Hospitals in a Globalized World: A View from Canada

INVITED ESSAY

Andrea A. Cortinois, BSc, MPH, PhD (Cand.)
Research Associate
Centre for Global eHealth Innovations,
University Health Network, Toronto

Sarah Downey, BSc, MHA, CHE
Executive Director of Operations
Princess Margaret Hospital,
University Health Network, Toronto

Tom Closson
President and CEO
University Health Network, Toronto

Alejandro R. Jadad, MD, DPhil, FRCPC
Director
Centre for Global eHealth Innovations,
University Health Network, Toronto

Abstract

Globalization is a complex, multidimensional phenomenon that has already influenced the way hospitals operate and will increasingly impact the healthcare landscape and patients' experience worldwide. This paper briefly analyzes the

direct and indirect effects of globalization on healthcare systems and services, mainly focusing on the experience of academic health sciences centres. Building their analysis on the belief that globalization is neither negative nor positive in itself, the authors compare alternative definitions of globalization, suggest possible ways in which it could impact health systems, examine how the role of large teaching and research institutions could evolve over the next decade or so, and put forward some fundamental questions faced by healthcare institutions.

In the first part of the paper, the complex and multidimensional nature of globalization is analyzed and the highly polarized debate on the nature of this phenomenon briefly summarized. The second part focuses on the effects of globalization on health and healthcare. A pre-existing conceptual framework is used to analyze the complex linkages between globalization and health, and alternative scenarios are presented to illustrate the current and potential effects of international trade policies and regulations on health systems. In the third part, changes in hospitals' structure, organization and functions triggered by globalization and the introduction of new information and communication technologies are examined. The analysis is built around five main elements: patients, human resources, capital, information and funding. Finally, the paper highlights some of the most fundamental challenges, both practical and ethical, that healthcare institutions have to face in the transition to a new era of globalized health services.

October 1, 2002 – A patient and her family physician in Timmins, northern Ontario, discuss the adjustment of the dose of an anti-arrhythmic drug with a cardiologist at the Toronto General Hospital, through telehealth facilities supported by the NORTH network. At the same time, a cardiologist in Colombia, South America, is wondering whether she could e-mail a colleague at that same hospital for advice.

October 1, 2012 – María Contreras, a 32-year-old Colombian woman, has been diagnosed with breast cancer in Bogotá. She is very distressed and asks Dr. Gómez, her oncologist at the Colombian National Cancer Institute, to help her get a second opinion and explore existing treatment options. Dr. Gómez contacts the Centre for Global eHealth Innovation, based at the University Health Network, in Toronto, and through its International Collaborative Medical Program is introduced to Dr. Rania Shiran, a Pakistani specialist at Princess Margaret Hospital. Dr. Shiran and her breast cancer specialist team assess María's files over the Internet. The diagnosis is confirmed and the treatment protocol detailed. Dr. Shiran holds a multi-party video conference with María, Dr. Gómez and a medical Spanish interpreter from a California-based company. The revenues from this consultation, with those of the almost 2,000 international consultations completed every year at the University Health Network, are reinvested to support a number of innovative ventures, such as a program aimed at improving health services access for ethnic minorities in Toronto and another one focusing on the use of technology to improve the health status of underserved communities in low-income countries.

Globalization is a complex, multidimensional phenomenon that has already influenced the way hospitals operate and will increasingly impact the healthcare landscape and patients' experience, in Canada and worldwide. Hospitals, particularly in large urban centres, are gradually learning to care for patients from very diverse ethnic and cultural backgrounds, with a range of different expectations. They have to be constantly exploring innovative solutions to the problem of recruitment and retention of human resources, adding international professionals to the formula, while responding to the need for continuous training created by the adoption of modern technologies. Hospitals also have to deal with diminishing public funding and identify new and alternative sources of revenues, from ancillary services to the revenues created by intellectual property. They have to effectively manage the increasingly complex web of links with the private sector that pervade virtually all aspects of their activities, from ensuring research funds to acquiring equipment, supplies and services. Soon, they will have to radically rethink the design of their infrastructure and the way health service provision is organized to face the profound changes that the health sector, and society as a whole, will most likely experience in the Information Age. Finally, they will have to learn how to operate in a world characterized by the increasing integration of health systems across international borders.

