

# Global trade and health: key linkages and future challenges

Douglas W. Bettcher,<sup>1</sup> Derek Yach,<sup>2</sup> & G. Emmanuel Guindon<sup>3</sup>

Globalization of trade, marketing and investment has important implications for public health, both negative and positive. This article considers the implications of the single package of World Trade Organization (WTO) agreements for public health research and policy, focusing on three themes: commodities, intellectual property rights, and health services. The main aims of the analysis are as follows: to identify how trade issues are associated with the transnationalization of health risks and possible benefits; to identify key areas of research; and to suggest policy-relevant advice and interventions on trade and health issues. The next wave of international trade law will need to take more account of global public health issues. However, to become more engaged in global trade debates, the public health community must gain an understanding of the health effects of global trade agreements. It must also ensure that its own facts are correct, so that public health is not blindly used for political ends, such as justifying unwarranted economic protectionism. "Healthy trade" policies, based on firm empirical evidence and designed to improve health status, are an important step towards reaching a more sustainable form of trade liberalization.

**Keywords:** commerce; treaties; hazardous substances; public policy; health status; health services accessibility; pharmaceutical preparations, patents; tobacco industry, legislation; international agencies; risk assessment.

*Voir page 531 le résumé en français. En la página 532 figura un resumen en español.*

## Introduction

Globalization of trade, involving cross-border movement of capital, technology, traded goods and information, is leading to economic integration transcending the state. The universalization of the norms of multilateralism, reciprocity and most-favoured nation status, coupled with an unprecedented rate of scientific advance, is resulting in the rapid expansion of cross-border trade. Technologies and knowledge are rapidly diffusing between countries and vast communications webs are being created. A major impetus for the liberalization of global trade has been the eight rounds of multilateral trade negotiations held over the past 50 years, the most recent being the Uruguay and Tokyo Rounds. The conclusion of the Uruguay Round, marked by the Final Act (1), transformed the General Agreement on Tariffs and Trade (GATT) into a permanent organization, the World Trade Organization (WTO). With about 90% of world trade carried out under its

normative framework, WTO is the principal international institution for the management of international trade. The normative framework of GATT and WTO originally evolved because of the "devastating protectionist policies" of the 1930s, which led to the collapse of the world economy; the contagion of blind protectionism led to a "contracting spiral of world trade between 1929 and 1933" (2).

In the global economy of the 21st century, economic development will increasingly be linked to transnational access to knowledge and information networks and the exchange of information. Multinational conglomerates will be able to promote their "global commodities" in most countries of the world via sophisticated satellite links. The rapid evolution of new scientific knowledge, for example in biotechnology and genetic engineering, will be the subject of ongoing ethical debate. Concerns will continue to be raised that economic globalization should not be seen as an end in itself, but as an economic tool which should be adapted so that marginalized populations and broader social policies are not neglected. Moreover, a strong case can be made that the globalization of world markets carries with it a transnationalization of health risks, but also of benefits (3–5).

## Why is trade and health an international policy issue?

The links between international trade and disease have been recognized for centuries: the path of the

<sup>1</sup> Coordinator, Framework Convention on Tobacco Control, Tobacco Free Initiative, World Health Organization, 1211 Geneva 27, Switzerland (e-mail: bettcherd@who.int). Correspondence should be addressed to this author.

<sup>2</sup> Executive Director, Noncommunicable Diseases and Mental Health, World Health Organization, Geneva, Switzerland.

<sup>3</sup> Economist, Tobacco Free Initiative, World Health Organization, Geneva, Switzerland.

Black Death followed international trading routes in the 14th century, and the direct links between communicable diseases and trade/international travel were the catalyst for 12 countries to join in organizing the First International Sanitary Conference in Europe in 1851. Though many transnational challenges are not new, it has been argued that the global public health challenges of today exceed those of earlier periods by an order of magnitude (3, 4).

Trade/financial liberalization could offer benefits that improve health status. For example, the diffusion of technology such as telemedicine and distance learning for poor or remote communities and nations could have positive health implications. Information technologies are often seen as a motive force for economic and social development, and the importance of improving the capacity of developing countries to utilize information technology is widely recognized (4). Moreover, the globalization of trade and finance will increase the importance of international standards and legal instruments, both to achieve sustainable globalization and to ensure the safety of traded goods such as agricultural and food commodities. These standards have come into play, for example, in mediating disputes over such issues as the safety of genetically modified foods and hormone-treated beef products.

On the other hand, the negative health repercussions of trade and financial liberalization, such as the extended promotion and marketing of harmful commodities, especially tobacco, cannot be overlooked. The increase in international trade and travel also magnifies the risk of cross-border dissemination of infectious diseases (7). A multinational approach to food production and distribution, in conjunction with the progressive opening up of world markets, has allowed the international food trade to flourish. The value of global food trade — US\$ 266 000 million in 1994 — was more than 300% greater in constant dollars than it was 20 years previously, and is continuing to grow rapidly (7). Moreover, the liberalization of health services, and the cross-border “brain drain” which often accompanies the opening of health markets, have the potential to blur the boundaries between national and “globalized” sectors; the efficiency, quality and equity implications of these trends need to be examined closely (8).

It can be contended that a purely market-driven approach to development fails to consider intrinsic contradictions. While it may be true that “piling on social clauses” in multilateral trade and investment agreements would inhibit progress in achieving enhanced trade integration and result in dissent between countries (9), the social implications of trade and investment liberalization should not be overlooked. Social improvements, for example in public health, should be seen as a means of forging a sustainable globalization. Health improvements have been increasingly linked to positive economic effects (10), and the crucial link between health and human capital formation has become an important area of recent health policy research (11). The economic

benefits of trade liberalization have been studied empirically and are well documented.<sup>a</sup> Greater trade openness has been linked to faster growth in both productivity (12) and the economy in general (13, 14). However, a recent analysis by Rodriguez & Rodrik challenged these studies, arguing that methodological problems left the results open to diverse interpretations (15).

This article considers the implications of the single package of WTO agreements for public health research and policy by focusing on three specific themes: health services, commodities and intellectual property rights. The main aims of the analysis are to identify how trade issues are associated with the transnationalization of health risks, and possible benefits; to identify key areas of research; and to suggest policy-relevant advice and interventions on trade and health issues. Although we concentrate primarily on the global context of trade, the liberalization of markets is also being facilitated by the recent proliferation of regional and bilateral trade agreements.

## Global trade: determinants of health status

Determinants of health are the direct or indirect causes of a disease, condition or injury, and may be classified as either direct (proximal) or indirect (distal) (16). For example, smoking is a proximal determinant of health status, while the economic, demographic and social factors that promote tobacco use are distal determinants. The health effects of distal determinants are often mediated through proximal determinants, and typically these distal determinants cannot be acted upon through direct health sector interventions, even though they have longer-term impacts on health.

Table 1 shows various components of trade which have direct or indirect effects on health and are amenable to interventions, either by acting on the proximal determinants or by instituting policies addressing the distal factors. Table 1 also summarizes which of the multilateral agreements establishing WTO are relevant to a policy analysis of health determinants in the trade sector.

The new legal framework constituting WTO has been compared to a tricycle: “a driver (WTO), two large wheels (Multilateral Trade (in Goods) Agreements (MTAs) and General Agreement on Trade in Services (GATS) and a smaller one (Trade-related Aspects of Intellectual Property Rights (TRIPS))” (17). These three multilateral agreements<sup>b</sup> (trade in goods, trade in services, and intellectual property rights) are binding on all members of WTO:

<sup>a</sup> For a multidisciplinary study of the benefits of liberalization see: *Open markets matter. The benefits of trade and investment liberalisation*. Paris, Organisation for Economic Co-operation and Development, 1998.

<sup>b</sup> The multilateral agreements constituting WTO contrast with the plurilateral trade agreements, which are binding only on members of WTO that accept them.

