict trade. Trade's challenges to national, health-oriented regulations can result directly in health-affecting goods being introduced to (or barred from) national markets.

The following examples illustrate trade principles important for public health advocates.

Public Health Advocacy: Product "Likeness" under the GATT

The test of product "likeness" plays an important role in trade disputes. It is used to determine whether imported products suffer regulatory discrimination compared to "like" domestic products. If unjustified discrimination is found, market access for foreign products can be compelled. For public health advocates seeking to intervene in trade disputes, an argument demonstrating that foreign products pose a special health risk can sustain public health regulations appearing to treat foreign and domestic products disparately. These regulations can then continue to prevent the introduction of potentially harmful foreign products into a market.

In 1996 the French legislature passed Decree No. 96-113, intended to protect workers and consumers from the adverse health consequences of asbestos exposure by banning it from goods in France, whether domestic or foreign.[30] French regulations barred the manufacture, domestic sale, and import of asbestos-containing products. Until 1996, France had imported as much as 40,000 tons of chrysotile asbestos fibers from Canada; by the time an interim, restricted ban first entered into force on 1 January 1997, the volume had been reduced to 18 tons.[31] The ban was to become absolute by January 1, 2002.[32] Canada protested, claiming in part that the French decree violated obligations under the GATT. Canada was motivated to establish, throughout the international trade system, that such bans constituted a violation of trade rules;[33] by the time the WTO case was decided in September 2000, all chrysotile asbestos fiber imports to France from Canada had essentially stopped.[34]

In trade terms, a primary issue was whether the chrysotile asbestos fibers produced by Canada were "like" French products allowed in the market. If so, they would be subject to the National Treatment obligation of GATT's Article III:4 (1994), requiring France to ensure that Canada's asbestos products received access to the French market equal to that of the French products. The initial WTO panel found "like" French products and that France owed Canada's goods "national treatment" through equal market access (though GATT's health exception applied).

The WTO Appellate Body disagreed. Its decision offers the important point for public health advocates that toxicity is a "property" of a product that can distinguish it from other products in the market. The Appellate Body also determined that concerns about adverse health consequences affect consumers' tastes and habits, affecting the similarity of products.[35] Both of these health-related considerations supported a finding that the Canadian products were not "like" French products and, therefore, that no "national treatment" violation had occurred.[36] In future cases, public health advocates should support the defense of domestic, health-oriented regulations by providing technical analyses distinguishing foreign products based on health risks — expertise squarely within public health's domain.

Public Health Advocacy: GATT's Health Exception

The Appellate Body in the Asbestos case also reviewed a crucial principle directly at the intersection of trade and health: the health regulation exception of GATT's Article XX(b). The section permits measures "necessary to protect human, animal or plant life or health" that are not applied to arbitrarily or unjustifiably discriminate between countries or to operate as disguised restrictions on international trade. In the asbestos case, Canada also claimed that France presented insufficient evidence of asbestos' risks to health to claim protection under GATT's XX(b) exception.

The initial WTO panel had rejected Canada's argument that Canadian products were safe and that the French ban was "unnecessary" and so outside the protection of Article XX(b). It found that France had demonstrated that health would be protected by removing Canadian asbestos-containing products from the market; more importantly, it found France's total ban necessary to accomplish the French goal of halting the spread of asbestos-related disease.[37]

The Appellate Body supported these findings. It affirmed that a country has the "right to determine the level of protection of health that they [sic] consider appropriate in a given situation" and that France could ban Canadian products absent evidence that industry self-regulation could adequately protect human health.[38] It deferred to the French government's decision that no risk from asbestos was tolerable and held that, while laws regulating products to protect health must be based on some scientific evidence, a government's health policy choices need not rest on the "majority scientific opinion."[39] Public health advocates should note the apparently wide latitude offered to member nations in setting health protection levels and in using scientific evidence. They must also be prepared to discuss the benefits and limitations of the risk assessment process and the competing considerations underlying the choice of scientific evidence.

Advocates should also be aware of an important caveat: protection under GATT's health exception does not automatically save national regulation. The WTO Appellate Body strongly suggested that trade-restrictive measures covered under Article XX(b) are *not* immune from challenge as provisions otherwise nullifying or impairing market access [GATT, Art. XXIII:1(b)].[40] This may complicate public health's efforts to defend domestic health regulation by explicitly denying "safe harbor" under the health exception.