Objectives and Rationale

The objectives of this paper are: (1) to suggest how globalization and the modern information and communication technologies (ICTs) that make this process possible could radically change both the external and internal environments of hospitals; (2) to discuss the role healthcare delivery organizations might play in a globalized world; (3) to stimulate discussion and debate around these themes to promote the active role of healthcare delivery institutions in shaping their own future and the future of the healthcare system.

This paper is based on the belief that globalization is neither negative nor positive in itself. It is a historical process in continuous evolution, almost certainly inevitable. It has to be analyzed in depth and monitored on an ongoing basis to identify its actual and potential positive and negative effects, with the purpose of maximizing the former while minimizing the latter. The paper is intended as an initial contribution to this analytical effort and an invitation for other institutions and stakeholders in the health sector to join the debate, share experiences and ideas and work co-operatively to envision the health system of the future in a globalized world.

This paper is also based on the perspective and experience of the University Health Network (UHN), a multi-site academic health sciences centre located in downtown Toronto. During the last couple of years, the UHN has been carrying out an analytical effort to strategically position the institution in the next decade. As part of this effort, a special "Globalization and the eWorld Task Force" was created. In its final report, presented in April 2001, the task force recognizes globalization not only as a fundamental shift in the way people work, live and think worldwide but also as a trend that is changing forever the way health services are organized and

healthcare delivered (University Health Network 2001a). The report also emphasizes the fundamental connection between globalization and the development and introduction of ICTs in healthcare organizations. It suggests that the healthcare sector will experience a radical technological transformation in the next decade, having lagged well behind industry average, until now, in the adoption of ICTs. This radical transformation will make geographic borders less important and expand our current vision of the healthcare system.

In addition, the task force observes how, while the legal and political mechanisms that will allow for the free expansion of healthcare systems across international borders are not yet defined, a "global environment" already exists in Toronto, represented by the city's multicultural population and the challenges it presents. "Globalization at home" should be UHN's first concern. This concern should translate into an ongoing effort to enhance cultural competency through education of the workforce regarding the impact of socio-cultural factors on the overall health of patients and staff; ongoing data collection and participatory analysis to monitor the effectiveness of institutional efforts in responding to changing socio-demographic trends; and the promotion of culturally sensitive service provision in diverse languages. A radical, long-term effort is needed to transform the institution into a global player and its mission and vision into real benefits for patients and their communities.

The paper is organized in four sections. The first one compares alternative definitions of globalization, highlighting their common features and briefly analyzing the general characteristics of this phenomenon. The second section suggests possible ways in which globalization could impact health systems. The following section analyzes how the role of hospitals, and in particular of large teaching and research institutions, could evolve over the next 10 to 20 years in a globalized environment. The final section suggests some central questions faced by healthcare institutions as starting points for a broader and more in-depth discussion among key stakeholders in the health sector.

What Is Globalization?

In recent years, the term "globalization" has often been used as a trendy catchword to describe a variety of heterogeneous and often unrelated subjects. From Marco Polo's travels, to the conquest of the New World, to the large migratory movements from Europe to the Americas, virtually every human activity crossing national borders has been sooner or later reinterpreted in terms of globalization. This word, however, has a more contemporary meaning, defining a complex and multidimensional phenomenon, in constant evolution and only partially understood, involving recent, radical and fast-paced changes in our way of living.

