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2. A PUBLIC HEALTH PERSPECTIVE

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Trade in services is a rapidly growing activity that is opening up new possibilities in the health sector. Although it is difficult to quantify the volume of such trade for lack of consistent, disaggregated data, there is growing awareness of its potential for both developing and industrial countries. In a generalized context of rising health care costs, coupled with a growing trend to reduce public spending in the social sectors, the advantages of exporting health sector skills and technology, or of attracting higher spending foreign customers to health facilities become apparent. Trade of health services offers countries the opportunity to enhance their health systems through the generation of additional financial resources, to improve the infrastructure by using the resources resulting from satisfying foreign demand, and to upgrade medical knowledge and technological capacities. Government health authorities are faced with a number of competing priorities and have to assess how changes in economic conventions can be harnessed in order to improve national health services and benefit the local population.

The competitive position of a health service will depend on various factors: the cost structure, the quality of health facilities and infrastructure, availability of skilled human resources, together with natural endowments, cultural affinities or geographical proximity. Developing countries can make the most of such comparative advantages as lower labour costs, a large skilled work force, or exclusive therapies. Different actors in a number of developing countries - governments, public and private sectors jointly, private sector associations or individual enterprises - are currently utilizing these advantages to benefit from trade.[2]

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[1] The authors thank Guy Carrin, Douglas Bettcher and Joe Kutzin of WHO for their valuable comments and contributions.

[2] See UNCTAD, International trade in health services: difficulties and opportunities for developing countries. In this volume.

Yet the question remains: how can objectives of profitability and resource generation be reconciled with those of the improvement of the population's health status - the goal of every health system?

WHO has identified three interim policy objectives to further that goal: equitable access to care, quality of care, and efficient use of resources. **Equitable access** can be generalized as "equal utilization of health services for the same need" combined with "vertical equity", that is, users contributing according to their economic capacity. **Quality** refers to the standard of the health care system. **Efficiency** is related to the allocation of resources. Resources are used efficiently if a given output is produced at minimum cost, or maximum output is produced at a given cost.

In an attempt to assess whether the objectives of health and of trade can be compatible, the following sections look at trade in health services under the four modes identified in GATS (which in practice overlap to some extent) in order to measure its impact against the yardstick of the three health policy objectives, and to complement the commercial viewpoint with a qualitative public health dimension. In so doing, it pinpoints potential positive or adverse effects of such trade on the health sector, particularly in developing countries, and complements the commercial viewpoint with a qualitative public health dimension

It is worth noting, however, that GATS does not oblige WTO Members to open a specific domestic sector, such as health, to foreign suppliers, nor to lift all restrictions on trade. Countries indicate, in the schedules of commitments which form an integral part of GATS, the domestic service sectors and activities that they agree to open up, and specify any trade barriers they intend to maintain.

I MOVEMENT OF PERSONS SUPPLYING SERVICES

The emigration of qualified health personnel professionals, attracted by better living conditions, higher remuneration, and career opportunities elsewhere is a problem with which health authorities in developing countries have had to grapple for many years. Indeed, it has been estimated that 56 per cent of all migrating physicians come from developing countries;[3] the figure for nurses is likely to be higher. Among doctors it is often the categories that are in short supply which go abroad. In Ethiopia, for example, it is reported that between 1984 and 1994, 55.6 per cent of the pathology graduates from the Addis Ababa Faculty of Medicine, left the country[4]. In Ghana, a cohort of 65 graduated from

[3] A. Mejia, H. Pizurki, E. Royston, *Physician and nurse migration: analysis and policy implications.* Geneva, World Health Organization, 1979.

[4] S. Ababulgu, Problem of physician migration in Ethiopia. Addis Ababa, St. Paul's Hospital, 1997. Unpublished document.

the Medical School in 1985; by 1997 only 22 remained in the country.[5] As a result of the outflow from Jamaica of all kinds of skilled health personnel - public health nurses, therapists, midwives, technicians and certain categories of medical specialists - 50 per cent of posts for registered nurses and 30 per cent of midwifery posts remained unfilled in 1995.[6]

Although skilled health personnel tend to go to the industrial countries of the North, there is also a considerably South-South flow. In order to overcome its shortage of physicians, Ghana is recruiting doctors from Cuba on defined limited-term contracts between the two governments. Jamaica is currently trying to palliate the lack of nurses by recruiting them from African countries, including Ghana. A recent study found that doctors and nurses from India also go to the Gulf States and Middle-Eastern countries, often on short-term contracts, but many as migrants[7].