Public Health Advocacy: The Importance of Risk Assessment under the SPS

The Agreement on the Application of Sanitary and Phytosanitary Measures ("SPS") is designed to eliminate sanitary controls used merely to bar trade.[41] The WTO recognizes that members have the right to enact SPS measures "for the protection of human, animal or plant life or health."[42] WTO Appellate Body decisions indicate that both WTO panels and Appellate Bodies are willing to respect the rights of countries to set their own level of SPS protection[43] if a risk assessment is performed, there is a rational relationship between the SPS measure and the scientific evidence,[44] and the measures are not disguised restrictions on international trade.[45] If scientific evidence is not available, the SPS allows provisional measures to be adopted, as long as the country seeks the information necessary for an "objective" risk assessment and reviews its measures within a reasonable period of time.[46] Public health advocates should be prepared to argue that meeting these requirements, in practice, can be difficult for nations. Risk assessments (while increasingly governed by formal methodology) and the sciences underlying them are not wholly neutral processes but necessarily embody multiple decisions reflecting institutional and scientific policies and judgments.[47] In cases brought under the SPS Agreement, the Appellate Body has tended to find regulations violative of the agreement, while remarking generally on the right of countries to set their own health standards.

The SPS creates a preference for international standards in line with the overall goal of reducing barriers to trade, presuming them to be consistent with both the SPS and the GATT.[48] Bodies responsible for setting international standards under the SPS Agreement include the Codex Alimentarius Commission (Codex), the International Office of Epizootics (IOE), and organizations operating within the International Plant Protection Convention.

Public health advocates interested in trade/health interactions should also closely examine and participate in the work of these entities. For example, Codex (created in 1963) develops food safety standards (such as acceptable levels of contamination and toxins).[49] Codex works uses through technical committees; while only governments have formal voting power, participation is open to any stakeholder, and thus Codex is able to participate in the process.[50] The vast majority of groups that attend these meetings represent industry and only rarely do public interest groups attend.[51] Domestic measures departing in either direction from SPS-recognized standards must be based on a risk assessment,[52] take available scientific evidence into account,[53] avoid discrimination and disguised restrictions on trade,[54] and be the least trade-restrictive possible to achieve the desired level of protection.[55]

European Communities – Measures Concerning Meat and Meat Products

One of the most important "risk assessment" cases decided under WTO concerns hormones used in cattle beef hormones.[56] Due to consumer concern, the European Community ("EC") had banned imports of beef from cattle administered growth-promoting hormones.[57] The ban concerned six hormones, five of which were covered by Codex standards. The EC maintained that the SPS allowed countries to adopt their own, stricter standards based on an assessment of risk. While formal risk assessments cited by the European Community indicated that growth hormones — properly used — would result in no significant harm to humans,[58] the EC regarded hormone *misuse* as a significant threat.[59] The Appellate Body found this insufficient to sustain the validity of the measure. The EC had failed to assess the risk it claimed to be concerned over — that the hormones could be misused — and the ban was

found inconsistent with the EC's obligations under the SPS. The decision is consistent with other WTO Appellate Body decisions finding domestic restrictions on trade based on SPS measures to be inconsistent with the SPS Agreement.[60] It stands as an important reminder to public health advocates to understand WTO's definition of "risk assessment."

Commentators express concern that the SPS will cause national regulations to move to a lowest common denominator,[61] contending that only regulations stricter than international standards will be challenged.[62] In theory, however, permissive standards may be challenged by exporters from developed countries following stricter, more expensive regulatory regimes.[63] No cases have been brought to date concerning less stringent measures, however.

Public Health Advocacy: Investor Protections under NAFTA

Regional trade agreements also have the power to impact domestic regulations aimed at protecting health. In *Methanex Corp. v. United States*[64] a Canadian corporation brought a claim against the United States over the State of California's phase-out of "MTBE" (methyl tertiary-butyl ether, a gasoline additive). Studies at the University of California had concluded that MTBE was a groundwater contaminant and a carcinogen in animals. Methanex, the Canadian supplier of methanol used to produce MTBE, claimed that the California ban violated NAFTA's Chapter 11 investor protection provisions because there were alternatives to a ban and it was not based on scientific evidence.[65] According to Methanex, the real issue was the problem of leaking underground gasoline storage tanks[66] and, instead of addressing this, the ban would have the effect of wrongfully appropriating Methanex's future profits from its American manufacturing facility.[67] The case is still pending.[68]