Table 1. Components of trade as determinants of health

	Distal determinant	Proximal determinant	Health status indicator	Relevant WTO agreement(s)
<b>Hazardous commodities</b>	Promotion, marketing and trade in hazardous products, such as tobacco	Tobacco consumption.	Burden of disease Vital statistics	MTAs <sup>a</sup> : especially Agreement on Technical Barriers to Trade (TBT) and GATT 1994, but also Agreement on Agriculture and Agreement on Import Licensing Procedures
	Licit and illicit trade in firearms, landmines, and other "conventional weapons" technology	Violence (individual, civil conflict, and inter-state warfare)	Burden of disease Vital statistics	Weapons and firearms are not covered by WTO agreements
	Illicit trade in psychoactive substances	Psychoactive drug addiction and consumption	Burden of disease Vital statistics	No WTO agreement. Mandate of United Nations Drug International Control Programme (UNDCP)
	Dumping of unsafe or outdated pharmaceuticals	Use of ineffective or unsafe pharmaceutical products	Surveillance data Burden of disease	MTA: TBT
	Trade in contaminated food products	Re-emerging and emerging infectious diseases	Surveillance data Burden of disease	MTA: Agreement on the Application of Sanitary and Phytosanitary Measures (SPS)
	Transboundary movement of hazardous wastes, e.g. to developing countries	Health risks due to waste disposal and environmental contamination (WHO 1997 <sup>a</sup> )	Surveillance data Burden of disease	WTO: GATT 1994 (Articles 1–3). Outside WTO: Basel, Convention
<b>Protection of intellectual property</b>	Patent protection and innovation, and diffusion of new technologies to developing countries	Effects on availability, unit costs, and discovery of new pharmaceuticals and cost-effective technologies	Surveillance data Burden of disease Health systems data	Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)
<b>Health services</b>	Possible negative consequences of liberalization of health services: for example, "brain drain" of highly qualified health professionals	Decrease access to quality care	Surveillance data Health systems data Human capital	General Agreement on Trade in Services (GATS)
	Foreign commercial presence resulting in promotion and provision of expensive medical services	Erosion of equity and emergence of an inequitable two-tier health care system. Internal brain drain and decreased quality of services for vulnerable groups in society (8)	Surveillance data Health systems data	GATS
	Increased foreign direct investment	Increased access to new technologies	Surveillance data Health systems data	GATS

<sup>a</sup> Multilateral Trade (in Goods) Agreements (MTAs): this set of agreements on trade in goods consists of 13 separate multilateral binding agreements.

they are framed as a single binding treaty and must be accepted as a single package (18). This situation differs from previous arrangements under GATT, whereby members could pick and choose which agreements they decided to adhere to. Moreover, a series of legal clauses appear in the MTAs which deal with national enforcement of rules and procedures, and the translation of these agreements into national law (19). For the first time in history a global trade agreement has been forged that is binding and enforceable at the national level. The implementation and surveillance of these norms are underpinned by a strengthened dispute settlement system. However,

the strength of the system will depend on the willingness of sovereign states to adhere to its disciplines. Many analysts feel that more will have to be done to improve the WTO trading system, to accommodate the interests of developing economies and to reduce protectionist tendencies in many developing and developed countries (20).

With respect to public health, Article XX(b) under the General Exceptions section of the General Agreement on Tariffs and Trade (1947) allows "each contracting party to set its human, animal or plant life or health standards" if these restrictions do not represent an "unjustifiable discrimination or a

disguised restriction on international trade” (21). Under the single package of MTAs, Article XX(b) is part of GATT 1994, which contains the provisions of GATT (1947) “as rectified, amended or modified” with entry into force of the WTO Agreement (22). Similarly, other multilateral agreements, for example the Agreement on Technical Barriers to Trade (TBT) (Article 2(2)) and the TRIPS Agreement (Article 8), contain similar provisions for the protection of human health and safety. Notwithstanding these provisions, it should not be assumed that the governing bodies of WTO will ensure that these provisions are upheld for legitimate public health reasons. Nor should it be assumed that WTO has the technical means or resources to monitor effectively the full gamut of public health implications related to the various WTO agreements.

### Trade in commodities: a potential health hazard

The health risks and benefits associated with the liberalization of trade in goods are highly dependent on the nature of the commodities concerned. They can be classified into four groups (23): legal and beneficial (e.g. nutritive food and cost-effective technology); legal and of doubtful benefit (e.g. technologies of low cost-effectiveness); legal and harmful (e.g. tobacco, alcohol and weapons<sup>c</sup>); illegal and harmful (e.g. illicit drugs). We focus here on the implications of trade liberalization for the consumption and regulation of legal and harmful commodities. The following empirical analysis, which demonstrates links between cigarette consumption and trade liberalization, supports the hypothesis that public health concerns need to be factored into a more rational approach to sustainable globalization. As Taylor et al. suggest, the increased consumption of harmful commodities such as tobacco could offset some of the health benefits of trade liberalization (24).

### Tobacco trade and global public health

Tobacco control is one of the most rational, evidence-based policies in medicine. But even though evidence that smoking kills began to accumulate over 50 years ago, global control of this addictive drug is still elusive. Estimates indicate that tobacco use was responsible for 3 million deaths in 1990 (25). In 1998, the annual death toll from tobacco use reached 4 million (WHO, 1999). This is expected to reach 8.4 million deaths by 2020, of which 70% will occur in developing countries (26). Of the 100 million projected tobacco-related deaths over the next 20 years, about half will occur during the productive ages of 35–69 years (27). In China

alone, 800 000 individuals will die in 2000 because of tobacco use; and at current smoking uptake rates, tobacco will kill about 100 million of the 300 million Chinese males now under 29 years of age (28). Penetration of new markets by aggressive multinational companies, facilitated by the liberalization of trade and investment, is one of the factors that has prevented the public health community from effectively implementing tobacco control policies.

The expansion of the global tobacco trade into markets of developing countries and transitional economies is a significant, but inadequately quantified, contributor to the increased risk of tobacco disability and disease. As a response to dwindling sales in Western industrialized countries, major transnational companies targeted growing markets in Latin America in the 1960s and the newly industrialized economies of Asia (China (Province of Taiwan), Republic of Korea, and Thailand) and Japan in the 1980s. In the 1990s they have moved into eastern Europe, China and Africa (29) and have increasingly targeted young persons and women. The “cynical promotion of smoking” continues unabated as the industry aggressively pursues “its own best interests, not those of consumers or governments, in a policy characterized by casuistry and bad faith” — a policy which has included denials of the public health effects of smoking (30).

Penetration of the world’s tobacco markets by the transnational tobacco companies has been facilitated by the Uruguay Round of trade negotiations (31), which included for the first time the liberalization of unmanufactured tobacco. The single package of WTO trade agreements will facilitate the expansion of global trade in tobacco products through significant reductions in tariff and non-tariff barriers to trade. Other regional trade agreements and/or regional trade associations, such as the North American Free Trade Agreement (NAFTA), the European Union (EU), the Association of Southeast Asian Nations (ASEAN), the Common Market of East and Southern Africa (COMESA), the Economic Community of West African States (ECOWAS) and the Organization of American States (OAS), have acted in synergy with the global agreements by mandating further trade liberalization in goods and services, including tobacco, at the regional level (31). Other bilateral agreements have also facilitated the penetration of potential growth markets (32). Examples are those negotiated in the 1980s by the United States Trade Representative under Section 301 of the revised 1974 US Trade Act with Japan, China (Province of Taiwan), Republic of Korea and Thailand.

Although the global reach of the transnational tobacco companies has been enhanced by a recent wave of liberalization, they have also taken advantage of more direct forms of market penetration via direct foreign investment, either by licensing arrangements with a domestic monopoly, joint ventures, or direct acquisition of a domestic company (29). Market penetration by the tobacco multinationals is therefore

<sup>c</sup> Certain goods such as tobacco and weapons are intrinsically hazardous. Other goods such as alcohol depend on their use or abuse, while commodities such as food are only hazardous when contaminated.

being enhanced by a complex mix of rapidly changing factors in the world political economy, from trade liberalization and global marketing to direct foreign investment.

### Research implications

Numerous studies have attempted to estimate the social cost of smoking.<sup>d</sup> However, very few have explored the economic impact of trade in tobacco. One exception is a study of the net benefits (added value for consumers and producers) versus the costs (premature death, time off sick and medical costs) carried out by Barnum from the World Bank. The study estimated that every 1000 additional tonnes of tobacco traded in the global market results in a net loss of US\$ 27.2 million (33). The extensive economic and econometric literature dealing with the "traditional" determinants of tobacco consumption, such as price, taxation, advertising/promotion, restrictions on access to tobacco products, and agricultural policies, has been reviewed and summarized in recent publications (34).