Many factors contribute to sustaining the outflow. Potential earning differentials between countries may be a big incentive, but poor working and living conditions in the home country may also pay a large part in the decision to emigrate. Moreover, job-seeking abroad is facilitated by the fact that health services are particularly labour intensive and the scientific knowledge acquired has universal application.

Potential impact on the national health sector

Equity. The outflow of health personnel will have a clear impact on equity if it produces shortages in the home country, thus reducing access to the services that would have been provided by the migrants. The loss of specific categories of health professionals will also reduce the range of services available. In cases where the number of highly specialized professionals, such as public health specialists, is very limited, emigration of even a few people could mean that a whole service area becomes inoperative. On the other hand, if the categories of health personnel involved are those in which the home country has an oversupply, the question is more one of efficiency than of equity.

Quality. The quality of health care will also suffer if a country is losing its best health professionals. The outflow of health personnel could be compensated by an inflow of foreign labour, but if the quality of training is below that of migrating resources, the quality of care can be expected to deteriorate. Recruitment of health personnel is therefore sometimes restricted by regulation so as to assure high-quality candidates.

[5] Volta Regional Research Team, The doctors are out - where are they*?* Accra, Ministry of Health, 1997. Unpublished document.

[6] Pan American Health Organization, PAHO internal document. Washington, 1995.

[7] I. Gupta, B. Goldar, A. Mitra, The case of India. In this volume.

Temporary movements of health personnel could nevertheless have a positive effect on the quality of care by contributing to a general upgrading of skills and knowledge when returning individuals resume their activities in their home country. Returnees may not, however, be prepared to work in rural centres or district hospitals unless that was their experience abroad.

Efficiency. Economics is a major consideration in the movement of health professionals. In most countries the education of health personnel is largely subsidized by public funding and requires significant investment (see next section). The outflow of health personnel in effect provides a subsidy to the receiving country for which there is no direct compensation. Measures to compensate a shortage of health personnel as a result of migration would entail additional costs. Costs may be partially offset by the remittances that migrants send home, which are substantial in such countries as the Philippines, but the public sector itself is not directly compensated.

Arrangements to compensate for the benefits that host countries gain from the movement of health personnel could be one way of minimizing the loss of investment in education and training suffered by developing countries. Governments could arrange contracts for the temporary employment of health personnel, but seem feasible only if they own the labour (as in the case of Cuba). Alternatively, some countries have introduced either negative incentives to migration, such as a migration tax or (partial) refund of tuition by the professional that leaves too soon after graduation, or positive incentives for professionals abroad to return, such as tax exemptions or deductions.

The loss of health personnel from needy countries to wealthier ones is already a serious problem. If barriers to this type of movement are reduced without an appropriate regulatory framework and/or improvement in working and income conditions in the domestic health system, equity, quality and efficiency will all suffer. It is worth noting, however, that GATS places limitations on the presence of persons supplying services, and its provisions do not apply to people seeking access to foreign labour markets[8]. In other words, its provisions apply to people who supply services abroad on a fixed-term, rather than on a permanent basis.

The movement of health personnel also involves broader, macroeconomic issues, such as the effect of net foreign income and transfers as a result of widespread migration (usually welcomed by ministries of finance and central banks), or increased household incomes among certain population groups derived from remittances of family members working abroad.

II MOVEMENT OF CONSUMERS

[8] WTO, *General Agreement on Trade in Services*, Annex on Movement of Natural Persons Supplying Services under the Agreement, paragraph 2.

Movement of health services consumers include both patients seeking treatment abroad and students studying abroad. The two groups are discussed separately in the section below.

Movement of patients

Patients might seek health care abroad for various reasons. Wealthy patients in particular might wish to take advantage of advanced, specialized treatments unavailable in the home country or perceived as better quality, or to avoid long waiting lists in the home country. Industrial countries receive most of these patients, foremost the United States.

Others might go to certain developing countries to benefit from lower-price treatment of equal quality, including medical and dental outpatient care or paramedical services; or to convalesce or benefit from such natural endowments as hot springs or spas[9]. The trend is enhanced by rising consumerism that is driving demand for such services as "exotic" or exclusive therapies or for more affordable sources of services not covered by health insurance, such as cosmetic surgery[10]. Other attractions might be easier access to personal care, or more human relations with health professionals.