NAFTA's investor protection provisions present a significant challenge to public health advocates. In the view of some commentators, Chapter 11 combines two extremely powerful instruments in pursuit of trade: (1) it allows foreign investors to initiate binding and confidential international arbitration directly against signatory states for claimed violations of NAFTA's private investor protections; and (2) it greatly expands the understanding of property rights to include, for example, anticipated profits. A former top U.S. NAFTA negotiator reportedly argues that costs of changes in social policy "at least under certain circumstances, should be borne by society as a whole .... Simply designating a government measure as a conservation measure, or a health and safety measure, does not answer the basic question about who should bear its costs."[69] For public health advocates, the philosophy that the costs of public health and safety regulation should be carried by the public at large (and not business) may represent a strengthening of old positions favoring private rights over public goods. Similar "investor rights" provisions are being sought for other multilateral trade agreements[70] which may represent important new arenas for public health advocacy.

Other goods-related agreements

Other agreements related to international trade in goods can directly affect public health and the work of public health advocates. The WTO's Technical Barriers to Trade Agreement ("TBT") governs technical regulations and standards regarding the use of terminology, symbols, packaging, marketing, and labeling requirements as they apply to a product or production method.[71] Some regulations covered by the TBT are for health and safety purposes, while others are introduced to standardize products, ensure quality, or avoid consumer deception. To be consistent with the TBT, regulations must be non-discriminatory (applying equally to domestic and imported products) and be the least-restrictive measure necessary to fulfill the objective. Like the SPS, the TBT also encourages the use of international standards. If a TBT signatory deviates from international standards, or no international standards exist, signatories must give notice to the other parties to the agreement.[72] There has been little adjudication to date testing the latitude states have to promulgate technical regulations under the TBT.

Also important are international agreements that regulate the flow of hazardous materials; the production, use and disposal of pollutants; and particular products, each of which has implications for public health. For example, the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal places restrictions on exporting hazardous wastes such as lead, mercury, and medical waste.[73] The Stockholm Convention on Persistent Organic Pollutants, not yet in force, would place use and trade limitations on persistent organic pollutants.[74] The convention would eliminate use of DDT except in the absence of other alternatives and where use accorded with WHO recommendations for control of malaria-transmitting mosquitoes. The Framework Convention for Tobacco Control allows signatories to impose regulations governing the contents of tobacco products,[75] packaging and labeling,[76] and advertisement, promotion, and sponsorship.[77]

These treaties, aimed at improving environmental and population health, require or allow nations to regulate dangerous products or substances pursuant to international agreement. They also provide important opportunities for the public health community to engage in advocacy regarding international trade.

Trade in Services

Trade in services presents a second route by which trade directly affects domestic public health. International trade

in services is a relatively new phenomenon. With the possible exception of services directly related to tourism, or to the insurance and transportation of traded commodities, the cross-border exchange of services historically has been perceived as constrained by time and distance, by cultural preferences, and by technical, institutional, and regulatory barriers.[78] However, recent advances in transportation and telecommunications technology have facilitated an ever-growing cross-border flow of goods, people, information and ideas. Today, an efficient and technologically advanced service sector is not only considered critical for supporting the system of trade in agricultural and manufactured goods, but trade in commercial services itself offers new opportunities for profits and economic growth. Over the last two decades, world exports in commercial services have increased from 364 million to 1.54 trillion U.S. dollars between 1980 and 2002, while world imports in commercial services have increased from 398 million to 1.52 trillion U.S. dollars.[79]

Deregulation in Services

Reducing barriers to trade in services has become a major focus of recently negotiated multilateral trade agreements. NAFTA (implemented January 1, 1994) first established comprehensive principles to guide the progressive reduction of barriers to trade in services between Canada, the United States and Mexico.[80] A commitment to the progressive liberalization of trade in services — the so-called "built in agenda"[81] — was also central to the Uruguay Round of GATT negotiations leading to the 1995 formation of the WTO. The resultant General Agreement on Trade in Services ("GATS") sets out the principal obligations, rules, and disciplines governing the use of trade-restrictive measures by WTO Members in 12 key service sectors.[82] Its influence extends even beyond the WTO. GATS concepts are now being used to negotiate increased trade in services among the 34 participants of the Free Trade Area of the Americas ("FTAA") and to re-examine bilateral trade agreements previously negotiated between countries of the Americas.[83]