Recent empirical evidence has linked economic changes, such as trade openness, to tobacco consumption. In a groundbreaking study, Chaloupka & Laixuthai constructed a fixed-effect model to measure the relationship between cigarette consumption and a country's degree of openness to the cigarette trade, specifically to that involving large multinational corporations (35). This study focused on the effects of the opening up of trade in China (Province of Taiwan), Japan, Republic of Korea, and Thailand between 1986 and 1990. These countries were the targets of US Government action under Section 301 of the 1974 US Trade Act, which empowers the US Trade Representative to enquire into unfair trade practices by foreign countries. As a result of the trade pressures applied by the USA, bilateral agreements were signed by China (Province of Taiwan), Japan, Republic of Korea, and the USA that included the removal of excise taxes and distribution practices that discriminated against US tobacco products. Thailand also removed its ban on cigarette imports from the USA in response to the 1990 GATT ruling that such a ban contravened GATT's norms. The study demonstrated that there was a significant rise in the market share of US cigarettes in those countries affected by the Section 301 bilateral trade agreements, and that "the agreements resulted in an overall increase in cigarette demand" (35).

A joint World Bank/WHO study also examined empirically the relationship between cigarette consumption and global trade (24). To estimate the impact of increases in trade flows on cigarette consumption, a model similar to that employed by Chaloupka & Laixuthai was constructed. However, a fixed-effect model with a broader measure of trade

openness (total imports divided by gross domestic product (GDP)) was used to make it applicable to all countries. The estimates showed that reduced trade barriers had a large and significant impact on cigarette consumption in low-income countries, a small but significant impact in middle-income countries, and no significant impact on smoking in high-income countries. These results indicate that less wealthy countries may be more vulnerable than wealthier countries to the impact of trade liberalization on cigarette consumption.

These findings are in keeping with economic theory. Domestic consumption can be expected to rise as a result of increased trade for three reasons. First, increased competition due to trade opening would be expected to reduce prices and stimulate demand, especially in younger age groups. Second, significant increases in advertising by transnational tobacco companies in new markets would also be expected to increase cigarette demand and consumption (34, 35). Finally, the superior efficiencies of transnational tobacco firms, in markets often dominated by inefficient government monopolies, would also be expected to lower prices and increase demand. These findings agree with earlier observations that transnational tobacco companies in Latin America were much more efficient in creating demand, promoting their products, and increasing total output than state-controlled monopolies (36).

### National and global policy implications

The empirical analyses outlined above point to one of the potentially harmful effects of the recent dramatic increase in the global tobacco trade. Given recent trends in the globalization of trade, these results have important policy implications. If low- and middle-income countries aspire to diminish the impact of the expansion of transnational tobacco corporations, national governments will need to implement comprehensive tobacco control policies, such as increasing the prices of tobacco products and restricting tobacco advertising and sponsorships.<sup>e</sup>

International trade is only one element of globalization. Tobacco-related direct foreign investment may have severe and damaging effects on the health of a population and should be regarded as a public health concern. There is anecdotal evidence that transnational tobacco corporations have aggressively invested in low- and middle-income countries through mergers and acquisitions, leveraged buy-outs, alliances and other strategic partnering activities (37). The consequences of tobacco-related investments and increased global tobacco marketing need to be examined, but there is a lack of basic data and this first needs to be addressed.

Furthermore, the dichotomy between domestic and foreign policies, such as occurred in the USA

<sup>d</sup> See the forthcoming review of the literature on the social cost of smoking by Chaloupka & Warner in ref. 34.

<sup>e</sup> See *Guidelines for controlling and monitoring the tobacco epidemic* (Geneva, World Health Organization, 1998) for elements of a comprehensive national tobacco control policy.

in the late 1980s, is problematic from a public health perspective. Promoting domestic policies to reduce smoking, while at the same time encouraging increased trade abroad as a matter purely of national self-interest, is self-defeating and difficult to defend, given the strength of evidence linking tobacco use with death and disability. To address this problem the Doggett Amendment prohibited the promotion of USA tobacco products abroad and it is an important sign of progress being made by the US Departments of Commerce, State and Justice. This approach provides a policy template that other major tobacco exporting countries may wish to follow.

In its report on "Thailand — restrictions on importation of and internal taxes on cigarettes," the 1990 GATT Panel decided that "GATT-consistent measures could be taken to control both the supply of and demand for cigarettes, as long as they were applied to both domestic and imported cigarettes on a national-treatment basis" (27). It was therefore concluded that the restriction of foreign imports of cigarettes was not necessary if other measures could be taken (32). The future harmonization of tobacco control policies, including price increases, ad valorem taxes and advertising bans, could be introduced as long as the policies did not discriminate between foreign and domestic products. Thus, the Panel provided a general mechanism for tightening tobacco control without breaking WTO rules. Following the GATT Panel decision, Thailand maintained its advertising ban and has upheld other strict measures to control tobacco use (32). Thailand's strong legislation is a model of what countries can do when confronted with multinational tobacco companies and their advertising (38).

In addition to national policies, it is necessary to formulate an effective global strategy for controlling the trade and promotion of hazardous products, based on shared principles. More specifically, trade issues need to be incorporated in international instruments to control the trade and marketing of hazardous commodities, and to harmonize actions across borders. Multilateral environmental agreements, such as the Basel Convention, that provide for trade measures to ban the export or import of hazardous or other wastes, are examples of this type of inter-state collaboration.

Such initiatives have already begun for global tobacco control. At present, WHO is developing a Framework Convention on Tobacco Control, which has the potential to control numerous aspects of marketing, trade and distribution practices for tobacco products. The Framework Convention could include provisions: to encourage countries to move towards comprehensive tobacco control policies; to cooperate in research, programme and policy development; to share information, technology and knowledge; and to meet regularly to strengthen global tobacco control. Possible related protocols could include more specific commitments to address such elements as: prices; smuggling; tax-free tobacco products; advertising/sponsorships; Internet trade; testing methods; pack-

age design/labelling; information sharing; and agricultural diversification (39).<sup>f</sup>

In a major step towards making global tobacco control a reality, Dr Gro Harlem Brundtland, the Director-General of WHO, has committed the organization to controlling the activities of tobacco companies, which "concentrate immense resources on increasing the numbers of smokers in developing countries, with a frightening rate of success" (40). Dr Brundtland's strong position on tobacco underscores the need to include on trade agendas public health issues that are founded on legitimate, evidence-based reasoning. Moreover, the expansion of transnational trade in harmful commodities points to a need to examine the ethics of international business (41).

## Protection of intellectual property

Intellectual property was one of the "new issues" negotiated in the Uruguay Round. Because of the increasing globalization of economic activities in the latter part of the 20th century there was a growing demand from industrialized economies and multinational corporations for the protection of intellectual property. The proposals for such an agreement were initially opposed by most developing countries, on the grounds that the agreement would constitute the transfer of rents from South to North. As a result, the TRIPS Agreement became a symbol of the North-South split during the Uruguay Round (42).

The scope of the TRIPS Agreement is much broader than any previous international agreement in this field. Before TRIPS the main international intellectual property covenants were the Paris Convention for the Protection of Industrial Property and the Berne Convention for the Protection of Literary and Artistic Works, both of which were adopted at the end of the 19th century. These two agreements were later amended at the 1968 Stockholm Conference to create the World Intellectual Property Organization (WIPO). A perceived weakness of these agreements was the absence of a binding enforcement or settlement mechanism. Since large industries such as computer software and pharmaceutical companies, as well as agricultural/food enterprises depend on protection of intellectual property to ensure innovation, it was argued that the TRIPS Agreement was a crucial foundation for global trading order (43). The TRIPS Agreement established minimum standards governing the scope, availability and use of intellectual property rights in the following areas: copyright and related rights; trademarks; industrial designs; patents; layout designs of integrated circuits; protection of undisclosed information; and control of anti-cope-

<sup>f</sup> A protocol is a form of legally binding treaty, which typically supplements, clarifies, amends, or qualifies an existing international agreement, for example, a framework convention. See: *What makes international agreements effective? Some pointers for the WHO Framework Convention on Tobacco Control*, Geneva, World Health Organization, 1999 (FCTC Technical Briefing Series, document WHO/NCD/TFI/99.4).

tive practices. The Agreement extended patent protection, including both product and process patenting, to a minimum term of 20 years from the filing date. The harmonization of patent protection policies means that countries that did not previously provide protection for pharmaceutical products, for example, now have to do so. All members of WTO were given one year to fulfil their obligations under the Agreement, while developing countries were given an additional four-year grace period plus an additional five years for countries that had not previously provided patent protection. Least developed countries were accorded a transitional period of 10 years (43).