Patients might also travel between developing countries because the home country cannot provide basic primary or hospital care, or those services are of much lower quality. Others might be refugees or migrants who demand health services in the host country. In order to qualify as trade, however, it is assumed that such "intra-South" movement involves the capacity to pay for services[11].

Developing countries might seek to attract foreign patients in order to increase foreign exchange earnings, provide employment for health personnel, and benefit from economies of scope that would help to upgrade their health services as whole. Although few give priority to the development of a specialized subsector, some have invested in improving facilities for the purposes of receiving foreign patients, often from other countries in the region. They are in a position to offer good-quality services at lower costs, well-qualified staff, or exclusive forms of alternative medicine that appeal to customers in industrial countries.

India, for example, sees itself in an advantageous position. It can offer both "super specialties" such as cardiovascular surgery, and certain exclusive alternative therapies, highly qualified medical personnel, and a well-developed pharmaceutical sector. Its chief advantage lies in competitive prices, which are estimated at around one-fifth to one-tenth those of industrial countries for the

[9] UNCTAD, op. cit.

[10] G. Wolvaardt, Opportunities and challenges for developing countries in the health sector. In this volume.

[11] This may be the case even of refugees. In south-east Guinea, for example, refugees did have capacity to pay and were “inserted” into the local health systems.

same intervention[12]. Similarly, Cuba has been developing a supply of services designed specifically for foreign patients. They are marketed through Servimed, an agency set up ten years ago to generate foreign exchange from the sale of health tourism packages and to establish joint ventures. The agency has associated itself with tourist agencies and tour operators abroad in order to promote the sales of various packages of medical treatment and stays in resorts and spas. Advantages lie in competitive prices due to low labour costs, highly qualified health professionals, and certain exclusive treatments, which draw patients essentially from Latin and North America[13].

In view of rising health care costs, to which services consumed by a growing number of older people will increasingly contribute, the advantages that certain developing countries can offer lead one expert to suggest that if the health insurance of retired people were portable, a number of them might choose to live in those countries. Both sides would benefit: the sending country from better contained cost of health services and the host country from increased revenues[14].

Potential impact on the national health sector

Equity. The overriding concern related to equity is that the delivery of health services to paying foreign patients should not have adverse effects on the health coverage of nationals or their access to services. In this regard, it is important to consider the source of funds, that is, who really pays for the services. Use of public funds to subsidize care providers - and even privately funded services often have some elements of public subsidies - may reduce the access of the domestic population to health services. The supply of services in the domestic market could also be affected in cases where public sector providers (physicians, nurses, and other health professionals) attend foreign patients. Especially when the capacity of a health care system is limited, foreign patients might compete with domestic ones for services.

Quality. Countries must be able to provide quality services if they wish to attract foreign patients; this usually involves the upgrading of human and physical resources. Naturally, any improvement in services stemming from a policy of treating foreign patients should benefit as much as possible the local population. If separate facilities or health personnel provide care for foreign patients, quality gains may not spread throughout the system. On the other hand,

[12] H.A.C Prassad, Healthcare exports under consumption abroad mode: opportunities, obstacles and challenges for developing countries in general and India in particular. New Delhi, Indian Institute of Foreign Trade, 1997. Unpublished document.

[13] D. Diaz, and M. Hurtado, International trade in health services: main issues and opportunities for the countries of Latin America and the Caribbean. Washington, Pan American Health Organization, 1994 (Technical Reports Series No. 33).

[14] D. Warner,.The globalization of medical care. In this volume.

if these providers also attend to the general population (for example, through a contractual arrangement between the government and the provider to supply services to the local population), more generalized quality gains can be expected.

Efficiency. Developing countries may be either providers of health care or a source of patients. In the first case, if they use public funds for upgrading of health services to attract foreign patients, and if such upgrading is based on the acquisition of expensive high technology, there would be a social cost: fewer resources would be available to improve quality and equitable access in the rest of the health care system. On the other hand, revenues generated from provision of care to foreign patients could be allocated in part for upgrading quality or improvement of access in general, for example, through cross-subsidization. Agreements on portability of insurance coverage for treatment abroad will be essential for further development of this kind of activity.