Trade restrictive measures in services generally differ from those used in goods. While trade in goods is usually inhibited by tariff barriers, trade in services is more likely to be inhibited by non-tariff and regulatory barriers.[84] Non-tariff barriers include subsidies, quotas or other quantitative measures that may limit the total number of services provided or the total number of service suppliers. Regulatory barriers typically restrict the participation of foreign service providers and control the use of local resources, including human capital.[85] Such market-regulating measures are usually implemented by national governments to pursue non-economic policy goals such as social equity, access for the needy, service affordability, and quality control. Liberalizing trade in services therefore necessitates dismantling non-tariff barriers and requires significant regulatory reform, an agenda linked to the emergence of such economic ideas as regulatory relief, deregulation, privatization, and the injection of market competition into the public sector.[86]

Public health advocates must be prepared to address trade's and deregulation's effects across a number of service sectors. Trade agreements like GATS, for example, aim to improve market access to more than 160 sub-sector services. Many of these services — particularly those in the energy, water, sanitation, education, welfare, health care, and research and development arenas — have direct and indirect implications for public health. Private sectors in the nations of the Organization for Economic Cooperation and Development (primarily European nations, countries of North America and the most prosperous Asian countries) are eager to pursue commercial opportunities in service areas long considered the domain of the public sector.[87] In turn, governments around the globe are increasingly open to private sector involvement and to public-private partnerships as they search for cost-effective measures to improve public services' performance. Critics contend, however, that replacing public spending with private spending could erode "public accountability in the design, funding, and delivery of public services."[88]

While public health professionals need to be aware of developments across a number of service sectors, we focus here on the implications of the growing international trade in health services.

GATS and Health Services

Trade in services has increased rapidly over the last 15 years to reach 20% of total world trade (as of 2002); trade in health services has been one of the fastest growing sectors.[89] Annual public and private spending on health reached US$2 trillion in OECD countries in 1995, accounting for almost 90% of total world spending on health. Hospital services accounted for half of this amount and ambulatory and paramedical services accounted for approximately 10%.[90] Some OECD countries, namely the United States, spend as much as 14% of GDP on health.[91] By 2005, health sector spending in OECD countries is expected to be approximately $4 trillion U.S. dollars.[92]

Article I of GATS relates broadly to "the production, distribution, marketing, sale, and delivery of a service," defining four "modes of supply"[93] applicable to all services, including health. (See Table 1) Major health service sub-sectors outlined by the WTO Secretariat include: 1) hospital services, 2) professional services, such as medical and dental, nursing, physiotherapy, and other paramedical services, and 3) other human health services, such as ambulance services and residential health facilities other than hospitals. When GATS came into effect in 1995, each

WTO Member nation was expected to submit an initial, legally-binding "schedule of specific commitments" for which it agreed to reduce trade barriers. Member nations specified their levels of commitment (full commitment, commitment with limitations, no commitment, no commitment technically feasible) for each service listing. They also specified limits on "national treatment," defined as treatment no less favorable to foreign services and service suppliers than to domestic services and service suppliers.[94] Member nations could also claim exemptions for previously negotiated bilateral or multilateral trade agreements.[95]

As of December, 1999, the number of scheduled commitments made by WTO Members to liberalize trade in services varied widely by specific service, country, and level of economic development. The health sector had the lowest number of commitments; but within the health sector, medical, dental and hospital services were the most heavily committed.[96] Commitments involving the consumption of health services abroad were generally the least restrictive, whereas commitments permitting the participation of foreigners in members' domestic health services markets were the most restrictive.[97] No clear pattern emerges relating the economic level of national development to commitments made. Some developing countries committed to opening hospital, medical and dental, and nursing services, as well as other human health services, while others refrained from listing any commitments. Developed nations also differed greatly in their approaches, with European Union members making heavy commitments to liberalizing hospital, medical and dental, and nursing services; Japan and the United States committing only to opening hospital services; and Canada making no commitments to open any health or social services.[98] Some WTO Members have made full commitments to more liberal trade in a number of health services. (Table 2) Governmental decisions regarding the choice and level of commitment to open service sectors represent vital areas for aggressive public health advocacy.