The UHN's "Globalization and the eWorld Task Force" opens its final report with a definition suggested by Lee (Walt 2000): "the process of closer interaction of human activity across a range of spheres, including the economic, social, political, and cultural, experienced along three dimensions: spatial, temporal and cognitive." This definition, like similar ones, has the merit of showing the complex, multifaceted nature of globalization, taking into consideration the major

Globalization is:

- a process or set of processes;
- historical and accelerating;
- inevitable;
- about economics, politics, society, culture and technology;
- about innovation and progress;
- defined by the rapid turnover of ideas, images, patterns and objects of consumption;
- about interconnection and interdependence;
- based on virtually instant and ubiquitous flows of information;
- based on trade, capital and labour flows;
- based on "flexible networks" and the continuous redefinition of inclusion/exclusion criteria;
- shaping domestic politics and relations of virtually every country;
- transforming spatial organization of social relations and transactions.

areas and dimensions involved in this historical process. Globalization, as Held and colleagues suggest (1999), amplifies and intensifies pre-existing processes and interactions, sometimes qualitatively modifying them; stretches social, political and economic activities across frontiers; intensifies interconnectedness and flows of trade, investment, finance, migration and culture; speeds up global interactions and processes; increases the velocity of diffusion of ideas, goods, information, capital and people; and deepens the impact of certain events so that their effects can be highly significant in distant places and specific local developments can come to have considerable global consequences.

Countless additional definitions may be found in the literature, stressing different aspects of this phenomenon in terms of its causes, mechanisms and actual or potential effects. It is interesting to observe that a large number of definitions look at globalization from a perspective that is either openly positive or negative. On the positive side, for example, globalization is defined as "the process of denationalization of markets, laws and politics in the sense of interlacing peoples and individuals for the sake of the common good" (Delbruck 1993). At the other extreme, it is defined as "the systemic implementation of trade liberalization rules by national governments through pressure from multinational corporations for the explicit purpose of increasing profits at the expenses of the principles of diversity, sustainability, culture, equity, and national autonomy" (Anonymous 2002a).

These opposite perspectives reflect the highly polarized debate on globalization that has been developing over the last few years. Essentially, two philosophies clash over the interpretation of this historical phenomenon. On the one hand, some focus almost exclusively on the possible opportunities created by the integration of world economies. On the other hand, others stress the actual, increasing inequities, within and among countries, that have been a distinguishing feature of global development over the last few decades.

According to many, the liberalization of international markets, the diminishing regulating power of governments, and the parallel rising economic and political power of transnational corporations result in benefits for an increasingly small elite and harm for the majority of the world population. Some authors suggest that while being very beneficial to those with

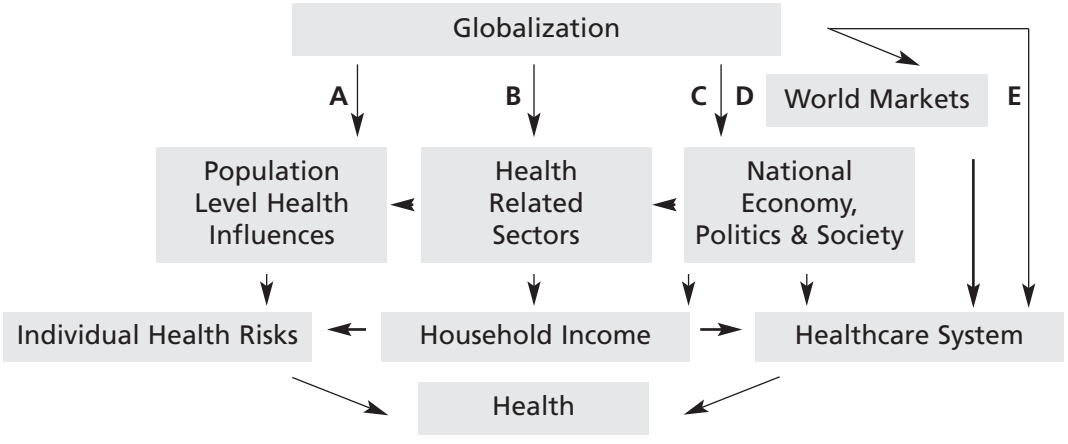
products, skills and resources to market worldwide, globalization does not earn good marks when measured against the yardsticks of poverty alleviation and sustainable development (Rodrik 2002). On the other side, some authors defend the positive role of globalization in development and insist this phenomenon has had a mitigating effect on income gaps between nations. Lindert and Williamson (2001), for example, analyze the economic history of income inequalities and conclude that, all effects considered, more globalization has meant less world inequalities.