Specific concerns have been expressed that the TRIPS Agreement could cause escalation of prices for medical technologies and pharmaceuticals in developing countries. At the same time it has been argued that intellectual property protection is necessary to encourage innovation: many new drugs might not have been developed without the granting of patent protection (44). Some observers contend that the TRIPS Agreement may lead to perverse transfer of technology and a significant decrease in local production (45). Since pharmaceuticals are an important component in addressing the major causes of disease burden, including infectious diseases, depression, and ischaemic and cerebrovascular disease, and for confronting major determinants of health such as tobacco, the balance between innovation and accessibility of new technology is a crucial policy issue.

Within the health sector, the protection of pharmaceutical patents has been the subject of controversy. To some degree the debate has mirrored the original debate during the Uruguay Round concerning the TRIPS Agreement: the interests of a vocal group of developing countries have been set against the interests of transnational pharmaceutical companies and several industrialized countries. There is disagreement as to the need for innovation in pharmaceutical research and development, as opposed to the need to avoid cost escalation. The evidence supporting each of these positions is summarized below.

### Innovation

Proponents of a more comprehensive global patent system have pointed out that patents are more important to the drug industry than any other corporate sector: patent protection is crucial for development of new products (46). Since the development of new chemical entities now takes longer and carries a high risk for investors, patent protection is deemed to be crucial for continuing innovation. When combined with the challenges of new medical needs, the need to stimulate innovation becomes the more important factor (47). It has been argued that evidence so far indicates that intellectual property rights do contribute to increased innovation (48).

On the other hand, a study of 95 countries over the period 1950–89 found that 91.7% of the

pharmaceutical patents originated in only 16 countries, and that no patents were filed in 64 countries (49). The research/innovation argument of the large pharmaceutical companies has also been questioned, because a large share of the resources for research is provided by governments, such as occurs in the USA (45). Moreover, it has been argued that innovation itself matters less than the “type” of innovation. Proponents of this argument point to the modest achievements in the search for new drugs that curb diseases found predominantly in developing countries, such as tuberculosis and malaria (50). There is also some question as to whether the pharmaceutical industry would have the incentive to develop the new drugs required in developing countries, when only the cheapest drugs have a chance of being used on a large scale (51).

### Price escalation

No consensus has emerged on the effect of the TRIPS Agreement on pharmaceutical prices. As with the original debate over the Agreement, the accumulated economic evidence is highly polarized. On the one hand, studies from developing countries argue that as the TRIPS Agreement comes into effect (i.e. as transitional periods start to expire in the early 21st century) massive drug price escalation will ensue. In India, a country which has only provided for pharmaceutical process patents, it was argued that a strong patent system would establish a “monopoly of the worst kind” and that massive price escalation would result (45). This argument is supported by evidence that price increases for selected pharmaceuticals are directly related to the “patent system practised in these countries”. At present, 70% of the Indian population cannot afford modern medicines and it was argued that this proportion would increase if product patent protection were introduced (45).

Other evidence also supports the cost escalation hypothesis. For example, a study in Argentina estimated that the introduction of product patents would result in price increases of about 270%, a reduction in consumption of medicines by 45.5%, and an increased annual expenditure of US\$ 194 million (49). According to an analysis of the situation in Argentina, Brazil, China (Province of Taiwan), India, Mexico, and the Republic of Korea product patents would result in a minimum welfare loss<sup>9</sup> of US\$ 3500 million to US\$ 10 800 million (48). A study in Malaysia, where product patent protection already exists, found that prices of pharmaceuticals were 20–76% higher than in India, reflecting the “profit maximizing” nature of the market (52). The Indian Ministry of Trade estimates that product patents will increase drug prices 5–10 fold (53).

Another body of research does not support the view that the TRIPS Agreement will result in massive

<sup>9</sup> The welfare loss represents the loss in consumer and producer surplus. The consumer surplus, for example, is the difference between the willingness to pay for a good *x* and the actual amount paid.

price escalation. It has been argued that patent protection does not affect approved products already on the market, and thus stricter patent protection will not produce higher drug prices (54). In particular, only 10 of the 270 pharmaceutical items in the WHO Model List of Essential Drugs were protected by European patents in 1994. Hence, introduction of product patents would have only the “most marginal” effect on drug prices in developing countries (55). A recent study conducted by National Economic Research Associates found that prices of branded pharmaceuticals were generally not affected by alterations in patent laws because of four factors: patent protection does not apply retroactively to pharmaceuticals already being marketed in a given country; therapeutic competition within countries tends to drive prices down; the regulatory environment in a country will determine drug prices; and market situations in which there is only a single buyer (monopsonistic) for drugs act as a price constraint (56). A study of the Indian pharmaceutical sector concluded that previous estimates of cost escalation due to patent protection are overstated because the patentable drug market represented only 10% of the total pharmaceutical market. Therefore, welfare losses from introducing product patents would amount to only US\$ 33 million, a much smaller amount than that estimated in previous studies (57).

### Local production

Opponents have argued that effective patent protection is only a public good for industrialized nations and huge multinationals. Because of the new patent regime, the existing industry in India “will face serious degrowth” as it will no longer have the “possibility of taking up new products” (45) — a line of argument that has, however, also been contested. For example, since China instituted a more effective patent protection regime, the country expects to have 10 new patented drugs on the market by the year 2000. Some of these are likely to be placed on the export market and numerous joint ventures with foreign firms have already been established (54). It has also been argued that the pharmaceutical industries of Italy, Japan and the Republic of Korea have benefited from the introduction of patent protection in the 1970s and 1980s (47). Scherer & Weinburst studied the impact of patents in Italy and found a statistically significant increase in the number of Italian patents, although they found no significant change in real research and development expenditures (58).

International aid can be a useful instrument in helping to reduce the disadvantages outlined above. Humanitarian aid from wealthier national and local governments can be invested in public health programmes and improve drug access in poorer countries. However, more financial resources are needed from rich governments. In 1998, member countries of the Organisation for Economic Co-operation and Development (OECD) contributed a

record low share of their national income to overseas aid, and only four countries gave more than 0.7% of their GDP, the United Nations target (59). Partnerships between the private sector and international organizations can also be used to improve public health through increased drug access. In 1997, the Joint United Nations Programme on HIV/AIDS (UNAIDS) launched the UNAIDS HIV Drug Access Initiative, a collaborative effort between the public and private sectors to identify strategies for increasing access to drugs for human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) therapy in developing countries. In 1998, major pharmaceutical companies, the World Bank and the Arab Fund for Economic and Social Development joined WHO in its efforts to eliminate lymphatic filariasis (elephantiasis). More recently, in January 1999, WHO announced the launch of a partnership with the pharmaceutical industry to help smokers stop smoking.

### Research and policy implications

Despite emerging evidence that new patent protection may lead to higher prices, it has not been clearly demonstrated that TRIPS will lead to significant welfare losses and cost escalation for developing countries. Also, it is not clear whether most patentable drugs will be of relevance to most developing countries. Notable exceptions include the recently developed antiretroviral agents for treatment of HIV/AIDS. Moreover, the welfare benefits of future innovation have not been adequately studied so far and are often disregarded in economic modelling. For example, the development of more new drugs may lead to enhanced welfare, even in developing countries, through an increase in consumer surplus (60). At present it is difficult to determine the potential effects of extending global intellectual property rights on the future burden of disease. These issues should be addressed in future research, to provide policy-relevant evidence for decision-making.

The polarization of evidence is mirrored in current international policy on intellectual property and pharmaceuticals. For example, a recent WTO Dispute Settlement Panel considered a complaint by the USA against India. In September 1997 it concluded that India was in breach of its obligations under the TRIPS Agreement because it had failed to provide adequate mechanisms for ensuring product patents for pharmaceutical and agricultural chemical inventions (61). Further controversy arose between the South African Government and the pharmaceutical industry over South Africa's plans to eliminate barriers to parallel imports of pharmaceuticals (62, 63). In 1998, manufacturers filed a suit against the government. However, in September 1999, the Governments of South Africa and the USA announced that a solution had been found. Both governments agreed to abide by the TRIPS Agreement. TRIPS permits parallel imports and the South



African Government intends to proceed in this direction (64).