In the second case, a number of governments subsidize the care of their nationals abroad if a specific treatment is not available in the home country, but the public health sector has to face difficult policy options. Will these services be provided as a public benefit, and if so, to which range of services will the benefit apply? Concerns have been expressed that where the benefits exist, they are not always used efficiently (or equitably). For example, patients may receive services abroad that could have been provided domestically. Where it is cost-effective for developing countries to use public funds to treat selected patients abroad, it is essential that related mechanisms should be well managed.

Movement of students

The movement of students for undergraduate and for postgraduate education in the health professions takes place between countries at all levels of development: from developing to industrial countries, between industrial countries, and also between developing countries[15]. Trainees may study abroad for various reasons: educational institutions or specific programmes may not be available in the home country, or all available training places may be filled. The choice of country for study may also depend on the fellowship or scholarship awarded. Another incentive may be the international reputation of the receiving medical, public health, or nursing schools and the potential for a good educational experience, which should contribute to better employment possibilities. In some cases the cost of studying abroad might be lower, although many developing countries now require foreign students to pay higher fees than nationals in order to capture some of the education subsidies that benefit national students. The costs of travel and accommodation also have to be taken into account.

On the other hand, foreign diplomas or certificates may not be recognized in the student's home country. Further study - sometimes in the form of

[15] See A. Mejia, H. Pizurki, E. Royston, op. cit.

internships - and assessment is often required before a licence to practice is given.

Developing countries have long been worried by the loss of their trainees who remain abroad after completion of study. Their concern was reiterated at a recent meeting of Portuguese-speaking African countries; efforts to retain qualified human resources were among the chief priorities in their health sector[16]. The situation has also started to preoccupy countries that supply educational services: they apprehend the saturation of their markets by foreign graduates who do not return home, or the loss of training possibilities to foreign students paying higher fees than nationals.

It appears, however, that the number of developing country nationals studying abroad is gradually falling as a result of initiatives by both countries that consume and those that supply medical education. Some consuming countries are establishing their own training institutions, or are using facilities within the same region where appropriate and feasible[17]. For example, WHO's Regional Office for Africa explicitly encourages WHO fellowships to be used in the African Region. The increasing use of telecommunications in medical education (see section IV) may also reduce the need for study abroad, although certain new health disciplines will still require training in the developed countries. Some supplying countries, such as Canada and the United States, are drawing up more comprehensive plans for health human resources that include measures to regulate the number of foreign students who can be licensed to practice in the health care system.

Potential impact on the national health sector

Equity. Access to health services in developing countries will be affected if overseas students do not return home, since fellowships are usually awarded for study in disciplines in short supply in the home country. Moreover, a mismatch may exist between the training received by the student and the needs of the home country. Where this occurs, returning trainees may be reluctant to go to needy areas in the country and/or they may not be adequately trained to perform their duties. The returning provider may also go to the private sector (even though the need is in the public sector) or may seek positions abroad. In either case, both equity and quality are affected.

Quality. The return of qualified health personnel clearly improves the quality of health services, provided that they have received training appropriate to conditions in the home country. Training within the same region would help in that regard. However, one of the barriers to a greater use of training facilities

[16] Final Report of the International Consultation on Human Resources for Health for Lusophone African Countries, Lisbon, May 1996. Geneva, World Health Organization, 1997. Unpublished document HDP/97.2.

[17] D. Diaz, and M. Hurtado, op. cit.

within developing countries is the lack of recognition of their qualifications. Degrees and diplomas from developed countries are often valued more highly. The design of agreements for mutual recognition of qualifications within and between regions would help in this respect. On a more global level, countries that supply and those that consume medical education need to agree on the content of curricula to ensure that it is relevant to conditions in the students' countries of origin.

Efficiency. Developing countries allocate significant public funds to training abroad; returns to investment are therefore a major consideration. The issue of who pays for training may be complicated by mixed sources of funding: undergraduate training is mainly subsidized by public funds, postgraduate training might be acquired abroad privately. A trainee who remains abroad means loss at least of the cost of undergraduate training. For this reason a number of countries offer, on a domestic or regional basis, incentives to repatriate. Further, resource allocation is likely to be inefficient if training abroad does not address health problems of priority in the students' countries of origin.

Nevertheless, where the foreign educational programme is well managed and oriented to sending countries' needs, it might be more efficient for a developing country to continue to support students abroad than to set up its own educational institutions. In this case regional cooperation may offer an alternative through the establishment of joint training institutions tailored to the health needs of a given region.