Different stakeholders, having different perspectives and agendas, tend to emphasize opposite characteristics that are all consequences of the same phenomenon. It is important to recognize the link between positive and negative outcomes of globalization and maintain an open but vigilant view. Trade, migration, communication and dissemination of scientific and technical knowledge have undoubtedly been the basis of economic progress in the world (Oxfam 2002), but unfair and unequal resource development and allocation have also resulted from the skewed distribution of the benefits produced by this process.

How Does Globalization Affect Health and Healthcare?

To frame the question of how globalization does affect and will affect healthcare systems, and ultimately health, this paper makes use of a conceptual framework developed by Woodward and colleagues (2001) at the World Health Organization. The framework, presented in Figure 1, is intended as a tool for analyzing the numerous direct and indirect linkages between economic globalization and health, focusing in particular on the most contentious and potentially dangerous aspects of this phenomenon. It is also intended as a starting point for synthesizing existing literature, identifying gaps in knowledge, designing research initiatives and ultimately developing policies more favourable to health.

Figure 1 – Linkages between Economic Globalization and Health



Adapted with permission from Woodward et al. 2001.

As illustrated in path A of the diagram, globalization may directly impact population level health risks and, consequently, the levels of individual health risks. For instance, the exponential increase in the number of people travelling around the globe for tourism and business, compounded by the huge number of people displaced by poverty, war and diffuse violence, represents a facilitating factor in the spread of old and new diseases, such as cholera, malaria, tuberculosis and AIDS (Berlinguer 1999). Some of these diseases are reaching the dimensions of pandemics and clearly show the need for a global response. Another example of this type of link is represented by the international marketing and legal trade of dangerous substances, such as tobacco-derived products and alcohol. The European Union, for instance, while recently launching a joint initiative to fight lung cancer worth US$2 million, at the same time allocated US$2 billion to subsidize tobacco growing in Europe and export to other areas of the globe (Berlinguer 1999).

As shown in path B, globalization impacts sectors such as education, housing and public safety and security that, in turn, influence general determinants of health. The effects of these mechanisms are compounded by changes in levels of household income. Path C shows the more intuitive link between economic globalization and its effects on national economies, political institutions and society at large.

Globalization also affects healthcare systems. As already observed, it impacts national economies, creating interdependence among nation-states through financial and trade flows (path C). Given the economic and political importance of healthcare systems in most countries, globalization will impact their stability and potential for expansion through its influences on national economies.

Globalization has also resulted in the creation of integrated world markets, particularly in the areas of pharmaceuticals and hospital supplies and equipment (path D), including ICTs. Most hospitals in high-income countries prescribe the same drugs to treat pneumonia, use one of just three existing brands of linear accelerators in radiation treatment of cancer, and have Windows on their desktops. Availability and cost of these essential resources are for the most part entirely outside the control of countries, such as Canada, that have little or no dominance in these markets.