At the World Health Assembly in May 1998, there was no consensus that Member States need to review their options under the TRIPS Agreement to safeguard access to essential drugs (65). More recently, several agencies (including the 1999 Nobel Peace Prize winner, Médecins sans Frontières) called on WTO to help developing countries by ending restrictions on essential medicines (66).

Collaboration with the research and pharmaceutical sectors is important for developing new and affordable drugs for new and re-emerging infectious diseases, as well as noncommunicable diseases. Future policies at national and international levels should focus on bringing together the various parties in the TRIPS and pharmaceutical debate, with both their evidence and grievances. For example, 90% of the world's cases of HIV/AIDS are in developing countries, where new treatments are inaccessible, and research expenditures to develop new therapies against tropical diseases such as malaria are dwindling. The stakes are thus too high to risk an escalating war of words.

Collaboration between private and public sectors should focus on the need for global social responsibility in the private sector, which would be implemented "by minimizing negative impacts and maximizing positive opportunities in core business activities, via social investment activities and by engagement in public policy" (67). Recent moves by major multinational producers to make HIV treatments more readily available at lower cost in developing countries suggest that this type of engagement with industry is both a practical and necessary health development strategy for the future. To facilitate common action on issues such as patent protection and access to essential drugs, the Director-General of WHO recently convened a first round-table meeting with nongovernmental organizations active in pharmaceuticals and essential drugs. The Director-General also held a round-table meeting with senior executives from the research-based pharmaceutical industry "to map out the challenges, and to see what WHO and the industry can achieve together" (68).

Although much of the health debate surrounding TRIPS has focused on the pharmaceutical sector, the links between patent protection and public health are not restricted to pharmaceuticals. It is becoming increasingly clear that the globalization of scientific knowledge can play an instrumental role in improving health (69). Economic development is dependent on the diffusion of technical and managerial knowledge and the capacity of a country to command new technologies (70). The special needs of least developed countries include a need to create a sound and viable technological base. A UNESCO publication argues that science can make an important contribution to addressing problems that go beyond national borders (71). With this in mind, UNESCO is devising new ways to convey knowledge to communities most

in need. It was stressed some years ago that many useful technologies had already spread to developing countries, that the health of millions had benefited, and that many more would continue to benefit (72). Finally, at the Global Knowledge '97 conference sponsored by the Canadian Government and the World Bank, the International Development Research Centre (IDRC), in partnership with the International Federation of Institutes of Advanced Studies (IFIAS), launched experiments to demonstrate the value of a knowledge broker. The idea is to bring together individuals and countries that are confronted with similar problems and link the creators and users of knowledge (73).

## Liberalization of services

The General Agreement on Trade in Services (GATS) established, for the first time, a global rules-based multilateral system to govern the more than US\$ 1 200 000 million involved in world services trade (74). In many respects these rules are similar to the GATT rules for trade in goods and commodities. However, in contrast to GATT, the national treatment and most-favoured nation provisions are generally less comprehensive: many of the rules only apply to areas where sector-specific commitments are made. Therefore, the "liberalization dynamics" of GATS may be weaker than those of GATT. Moreover, under Article XIX, developing countries are permitted to make fewer sector-specific commitments than industrialized states (75). Although industrialized countries generally made a greater number of commitments than developing countries, certain sectors such as health proved to be "sensitive" and fewer commitments were made. In contrast, many developing countries have a particular export interest in some of these "sensitive sectors", such as health (75). In the health sector the range of services covered by GATS is summarized in Table 2.

The growth of health services trade brings up complex issues of malpractice, regulation, patient confidentiality and data protection (77), as well as concerns about balancing efficiency and equity in service provision (8). Moreover, it is possible that liberalization of services in sectors not listed in Table 2 may be of concern to health development. For instance, liberalization of advertising and distribution services may promote cross-border trade in hazardous products such as tobacco.

On the other hand, trade liberalization in health services has the potential to generate positive effects. At the macroeconomic level, increased foreign investment in recipient countries creates employment opportunities; increases access to new technologies; and improves competitive capacity, quality, accessibility and productivity of services. More specifically, freer trade may enhance the movement of providers and improve exchanges of clinical knowledge among health professionals. Trade liber-

Table 2. Trade in health sector services covered by GATS<sup>a</sup>

Mode of supply	Specific health services
Movement of consumers	Movement of patients seeking treatment abroad Movement of students studying abroad
Movement of persons supplying services	Movement of skilled health personnel: South to North and South to South
Foreign commercial presence	Direct foreign investment in hospital operation, management, or health insurance
Cross-border trade	Telemedicine: care delivery, diagnosis and treatment, medical education and training, and technical expertise in telemedicine

<sup>a</sup> Adapted from ref. 8 and ref. 76.

alization may also improve the standards of care in recipient countries, by promoting the adoption of international certification procedures for providers and facilities. Finally, increasing international travel will apply pressure upon governments and private insurers to improve the portability of health insurance, thereby enhancing the cross-border mobility of health service consumers (78–80).

Several empirical problems are encountered in trying to determine the extent of service trade and possible impacts on health status. In general, data on trade in services are weak compared to those on merchandise trade, and only a limited number of industrialized countries report disaggregated data on 10 or more categories of services (75). Similarly, it is difficult to determine the volume of trade in health services because of a lack of disaggregated data, even though there is an increasing awareness that such trade is potentially important to both developing and industrialized countries (8). Moreover, quantitative measures are limited in the case of services trade. Such data would provide accurate information on the total output of service activities across countries and determine the levels of barriers faced by foreign suppliers (an equivalent measure to tariffs). Thus, cross-country comparisons of services trade are not easily made (75).

Econometric modelling in this field is problematic and the degree of market access is difficult to estimate: “current simulations are therefore at best weak on services, if not arbitrary guesswork” (81). In the health sector, for example, the “brain drain” of health professionals from low-income countries to more developed economies is considered to be a serious problem (82). However, since there is no database on net flows of health professionals between countries, it is difficult to determine the extent of the problem. Moreover, the negative effects of the “brain drain” are offset by broader, macro-economic benefits such as foreign remittances from nationals working abroad (8).

Because of problems quantifying the extent of health services trade, and the complexities of estimating the degree of openness of markets,

economic modelling of the impact of services trade on health is not at an advanced stage. In effect, the potential impact on health status of liberalizing health services cannot be accurately determined. In new areas such as telehealth and telemedicine an “international consensus is needed on a minimum data set for reporting” concrete data and trends (76). In the future it will be important to rectify these major gaps so that decision-makers can obtain more reliable information.

## Conclusions

The advent of WTO has brought with it a new concept of international trade law, framed according to universally binding principles. We have tried to demonstrate that the next wave of trade law will need to take more account of certain global public health issues. Some observers already consider that the full integration of environmental and social matters represents the next generation of trade agreements, and that this inevitable shift in trade thinking is “already knocking at the door” (17).

We conclude that there is an urgent need for well-documented evidence to inform future trade and health policies. The public health community needs to understand the health ramifications of global trade agreements, and must concentrate on getting its own facts correct so that public health is not used “naively” for other political ends, such as justifying unwarranted economic protectionism. Although strengthening provisions to protect public health in global (and also regional) trade agreements is an important component for realizing sustainable globalization, such provisions should not be used indiscriminately; for example, as a cover for unadulterated trade protectionism. However, before advocating a shift in policies the health community needs to put its own house in order. Towards this end, this article has provided an overview of some of the research and information needs in the area of trade and health.

In areas such as tobacco and other hazardous commodities, food safety, liberalization of trade services and patent protection of pharmaceuticals, the health sector has a clear role to play. It is the responsibility of the health sector to ensure that its arguments are technically sound when advocating protection of public health; that excessive measures which impede trade unnecessarily are not taken; that health and trade policies are aligned at global and national levels; and that the health sector is adequately informed about the implications of global trade agreements.