III FOREIGN COMMERCIAL PRESENCE

The extent to which governments might wish to open their health sector to foreign service suppliers is a policy choice which is likely to depend on their prior experience of national private provision of health services or - and perhaps more important - of managing contracts for those services.

In fact, restrictions to foreign commercial presence in the health sector remain in most countries. Others have only recently started to open up their health sector to foreign investment, expecting that this will help to improve services, contain costs, and take pressure of the public sector[18]. Investment so far is usually in hospital operation or management or in health insurance. There is no evidence that foreign health service providers are seeking especially to invest in developing countries, where only a small percentage of the population can afford private treatment.

A common pattern of investment is for a foreign provider to enter into a joint venture with local partners, which helps to ensure access to qualified local health personnel, a supply of paying patients and a better understanding of local

[18] UNCTAD, op. cit.

characteristics. Or foreign firms might offer "managed care" services, which integrates the financing and delivery of medical care through contracts with physicians and hospitals and links with insurance companies[19].

Potential impact on the national health sector

*Equity.*A foreign commercial presence in the health sector, in the form of hospitals or health insurance schemes might improve delivery of health services, but gains in most developing countries are likely to accrue to the more affluent segments of the population. The poor would only benefit from better access to health care if resources were reallocated within the public sector as a result of a greater use of the private sector by those who could afford to pay. The presence of foreign commercial firms might also distort the health care market by provoking an internal brain drain. For countries facing real shortages of skilled health professionals, an exodus of providers from the public to the private sectors would leave fewer skilled physicians and nurses working in the public sector to serve the majority of the population. The health system would risk becoming increasingly two tier, with different subsystems serving different population groups.

Increased foreign presence in health facility management does not have any obvious implications for equity in access to health services.

Quality. A new or increased foreign commercial presence in hospitals and health management may improve quality through the introduction of better management techniques and information systems. Better quality may be perceived, however, as a greater concentration of sophisticated medical technology, to the detriment of a more realistic and comprehensive approach to quality in health care. In this case, governments may face pressure to allocate resources to high technology services rather than to meet their broader societal priorities. Further, the arrival of foreign hospitals and insurances might cause a substitution effect, with private services gradually replacing certain publicly provided services. This would attract resources from the public services, making it difficult for them to maintain whatever quality they have. In short, foreign competition in the health sector does not necessarily lead to an improvement in quality. Evidence suggests that for this to happen, the health sector must be well structured and regulated.

Foreign commercial presence in medical education may have positive externalities for national educational institutions if there is a sharing of teaching methods, curricula and other materials. However, if the public sector loses qualified teachers to the private sector, the quality of its education will suffer.

*Efficiency***.** The impact of new or increased foreign commercial presence on the efficient use of a country's health sector resources may vary. The

[19] Ibid.

presence of foreign firms, through their investment in health care (e.g. hospitals, health insurance companies, educational institutions), is likely to increase the overall level of funding in the sector. Under certain conditions, this inflow of financial resources might reduce the financial pressure on governmental health-related expenses, allowing public funds to be reallocated in a more efficient (and equitable) manner. In general, though, these conditions are not obtained because even private services are usually subsidized to some extent (directly or indirectly). Moreover, public investments - possibly substantial - might be necessary to attract foreign firms. At a minimum, these would include a clear and attractive set of regulations concerning the presence of foreign firms. Thus, an expansion of foreign private firms might actually absorb more public health funds rather than free them.

In principle, an influx of foreign firms should increase competition in the delivery and financing health services. Unlike most other segments of the economy, however, the pervasiveness of market failures in the health sector (especially with respect to information) means that greater competition among providers does not necessarily improve efficiency. It may lead to an increased volume of services (known as supplier-induced demand), and greater investment by hospitals in high-technology equipment in order to attract patients. Both these trends contribute to a rapid escalation of costs. Private competing insurance companies might also engage in "cream skimming": trying to select only good risk (i.e. healthy) clients, leaving the public sector to manage the costs of the higher risk population.

If governments aim to improve the efficiency of the health sector by allowing foreign commercial presence and stronger competition, they need to provide a strong and effective regulatory framework and appropriate incentives for the private actors. Foreign firms, such as transnational insurance or hospital corporations, might be considerably more sophisticated than the regulatory arms of government and could to take advantage of under regulated environments in ways that might be detrimental to the overall equity and efficiency of the sector. Most important, governments need first to frame clear national policies on health and health care financing, then determine the scope for an expanded foreign presence within them.