Even more important, most governments have very limited if any power to influence policies and regulations that define how world markets develop over time. The international agreements that regulate trade among countries belonging to the World Trade Organization (WTO), such as the Trade Related Aspects of Intellectual Property Rights (TRIPS), might have devastating effects on national economies and health systems, particularly in low-income countries. The TRIPS might result in a steep escalation of prices for medical technologies and pharmaceuticals, following the compulsory introduction of intellectual property protection. While no consensus has emerged on the magnitude of these effects and accumulated economic evidence is highly polarized, a number of studies comparing low-income economies suggest that significant differences exist between countries where patent protection already

exists and others where these policies have not yet been introduced (Bettcher, Yach and Guindon 2000). Even stronger economies such as Canada's can be affected by intellectual property protection policies. In August 2001, Utah-based Myriad Genetics Inc., owner of the Canadian patents on two susceptibility genes that could predict hereditary forms of breast cancer, informed provincial governments that it intended to exercise its exclusive rights to perform diagnostic testing on those genes. That meant all testing had to be done in Salt Lake City, Utah, at a price that was almost three times the cost of tests performed by Canadian hospitals. As a result, most provinces had to abandon the procedure (Hurst 2001).

Finally, globalization can directly impact health systems (path E) through the immediate effects of international trade policies. The General Agreement on Trade and Services (GATS), introduced in 1995 after the creation of the WTO, is the key international agreement expected to impact healthcare systems on a global scale. It is a system of international law that focuses on the service sector and on non-tariff barriers to trade. The new focus on services adopted by trade negotiators since the mid-1990s reflects the sector's growing importance. In the United States, for example, more than a third of economic growth in recent years has been because of service export. In the European Union, the service sector accounts for two-thirds of the economy and jobs (Price, Pollock and Shaoul 1999). Health and education alone represent 20% of Western countries' GDP (Pollock 2002), and healthcare has the potential to become the most important and lucrative of all services. Obviously, private ventures in the insurance, healthcare provision and pharmaceutical industries have a strong interest in capturing a share of this sector, and agreements such as the GATS represent an important opportunity for them.

In fact, repeated rounds of GATS negotiations are creating a favourable environment for the penetration of private enterprises into national health sectors previously closed to them. First, domestic government regulations that might represent an obstacle to the access of foreign corporations are interpreted as non-tariff barriers to trade and increasingly eliminated. Even rules that protect the environment and health and food safety, as well as those designed to nurture small local business or national culture, follow a similar fate. Second, under the GATS as under the NAFTA, the North American Free Trade Agreement signed in 1993 by Canada, the United States and Mexico, foreign service companies are granted "national treatment" status in all signatory countries. This means that no preference can be given to a domestic service provider over a foreign one (Barlow 2002). Third, even if at the present time public services, including healthcare, can be technically protected from being included in trade negotiations by defining them as government services, this could change very soon. In fact, according to GATS Article 1.3(c), a service supplied in the exercise of governmental authority is one that is provided "neither on a commercial basis, nor in competition with one or more service suppliers" (Price, Pollock and Shaoul 1999). This is not the case, for example, for healthcare services in Canada, and recent developments are creating increasing opportunities for the penetration of foreign corporations in the

Canadian health sector. Among others, Bill 11 in Alberta, permitting public funding of for-profit hospitals, makes that province, and ultimately the whole country, more vulnerable to a GATS challenge. Similarly, the federal government has recently listed health insurance for inclusion in future negotiation rounds. As a result, the very backbone of Canadian medicare might soon be exposed to "national treatment" challenges from foreign private insurers (Barlow 2002).

All this considered, what does the future of the Canadian health sector hold? To find a tentative answer to this question, it is helpful to refer to a paper recently prepared by Mendelson and Divinsky (2002). The authors analyze the main challenges faced by the principle of a single, universal, publicly funded healthcare system and suggest four alternative scenarios that portray the Canadian healthcare sector as it could look in 15 to 20 years. The first two of them are the most plausible ones and are therefore worth focusing on.

The first scenario, the "Global Club," represents a direct extrapolation of the globalization trends previously described in this paper. Large regional trading blocs and transnational corporations work towards increasingly freer markets while the role of the Canadian government as a policy-maker is significantly reduced. The second scenario, the "Shared Governance," is characterized by democratic reforms of global organizations such as the WTO, adequate and fair representation of the interests of smaller states, increased concerns for global equity and environmental quality and a maintained or even increased role for the Canadian government as a policy-maker.