Finally, the trade and health debate outlined here suggests that health threats and opportunities for society will become increasingly globalized, and thus health development strategies “must include a central place for intersectoral/international inter-agency collaboration” (69). At the global level, the WHO has forged closer ties with the WTO to ensure

that public health interests are present on the trade agenda. It was in this context that WHO representatives attended the WTO Ministerial Conference held in Seattle, WA, USA (83). Although it was expected that a new round of multilateral trade negotiations would be launched in Seattle, the talks became enmeshed in such issues as labour standards and agricultural subsidies. However, despite a momentary "storm over globalization", trade economists generally believe that a new round of multilateral

trade negotiations in the early 21st century is inevitable and desirable. When this next round of trade negotiations is eventually launched, it is crucial that public health issues be given a higher profile in the deliberations. ■

### Acknowledgements

We thank Mr Orvill Adams, Dr Jonathan Quick, and Professor Allyn Taylor for their comments and suggestions.

## Résumé

### Commerce mondial et santé : liens essentiels et défis pour l'avenir

La mondialisation du commerce, des marchés et des investissements a des répercussions importantes, tant négatives que positives, sur la santé publique. Le présent article considère les répercussions de l'ensemble intégré d'accords de l'Organisation mondiale du Commerce (OMC) concernant la recherche et la politique de santé publique, en se concentrant sur trois thèmes : les produits de base, les droits de propriété intellectuelle et les services de santé. Il s'attache principalement à déterminer le lien entre le commerce et la transnationalisation des risques sanitaires mais aussi des avantages éventuels, à répertorier les principaux domaines de recherche et à suggérer des orientations et des interventions pertinentes concernant le commerce et la santé.

Les risques et les avantages pour la santé liés la libéralisation du commerce des marchandises dépendent en grande partie de la nature des produits concernés. Le présent article est axé sur les répercussions de la libéralisation des échanges pour la consommation et la réglementation des produits nocifs et néanmoins licites. L'accent est mis sur les liens entre la consommation de cigarettes et la libéralisation du commerce. Notre analyse défend l'idée que les préoccupations de santé publique doivent s'inscrire dans une approche plus rationnelle d'une mondialisation durable.

La propriété intellectuelle a été l'un des « nouveaux thèmes » abordés lors des négociations commerciales multilatérales du Cycle d'Uruguay. En raison de la mondialisation croissante des activités économiques dans la dernière partie du XX<sup>e</sup> siècle, les économies industrialisées et les entreprises multinationales réclament une protection accrue des droits de propriété intellectuelle. Pendant le Cycle d'Uruguay, l'Accord sur les aspects des droits de propriété intellectuelle qui touchent au commerce (ADPIC) est devenu le symbole du fossé Nord-Sud. Dans ce contexte, l'article examine l'impact possible de la mondialisation sur l'innovation, la hausse des prix et la production locale. Malgré les données de plus en plus nombreuses montrant que la nouvelle protection des brevets peut provoquer une hausse des prix, il n'a pas encore été clairement démontré dans la pratique que la mondialisation entraînera des pertes significatives de bien-être social ou une escalade des prix pour les pays en développement, ni d'ailleurs le contraire. De même, on ne sait pas encore si la plupart des médicaments brevetables présenteront un intérêt quelconque pour la majorité

des pays en développement compte tenu de leurs problèmes et de leurs priorités : parmi les exceptions notables figurent les médicaments tels que les agents antirétroviraux récemment mis au point pour le traitement de l'infection par le virus de l'immunodéficience humaine/syndrome d'immunodéficience acquise (VIH/SIDA).

L'Accord général sur le commerce des services (GATS) établit pour la première fois un système multilatéral mondial destiné à réglementer le commerce mondial des services, en pleine expansion. La croissance du commerce des services de santé, comme la télémédecine, soulève des problèmes complexes liés aux abus, à la réglementation, à la confidentialité et à la protection des données relatives aux patients, et appelle un souci d'équilibre entre efficacité et équité dans la prestation des services. Par exemple, la libéralisation de la publicité et des services de distribution risque de faciliter la promotion et le commerce transfrontière de produits dangereux comme le tabac. Mais la libéralisation des échanges s'agissant des services de santé peut également produire des effets positifs en accroissant les investissements étrangers et le transfert de technologies et en facilitant un accès plus large aux dispensateurs de services de santé. Parce qu'il est difficile de mesurer le volume des échanges représentés par les services de santé et d'estimer précisément le degré d'ouverture des marchés, il est impossible de déterminer avec précision l'impact que pourrait avoir la libéralisation de ces services sur l'état de santé. Il convient de combler rapidement ces lacunes pour pouvoir donner aux décideurs des informations plus précises sur lesquelles fonder les politiques.

Le présent article en conclut que la prochaine série d'accords commerciaux internationaux devra tenir davantage compte des grands problèmes de santé publique mondiaux. Toutefois, pour s'engager davantage dans les débats relatifs au commerce mondial, la communauté de la santé publique doit parvenir à mieux comprendre les effets sur la santé des accords commerciaux mondiaux. Elle doit également veiller à ne se fonder que sur des faits avérés, de sorte que la santé publique ne soit pas utilisée aveuglément à des fins politiques, telles que la défense d'un protectionnisme économique injustifié. Des politiques commerciales « saines », fondées sur des données empiriques solides et visant à améliorer l'état de santé, sont un pas

important vers une forme plus durable de libéralisation des échanges.

Alors que l'on prévoyait qu'un nouveau cycle de négociations commerciales multilatérales serait lancé à Seattle en décembre 1999, les progrès ont été freinés par des problèmes tels que la réglementation du travail et les subventions à l'agriculture. Malgré la tempête momen-

tanément soulevée autour de la mondialisation, les spécialistes estiment généralement qu'un nouveau cycle de négociations commerciales multilatérales est inévitable et souhaitable au début du XXI<sup>e</sup> siècle. Lorsque ce cycle de négociations commerciales sera enfin lancé, il est essentiel que les problèmes de santé publique bénéficient d'un nouvel éclairage dans les délibérations.

## Resumen

### El comercio mundial y la salud: vínculos clave y retos futuros

La globalización del comercio, de la mercadotecnia y de las inversiones tiene repercusiones considerables, tanto negativas como positivas, en la salud pública. En este artículo se analizan las repercusiones del paquete único de acuerdos de la Organización Mundial del Comercio (OMC) para las investigaciones y políticas en salud pública, centrandó la atención en tres temas: los productos básicos, los derechos de propiedad intelectual y los servicios de salud. Los principales objetivos del análisis consisten en determinar qué relación existe entre el comercio y la transnacionalización de los riesgos y los posibles beneficios para la salud; identificar los sectores clave de investigación; y sugerir recomendaciones e intervenciones de interés normativo sobre diversos aspectos del comercio y la salud.

Los riesgos y beneficios para la salud asociados a la liberalización del comercio de mercancías dependen en gran medida de la naturaleza de los productos básicos en cuestión. Este artículo se centra en las repercusiones de la liberalización del comercio en el consumo y la regulación de productos básicos legales y nocivos. Se hace hincapié en la relación existente entre el consumo de tabaco y la liberalización del comercio. Nuestro análisis respalda la hipótesis de que las preocupaciones en materia de salud pública han de formar parte de un enfoque más racional orientado a una globalización sostenible.

La propiedad intelectual fue uno de los «nuevos temas» negociados en la Ronda Uruguay de negociaciones comerciales multilaterales. Debido a la creciente mundialización de las actividades económicas registrada en la segunda mitad del siglo XX, existía una demanda creciente de protección de la propiedad intelectual por parte de las economías industrializadas y las empresas multinacionales. El Acuerdo sobre los Aspectos de los Derechos de Propiedad Intelectual Relacionados con el Comercio se convirtió en un símbolo de la división Norte-Sur durante la Ronda Uruguay. Desde esa perspectiva, el artículo examina las posibles repercusiones de la globalización en la innovación, el aumento de los precios y la producción local. Pese a las pruebas que empieza a haber de que las nuevas medidas de protección mediante patente pueden conducir a un incremento de los precios, aún no se han obtenido datos empíricos sólidos que permitan determinar si la globalización se traducirá o no en pérdidas de bienestar y aumentos de precios importantes para los países en desarrollo. Además, no está claro si la mayoría de los medicamentos patentables serán de interés para los problemas y prioridades de la mayor parte de los países en desarrollo: entre las

excepciones destacables en este sentido cabe citar los agentes antirretrovíricos recientemente desarrollados para el tratamiento del virus/síndrome de inmunodeficiencia adquirida (VIH/SIDA).