IV CROSS-BORDER TRADE

The rapid growth of information technology and telecommunications has greatly expanded the potential for providing health services across borders, even if they might at times need to be combined with such conventional means as postal services.

Such trade takes place chiefly in the form of telemedicine, defined as the practice of medical care using interactive audio, visual and data communications. This includes care delivery, diagnosis and treatment, and

medical education[20]. To a certain extent, it is a substitute for direct contact between health care provider and patient, or consultation among providers. It enables, for example, patients to consult senior physicians, medical students to follow the most up-to-date courses without the cost of travel, or local clinics to send radiological images by satellite for rapid interpretation by specialist centres.

For nonclinical purposes, computer-based information and communication systems provide access throughout the world to specialized data for such uses as management of health services at community, regional or national levels; laboratory testing, diagnosis and treatment; or surveillance of disease patterns and trends.

For evident reasons, cross-border trade in health services flows chiefly from North to South. For example, commercial telemedicine services exist between several Arab Gulf countries and the United States. In developing countries, with fewer high-technology telecommunication facilities and specialized health professionals able to undertake such services as telediagnosis, supply is limited. None the less, several are starting to exploit their comparative advantages in this area. For instance, in some of China's coastal provinces, telediagnosis services are provided to patients in Taiwan, Macao and other countries of south-east Asia.[21] Similarly, several central American countries send medical samples for diagnosis to Mexico's public health hospitals.[22] Further opportunities are opening in nonclinical services.

Although telemedicine and information technology evidently advance fastest in rich countries, it is the poorest countries that need them most in order to bridge the gaps that cannot be filled by conventional means. Considerable technical support is being provided to them through international cooperation involving both noncommercial bodies and some major corporations[23].

Potential impact on the national health sector

Equity. It is difficult to judge whether increased use of telemedicine in developing countries would lead to more equitable access to health services, mainly because there are several options for financing the cost of such technology. First, imagine that during a number of years those costs are supported by donors only. District hospitals could take advantage of the services offered, and access of local populations to higher quality care would improve. In this case, there would be a movement towards equity. Second, were the costs

[20] World Health Organization, Health informatics and telemedicine. Report by the Director-General, Geneva, 1997. Unpublished document EB99/30.

[21] H. Xing, Trends in China's medical service exports and the role of telecommunication services in exports. In this volume.

[22] D. Diaz, M. Hurtado, *op. cit.*

[23] See, Health informatics and telemedicine. Geneva, World Health Organization, 1997. Unpublished document EB99/INF.DOC./9.

covered by the public sector, the assessment would depend on the nature of public finance. Often dominated by indirect taxation, it might not be considered equitable from the standpoint of vertical equity.[24] Third, should user fees or health insurance be involved in the financing of telemedicine, judgements about equity would depend on whether there are fee schemes or health insurance schedules that take account of people's relative incomes. Moreover, a combination of financing options could be used, which would make equity judgments even more difficult.

A further consideration concerns the mobility of health professionals. If work in telemedicine attracted skilled health workers away from other services, because of, for instance, opportunities to upgrade skills, higher wages or career prospects, the availability of human resources in the health system might become skewed towards telemedicine patients, thus reducing equity overall.

Nevertheless, there would be a significant equity gain if telemedicine realizes its potential to provide remote and underserved populations with otherwise inaccessible services. In general, clear government policy on the place of telemedicine in the health care system is needed to ensure that this new technology serves to improve equity.

Quality. Use of telemedicine can clearly improve the quality of the health system. It offers new possibilities both to enhance the timeliness and efficacy of health interventions and to improve the training of health providers. For example, a general practitioner could seek advice or expert opinion anywhere in the world; or a health worker could obtain from a distant location guidance of a physician in attending a patient. Use of teleimaging can provide rapid and reliable diagnoses that local facilities might not have the skills or equipment to supply. None the less, appropriate mechanisms would be needed to maintain standards of care and of training associated with use of this technology.

Efficiency. The effect of telemedicine on the efficiency of health services needs to be carefully assessed in developing countries in view of the costs involved. These include not only communications infrastructure, equipment and operation, but also the training of skilled personnel to run a communications system.