The "Global Club" represents the most natural, in a way "passive," evolution of today's tendencies, while the "Shared Governance" scenario describes a situation that might be considered as an ideal correction of that route. The new course would emphasize the extension of the economic benefits of globalization to all countries; the movement towards a form of universal democracy; the respect of the "policy space" of governments needed to account for the specific circumstances of each country; the respect of ethical and equity-oriented principles; and the recognition of health and well-being as key benchmarks for assessing development policies. Steering towards this new course requires the commitment of all stakeholders in the healthcare sector. A few aspects of the future role hospitals will play in a globalized world are illustrated in the following section.

Building the Hospital of Tomorrow

Hospitals are open systems strongly influenced by the environment in which they operate (McKee and Healy 2002a). They interact with the surrounding environment to secure the resources needed for survival, adaptation and growth. Their policies and activities are constantly influenced by external factors related to the population they serve, patterns of prevailing diseases, public expectations, changes in the hospital system and healthcare system, and the broader socioeconomic and political environment.

How can hospitals maintain a dynamic equilibrium while surviving the often dramatic changes produced by globalization? How can they assume a proactive role in dealing with such changes? How will hospital functions

change, in the next decade or so, with regard to patient care, teaching, research and health system support?

As discussed in the previous sections, globalization and the modern ICTs that sustain it are major forces accelerating the process of change of many political, socio-economic and cultural features of our society and adding new variables to an equation whose results are still impossible to calculate. This phenomenon could influence hospitals, modifying their pre-existing surrounding environment as well as expanding it, due to the contraction of time and space that is one of globalization's defining features, adding new dimensions and multiplying the number of actors involved.

The definition of "catchment area," for instance, could be considered an interesting example of such environmental modifications. Nowadays, hospitals cover different catchment areas for different conditions, usually based on geography, the type of services provided and, for each condition, the prevalence of cases in the population. Catchment areas are rarely strictly defined, but they are usually relatively identifiable. In the next couple of decades, however, the concept of catchment area could become increasingly complex thanks to the new opportunities created by ICTs, Internet-based telehealth solutions and the progressive development of legislative tools supporting the provision of care across provincial and national borders. Catchment areas could expand to cover much larger regions and, in some cases, reach global dimensions. They could also become extremely flexible, expanding and contracting according to the needs of a "virtual," remote-user population and to the features of changing alliances among hospitals and networks of hospitals.

Such alliances could represent a second major effect of globalization. Hospitals, particularly large research and teaching centres, will most likely progressively specialize, by area of clinical care, characteristics of the target population, or model of integrated care, while getting involved in increasingly large collaborative networks with other institutions of comparable complexity offering a wide range of expertise. The result would be integrated, cutting-edge acute care delivered in part locally and in part remotely, through telehealth solutions. Hospitals would have to learn to become leaders in certain areas and followers in others, to allocate and use resources in the most efficient and effective way (University Health Network 2001a). International and global hospital networks could become increasingly important not only in developing collaborative research, educational and health service delivery activities, but also acting as strong consortia to increase their bargaining power when dealing with governments and other industries, such as the pharmaceutical and medical technology ones.

As a whole, the globalized hospital system of the future could be envisioned as a mixed system. It would include international networks of highly specialized, virtually connected "super-hospitals" immersed in a diffuse physical and virtual web of free-standing units, organized around mid-sized district hospitals functioning as planning, management and communication hubs, that would offer a variety of local, community-oriented, preventive and curative services. In a globalized environment, hospitals will

have to rethink their roles and functions with regard to at least five areas of key importance: patients, human resources, capital, information and funding.