Public Health Advocacy: Implications of Expanding Trade in Health Services

Trade in health services should grow further, as all GATS signatory nations are bound by Article XIX to enter into successive negotiations to reduce or eliminate trade barriers. The lack of disaggregated data on trade in services makes it difficult, however, to determine the exact volume of trade in specific health services and to predict the impact of more liberal trade on health care systems, population health status, and the achievement of social policy goals.[99]

Liberalizing trade in health services should produce both benefits and detriments. The net results will depend on the structure of each nation's health system, the regulatory environment in which it operates, and other health-related national government policies.[100] For example, benefits associated with greater trade in Mode 1 (the cross-border supply of health services) could include using telemedicine to bring advanced diagnostic services or educational resources to underserved areas.[101] Yet the delivery of such services necessitates a developed telecommunications infrastructure, making it more difficult for developing countries to benefit. Furthermore, from a public health perspective, increased investment in telecommunications infrastructure could divert resources from more cost-effective health interventions.[102]

Similarly, greater trade in Mode 2 (the consumption of health services abroad) could bring portability to both private and public health insurance, permitting the less wealthy to access specialty services abroad and reducing demand (and waiting times) in national health systems. However, making health insurance more portable could raise the cost of premiums and shift health care spending towards specialty care; and, by creating significant international demand for specialty services, developing countries may be tempted to redirect funds into systems catering to wealthy foreigners and nationals with private health insurance — resulting in two-tiered health care systems undesirable from a public health perspective.[103]

Liberalizing trade in health service in Mode 3 (commercial presence) would allow foreign service providers to construct, operate and/or manage an array of hospitals, clinics, and specialty diagnostic and treatment centers or health education facilities. This could facilitate access to services currently not available in a region. In the case of specialty care, it may reduce the demand for public capital investments in host countries, generate local employment, attract medical expertise, and even develop local human capital.[104] Associated risks include the loss of health care personnel from public health care systems and reduced capital commitment to public health systems from host governments, each of which could contribute to creating a two-tiered health system.

Finally, liberalizing the movement of health care personnel (Mode 4) by removing economic need restrictions or licensing requirements could distort the balance of specialty versus primary care physicians and distribution of health care personnel. This could affect overall health care spending or reduce the incomes of health professionals in recipient countries. Conversely, countries with a positive inflow of human capital could benefit at the expense of source countries. Significant outflows of human capital — the "brain drain" — could further jeopardize developing countries' abilities to deliver accessible, high-quality health care services.

In sum, while liberal trade in health services may contribute to economic growth, make specialty care more accessible, bring medical expertise to underserved areas, and reduce public capital investment demands, many fear

that more liberal trade in health services is more likely to have an overall negative impact on health systems and population health. This could occur due to shifts in health care spending to high-tech care; exacerbation of the "brain drain" phenomenon; creation of two-tiered health systems; or weakening of national regulatory systems ensuring quality and universal coverage. Such fears have been particularly acute in Canada, where the public has reacted negatively to trade policies favoring opening Canadian service sectors.[105]

Subjecting government health services regulatory measures to trade's traditional "necessity test" could undermine such social policy principles as universality, solidarity, and equitable access to care.[106] Public health professionals should monitor developments in the current round of GATS negotiations, as further commitments to market access and national treatment in health services — as well as in water, sanitation, education, welfare, and other services — have major implications for public health.

Conclusion

Public health expanded during the 20th century to include work on a broad range of factors capable of influencing population health. International trade has been steadily growing as one of the most important factors in public health and should now be included high on the list of public health's priorities. Trade affects public health both directly — through goods, services and, perhaps, its ability to affect the regulatory climate of trading nations — and indirectly, through changing the economic status of nations around the world.

Due to the enormous potential effects of trade on health, the public health community has begun to recognize the need for education regarding trade policies and principles. Public health advocates must be prepared to inject themselves into debates and arguments surrounding trade. This may involve: being prepared to explain the effects of trade on health, the international trade system and principal trade agreements; offering analyses justifying national regulations' differential treatment of products based on public health risk; defending maximally-protective health risk assessments; clarifying hidden policies and ambiguities in "established" science; participating in international standards setting bodies, such as Codex; identifying, as appropriate, philosophies favoring private rights over public health goods; and safeguarding the public or domestic provision of services when necessary to ensure attainment of the highest levels of public health.

Ultimately, international trade rests on agreements — like NAFTA and those governed by the WTO — created voluntarily between legally equal, sovereign nations. Trade must be viewed in this light: as the product of nations' voluntary, individual pursuits of domestic social and political goals. When the public health and trade advocacy communities differ over trade, it is the job of public health advocates to maintain health as the foremost national objective.

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