Here again, the source of funding is an essential element in assessing potential efficiency gains, and both the public and private sectors are likely to be involved. In view of the considerable capital investment required, solely private funding is rare in this market; firms often receive government subsidies in the form of tax exemptions (The volume of investment might also provide an argument for maintaining this technology once in place). Yet use of public funds to pay for telemedicine raises the question of cost effectiveness. Investments in less sophisticated types of care or inputs may be more efficient

[24] See fourth paragraph for definition.

in terms of reduced morbidity or mortality (or a larger number of quality-adjusted, or disability-adjusted, life years), and therefore more cost effective.

Other questions that need to be considered are which services will **not** be provided if scarce resources are reallocated to resource-absorbing technologies such as telemedicine, and the cost of development and management of the appropriate legislation and regulations.

Nevertheless, with regard to training, the development of communications for education could eventually result in fewer trainees or health professionals going abroad to study. Moreover, the training possibilities offered by telemedicine are likely to be less expensive for the government than subsidized study overseas. So is therefore a potential for saving resources in the long term, although it is doubtful whether there would be much effect on the loss of qualified professionals through migration (see also section V).

V TRADE-OFFS FOR DEVELOPING COUNTRIES

There is increasing interest in the possibilities that trade in health services might offer, essentially to increase foreign exchange earnings. In a social sector such as health, governments will have to make judicious choices in order to reconcile commercial considerations with the social priority of ensuring access of all the population to good quality and efficient services. Developing countries in particular are vulnerable to market distortions which may be detrimental to that objective, as well as being prone to certain chronic problems, such as those related to the movement of persons supplying health services. Ideally, a policy to promote such trade in health services should be chosen for the purpose of furthering public health objectives.

INTERNATIONAL TRADE IN HEALTH SERVICES: ANALYSING TRADE-OFFS FOR DEVELOPING COUNTRIES

Modes of trade	**Health policy objectives**		
	Equity	**Quality**	**Efficiency**
Cross border	Serving remote areas	Improved quality	v. substantial investment
Movement of consumers Inflow of foreign patients	"Crowding out" nationals	v. improved quality Upgraded skills	v. possible loss of investment
Outflow of students			

Foreign commercial presence	Possible "two-tier" system		v. possible freeing up of resources
Movement of persons supplying services	Reduced access to services	Loss of quality	Loss of public investment v. foreign exchange remittances (private benefit)

Policy-makers need to compare the different options available with national priorities; one way to do so is through a framework of the kind shown above. This matrix sets out schematically some of the key issues, presenting the modes of trade along the vertical axis and the health policy objectives along the horizontal. Some potential tradeoffs can be observed between the policy objectives for a particular mode of trade, as discussed in the preceding sections.

Naturally, other elements have to be taken into account aside from the three public health objectives indicated here. There is little evidence as yet of the impact of trade on the performance of health services, although it is likely to depend on a country's level of the economic and social development. These effects will need to be examined within the context of health sector reform in order to determine necessary adjustments. Analysis might also be needed of the impact of trade flows on the poorest population groups, which may not be in a position to express their views. Trade in health services will also have repercussions on economic sectors - education, tourism, transportation, infrastructure, for instance - and at a macroeconomic level, for example on employment and immigration policy. These linkages also need to be better understood. The starting point for all research of this kind is comparable, desegregated data, few of which are currently available.

A further step would be to encourage participation of civil society in the decision-making process related to trade liberalization and the use of health resources, which would help to assess the acceptability of new policies.

In an optimal situation, a perfectly functioning market in the health sectors (as in others) would assure the efficient allocation of resources, but that is likely to be incompatible with social objectives. Governments might therefore seek "second best" solutions in order to minimize possible damage to public health objectives, while maximizing economic and social benefits to be obtained from trade in health services. Possible options could include allocation of part of the revenue from trade to domestic health development, mechanisms to secure the interaction between foreign (imported) and domestic health services to the benefit of the whole population, incentive systems to discourage migration of highly qualified health professionals, and so forth, backed up by greater cooperation among countries, especially within regional trade groups.

Ultimately, and despite the cost to the health system, all considerations point to the need for governments to provide a strong and effective regulatory framework for the private actors involved in trade in health services. But, above all, and especially in developing countries, they have to be able to reinforce it.

In this regard, it may be useful to look beyond national boundaries to the international context. National health systems are becoming increasingly linked through various aspects of globalization - one of which is trade. Regulations and standards intended to ensure the quality and safety of traded health services will increasingly be established on an internationally agreed basis. This means that governments, when framing policy, setting standards and drafting legislation will have to take account of the international context. In turn, a sound international legal and normative framework should both facilitate their task and complement the national regulatory environment.