El Acuerdo General sobre el Comercio de Servicios (GATS) establece por vez primera un sistema multilateral mundial basado en reglas para regular el floreciente comercio mundial de servicios. El crecimiento del comercio de servicios de salud, por ejemplo los que permite la telemedicina, suscita cuestiones complejas relacionadas con la malpraxis, las tareas reguladoras, la protección de la confidencialidad y de los datos y la necesidad de conseguir un equilibrio entre la eficiencia y la equidad en la prestación de servicios. Así, la liberalización de la publicidad y de los servicios de distribución puede facilitar la promoción de productos peligrosos, como el tabaco, y el comercio transfronterizo de los mismos. Por otra parte, la liberalización del comercio de servicios de salud brinda posibilidades para conseguir efectos positivos gracias al aumento de las inversiones y tecnologías extranjeras y al mayor acceso a los proveedores de servicios de salud. Debido a los problemas inherentes a la cuantificación de la magnitud del comercio de servicios de salud y a la complejidad de la tarea de estimar el grado de apertura de los mercados, no es posible determinar con exactitud las repercusiones potenciales de la liberalización de los servicios de salud en la situación sanitaria. Para que las instancias decisorias puedan conformar las políticas con información más precisa, es necesario colmar urgentemente esas lagunas de investigación.

Se concluye en el artículo que el derecho mercantil internacional que surja de las próximas negociaciones deberá tener más en cuenta los problemas mundiales de salud pública. Sin embargo, para poder participar más a fondo en los debates sobre el comercio mundial, es preciso que la comunidad interesada en la salud pública comprenda los efectos sanitarios que pueden tener los acuerdos comerciales mundiales. Además, debe cerciorarse de que sus propios datos sean correctos, para no admitir ciegamente el uso de la salud pública con fines políticos, como ocurre cuando se intenta justificar medidas indeseables de proteccionismo económico. Las políticas de «comercio saludable», basadas en pruebas empíricas firmes y concebidas para mejorar la situación sanitaria, son un paso importante con miras a alcanzar una forma más sostenible de liberalización del comercio.

Aunque se había previsto iniciar una nueva ronda de negociaciones comerciales multilaterales en Seattle

en diciembre de 1999, las conversaciones quedaron atascadas en torno a aspectos tales como las normas laborales y las subvenciones a la agricultura. A pesar de esa momentánea tormenta de críticas contra la globalización, los analistas de las relaciones comerciales consideran en general que la organización de una nueva

ronda de negociaciones comerciales multilaterales a principios del siglo XXI es tanto deseable como inevitable. Cuando por fin se lance esa ronda de negociaciones, es fundamental que los problemas de salud pública ocupen un lugar más destacado en las deliberaciones.

## References

1. **Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations.** Geneva, General Agreement on Tariffs and Trade, 1994.
2. **Quick R.** The agreement on the technical barriers to trade in the context of the trade and environment discussion. In: *The Uruguay Round results: a European lawyer's perspective.* Brussels, European Interuniversity Press, 1995: 311–329.
3. **Yach D, Bettcher DW.** The globalization of public health. I: threats and opportunities. *American Journal of Public Health*, 1998, **88**: 735–738.
4. **Yach D, Bettcher DW.** The globalization of public health. II: the convergence of self-interest and altruism. *American Journal of Public Health*, 1998, **88**: 738–741.
5. **Chen LC, Evans TG, Cash RA.** Health as a global public health good. In: Kaul I, Grunberg I, Stern MA, eds. *Global public goods: international cooperation in the 21st century.* New York, Oxford University Press, 1999.
6. *The role of information technology in enhancing trade opportunities for LDCs and ways to facilitate its use by LDCs: Report of the high-level meeting on integrated initiatives for least-developed countries' trade development.* Geneva, World Trade Organization, 1997 (document WT/LDC/HL/2).
7. **Käferstein F, Motarjemi Y, Bettcher DW.** Foodborne disease control: a transnational challenge. *Emerging Infectious Diseases*, 1997, **3**: 503–504.
8. **Adams O, Kinnon C.** A public health perspective. In: Zarrilli S, Kinnon C, eds. *International trade in health services: a development perspective.* Geneva, United Nations Conference on Trade and Development (UNCTAD)/World Health Organization, 1998.
9. **Minyard A.** *The World Trade Organization: history, structure and analysis.* 1996 (Internet communication at <http://www2.netdoor.com/~aminyard/> accessed on 1 March 2000).
10. **Strauss J, Thomas D.** Health, nutrition, and economic development. *Journal of Economic Literature*, 1998, **36** (2): 766–817.
11. *World development report 1993: investing in health.* New York, Oxford University Press for The World Bank, 1993.
12. **Edwards S.** Openness, productivity and growth: what do we really know? *Economic Journal*, 1998, **108** (447): 383–398.
13. **Sachs J, Warner A.** *Economic convergence and economic policies.* NBER Working Paper No. W5039, February 1995.
14. **Dollar D.** Outward-oriented developing economies really grow more rapidly: evidence from 95 LDCs, 1976–1985. *Economic Development and Cultural Change*, 1992, **40** (3): 523–544.
15. **Rodriguez F, Rodrik D.** *Trade policy and economic growth: a sceptic's guide to cross-national evidence.* NBER Working Paper No. W7081, April 1999.
16. **Lerer LB et al.** Health for All: vision to strategy – the role of health status and determinants. *World Health Statistics Quarterly*, 1998, **51**: 7–20.
17. **Berrod F, Gippini Fournier E.** The common institutional framework of the New World Trade System. In: *The Uruguay Round results: a European lawyer's perspective.* Brussels, European Interuniversity Press, 1995: 25–31.
18. **Roessler F.** The agreement establishing the World Trade Organization. In: *The Uruguay Round results: a European lawyer's perspective.* Brussels, European Interuniversity Press, 1995: 67–85.
19. **Bourgeois JHJ.** The Uruguay Round results from a European lawyer's perspective: an introduction. In: *The Uruguay Round results: a European lawyer's perspective.* Brussels, European Interuniversity Press, 1995: 15–21.
20. **Martin W, Winters LA.** The Uruguay Round: a milestone for the developing countries. In: *The Uruguay Round and developing countries.* Cambridge, Cambridge University Press, 1996: 1–29.
21. *Analytical index: guide to GATT law and practice (Volume 1).* Geneva, World Trade Organization, 1995.
22. *The results of the Uruguay Round of Multilateral Trade Negotiations: the legal texts.* Geneva, World Trade Organization, 1995.
23. **Frenk J, Gómez-Dantés O.** Global integration and health. In: Freeman P, Gómez-Dantés O, Frenk J, eds. *Health systems in an era of globalization — challenges and opportunities for North America: a conference summary.* Washington, DC, Institute of Medicine, USA, and National Academy of Medicine, Mexico, 1995.
24. **Taylor A et al.** The impact of trade liberalization on tobacco consumption. In: Jha P, Chaloupka FC, eds. *Tobacco control policies in developing countries,* Oxford, Oxford University Press (in press).
25. **Murray CL, Lopez AD,** eds. *The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020.* Cambridge, MA, Harvard School of Public Health on behalf of the World Health Organization and The World Bank, 1996.
26. **Murray CL, Lopez AD.** Alternative projections of mortality and disability by cause 1990–2020: Global Burden of Disease Study. *Lancet*, 1997, **349**: 1498–1504.
27. **Peto R et al.** *Mortality from smoking in developed countries 1950–2000.* New York, Oxford University Press, 1994.
28. **Liu B-Q et al.** Emerging tobacco hazards in China: 1. Retrospective proportional mortality study of one million deaths. *British Medical Journal*, 1998, **317**: 1411–1422.
29. **Connolly GN.** Worldwide expansion of transnational tobacco industry. *Journal of The National Cancer Institute*, 1992, Monographs **12**: 29–35.
30. **Pollock D.** Forty years on: a war to recognize and win: how the tobacco industry has survived the revelations on smoking and health. *British Medical Bulletin*, 1996, **52**: 174–182.
31. **Chaloupka F, Corbett M.** Trade policy and tobacco: towards an optimal policy mix. In: Abedian I et al., P, eds. *The economics of tobacco control: towards an optimal policy mix.* Cape Town, University of Cape Town, 1998: 129–145.
32. **Roemer R.** *Legislative action to combat the world tobacco epidemic,* 2nd ed. Geneva, World Health Organization, 1993.
33. **Barnum H.** The economic burden of the global trade in tobacco. *Tobacco Control*, 1994, **3**: 358–361.
34. **Chaloupka FJ, Warner KE.** The economics of smoking. In: Newhouse JP, Cuyler AJ, eds. *The handbook of health economics.* New York, North-Holland (in press).
35. **Chaloupka FJ, Laixuthai A.** US trade policy and cigarette smoking. In: *Asia National Bureau of Economic Research.* Working Paper No. 5543, 1996.
36. **Shepherd PL.** Transnational corporations and the international cigarette industry. In: Newfarmer RS, ed. *Profits, progress and poverty: case studies of international industries in Latin America.* Notre Dame, IN, University of Notre Dame Press, 1985.

37. *World tobacco file 1998*. London, International Trade Publications, 1998.
38. **Connolly GN**. *Tobacco, trade, and Eastern Europe*. Boston, MA, Massachusetts Department of Public Health, Tobacco Control Program, 1995 (unpublished paper).
39. **Joossens L**. *Improving public health through an international framework convention for tobacco control*. Geneva, World Health Organization, 1999, (FCTC Technical Briefing Series document WHO/NCD/TF1/99.2).
40. **Brundtland GH**. *Health in developing Asia: seizing the opportunities*. Speech delivered to the Asian Development Bank Conference, Geneva, 28 April 1998.
41. **Bettcher DW, Yach D**. The globalization of public health ethics? *Millennium: Journal of International Studies*, 1998, **27** (3): 469–496.
42. **Primo Braga CA**. Trade-related intellectual property issues: the Uruguay Round and its economic implications. In: Martin W, Winters LA, eds. *The Uruguay Round and the developing countries*. Cambridge, Cambridge University Press, 1996: 341–379.
43. **Gervais D**. *The TRIPS Agreement: drafting history and analysis*. London, Sweet & Maxwell, 1998.
44. **Wasunna AE, Wyper DY**. Technology for health in the future. *World Health Statistics Quarterly*, 1998, **51**: 42–52.
45. **Kealya BK**. *TRIPS Agreement on patent laws: impact on pharmaceuticals and Health for All*. New Delhi, India, 1997 (unpublished paper).
46. **Levin RC et al**. Appropriating the returns from industrial research and development. *Brookings Papers on Economic Activity*, 1987, **3**: 46–47.
47. *The question of patents: the key to medical progress and industrial development*. Geneva, International Federation of Pharmaceutical Manufacturers Associations, 1998.
48. **Nogues J**. Social costs and benefits of introducing patent protection to pharmaceutical drugs in developing countries. *The Developing Economies*, 1993, **31**(1): 24–53.
49. **Challu P**. *Patenting pharmaceutical products: consequences*. Mercado, Buenos Aires, 1991.
50. Briefing malaria – Can industry be wooed back into the act? *Nature*, 1997, **386**: 540.
51. **Winstanley P, Breckenridge AM**. Therapeutics and drug development. *Lancet*, 1997, **349** (Suppl. III): 3–4.
52. **Subramanian A**. Putting some numbers on the TRIPS pharmaceutical debate. *International Journal of Technology Management*, 1994, **10**: 1–17.
53. **Karandikar S**. *Indian drug industry after GATT*. MVRDC Bombay, World Trade Centre, 1994.
54. **Bale HE**. *The net benefits of intellectual property protection for pharmaceutical products*. Speech delivered at the WIPO Arab Regional Conference on Intellectual Property, Beirut, 21–22 April 1998.
55. **Shaarawi NM**. *Intellectual property rights in Egypt*. Egypt, Glaxo Wellcome, 1993 (unpublished paper).
56. **Rozeck RP, Berkowitz R**. *The effects of patent protection on the prices of pharmaceutical products. Is intellectual property protection raising the drug bill in developing countries?* Washington DC, National Economic Research Associates, January, 1998.
57. **Watal J**. Introducing product patents in the Indian pharmaceutical sector: implications for prices and welfare. *World Competition*, 1996, **20**: 5–22.
58. **Scherer FM, Weinburst**. Economic effects of strengthening pharmaceutical patent protection in Italy. IIC. *International Review of Industrial Property and Copyright Law*, 1995, **26**: 1020–1022.
59. Politics this week. *The Economist*, 13 February 1999: 26.
60. **Scherer FM**. *Industry structure, strategy, and public policy*. Reading, MA, Addison-Wesley, 1996.
61. *India patent protection for pharmaceutical and agricultural chemical products: report of the appellate body*. Geneva, World Trade Organization, 1997 (document WT/DS50/AB/R).
62. **Harris P**. *South Africa: drugs industry threatens to take S. Africa to WTO*. Johannesburg, Reuters News Service, 8 September 1997.
63. **Love J**. South Africa dispute over parallel imports of pharmaceutical drugs. *Consumer Project on Technology*, 1997, 8 October (Internet communication at <http://www.cptech.org>).
64. *Joint understanding between the governments of South Africa and the United States of America*. Washington, DC, United States Department of Trade and Industry, 17 September 1999.
65. *Revised drug strategy*. Geneva, World Health Organization (Executive Board resolution EB101.R24, 27 January 1998).
66. **Yamey G**. Agencies urge end to global trade restrictions on essential medicines. *British Medical Journal*, 1999, **319** (4): 1455.
67. **Davies R**. Responsible business in the global economy. *Financial Times*, 20 May 1998.
68. **Brundtland GH**. Presentation at the ad hoc Working Group on the Revised Drug Strategy. In: WHO Action Programme on Essential Drugs. *Globalization and access to drugs: Perspectives on the WHO-TRIPS agreement. Health economics and drugs*. Geneva, World Health Organization, 1998 (DAP Series No. 7: 63–68).
69. **Bettcher DW**. *Think and act globally and intersectorally to protect national health*. Geneva, World Health Organization, 1997 (document WHO/PPE/PAC/97.2).
70. **Aharoni Y, Hirsch S**. Enhancing competitive advantage in technology-intensive industries. In: Dunning JH, Hamdani KA, eds. *The new globalism and developing countries*. Tokyo, United Nations University Press, 1997: 260–302.
71. **Mayor F**. *Memory of the future*. Paris, UNESCO, 1994, (Challenges series).
72. **Roemer MI, Roemer R**. Global health, national development and the role of government. *American Journal of Public Health*, 1990, **80**: 1188–1192.
73. *Knowledge broker initiative: linking the creators and users of knowledge*. Ottawa, International Development Research Centre, 1997 (Internet communication at <http://www.idrc.ca/books/reports/1997/29-01e.html>).
74. **Ghosh B**. *Gains from global linkages: trade in services and movements of persons*. London, MacMillan, 1997.
75. **Hoekman B**. Assessing the General Agreement on Trade in Services. In: Martin W, Winters, LA, eds. *The Uruguay Round and developing countries*. Cambridge, Cambridge University Press, 1996: 88–124.
76. **Mandil S**. Telehealth: what is it? Will it propel cross-border trade in health services. In: Zarrilli S, Kinnon C, eds. *International trade in health services: a development perspective*. Geneva, United Nations Conference on Trade and Development (UNCTAD)/World Health Organization, 1998.
77. **Yach D**. Telecommunications for health — new opportunities for action. *Health Promotion International*, 1998, **13** (4): 339–347.
78. **Frenk J et al**. Consequences of the North American Free Trade Agreement for health services: a perspective from Mexico. *American Journal of Public Health*, 1994, **84** (10): 1591–1597.
79. **Warner D**. *NAFTA and trade in medical services between the US and Mexico*. Austin, TX, University of Texas at Austin, 1997.
80. **Gómez-Dantés O, Frenk J, Cruz C**. Commerce in health services in North America within the context of the North American Free Trade Agreement. *Pan-American Journal of Public Health*, 1997, **1** (6): 460–465.
81. **Pelkmans J**. The economic significance of the round. In: *The Uruguay Round results: a European lawyer's perspective*. Brussels, European Interuniversity Press, 1995.
82. **UNCTAD Secretariat**. International trade in health services: difficulties and opportunities for developing countries. In: Zarrilli S, Kinnon C, eds. *International trade in health services: a development perspective*. Geneva, United Nations Conference on Trade and Development (UNCTAD), 1998.
83. **Drager N**. Making trade work for public health: WTO talks in Seattle offer an opportunity to get public health on the trade agenda. *British Medical Journal*, 1999, **319**: 1214–1214.