Patients

A few significant changes will be produced by globalization on patient populations. At the local level, hospitals, particularly large ones offering third- and fourth-level attention and located in major urban areas, have to care for patients from increasingly heterogeneous ethnocultural and linguistic backgrounds, with mixed experiences and expectations, presenting new patterns of disease. These characteristics add to the complexity of the clinical encounter, usually increasing uncertainty, asymmetry of information and the relative weight of competing and often unspoken values (McKee and Healy 2002b). At the global level, hospitals will increasingly deal with "virtual" providers and patients through Internet-based solutions as well as other tools of modern technology. Patients will also increasingly cross international borders to receive healthcare.

In the first case, a comprehensive strategy is needed to respond to the changing needs of ethnically diverse patient populations. Healthcare delivery has to move from the hospital to the community. A new model of "hospital without walls" has to be developed through the creation of multicultural community programs that tackle the new challenges presented by globalization where they first become manifest, within families and communities, fighting social isolation and underservice. In addition, hospital infrastructures have to be enhanced to ensure cultural competency, encouraging the integration of human resources from a variety of ethnocultural backgrounds, training personnel to be able to handle the diverse requests they face, and producing culturally based educational and support tools to facilitate the appropriate use of available resources. Finally, the whole potential of modern ICTs has to be exploited to tailor healthcare to the personal needs of each patient, facilitate communication between patients and providers, encourage the most effective use of health services, efficiently integrate hospital services with community-based health and social services, and eventually remove the walls around hospitals, facilitating their increasing involvement in the promotion of health. It is hoped the final outcome of this process would be progressive elimination of episodic care and increased, continuous interaction of people with the healthcare system (Jadad 2001; University Health Network 2001a).

To provide "virtual" services, hospitals will have to learn how to deal with the diverse political and public expectations regarding quality of care, licensing, accreditation processes and payment of health professionals found in different countries. They will also have to learn how to recognize and meet the individual needs of users living in very diverse and heterogeneous environments, having different priorities, values and expectations (Jadad 1999; Eysenbach and Jadad 2001). Finally, organizations representing hospitals should have a significant voice in designing policies and standards needed to regulate the remote delivery of healthcare services across international borders.

The move towards free trade will also impact hospitals as more and more

Changes in Hospital Structure, Organization and Functions Triggered by the Globalization Process and the Introduction of ICTs

General

- expansion and increased complexity of hospitals' surrounding environments
- expansion and increased flexibility of catchment areas
- progressive specialization of large research and teaching hospitals
- creation of large, international or global collaborative networks of highly specialized, virtually connected "super-hospitals"

Patients

- increased ethno-cultural and linguistic heterogeneity of patient population
- new patterns of disease
- appearance of virtual patients (and providers) and gradual increase in their numbers
- increased number of international patients

Human Resources

- changes in staff-per-patient ratios, mix of required professional skills, and organization of work
- need for innovative strategies for recruitment, training, updating, and retention of staff
- increased need for integration of human resources from a variety of ethno-cultural backgrounds
- increasingly important role of international graduates

Capital

- fewer beds and more facilities for diagnostic, outpatient services, day surgery, and "virtual" remote care
- development of local diffuse networks of free-standing facilities
- development of horizontally integrated international networks of major teaching and research hospitals

Information

- increased reliance on knowledge production, dissemination, and translation
- more extensive use of hospitals' "wealth of wisdom"
- global sharing of locally-produced knowledge and critical local application of globally-available knowledge
- creation of international "communities of practice"
- more extensive translation of research-based evidence into practice
- increased information-based empowerment of patients
- knowledge sharing for improved clinical governance

Funding

- increased importance of global services revenues
- creation of multi-government and super-government funding mechanisms
- increased weight of research-generated funding from the commercialization of intellectual property
- increased accountability of hospitals for developing and commercializing new products with the support of research funding made available by local and national governments, as well as by international institutions

patients seek treatment abroad. It is perhaps inevitable that people will increasingly travel to other countries to use healthcare services, particularly when they are not available, are not available in a timely manner, or are not satisfactory at home. The desire for timeliness, for example, has already caused many Canadians to obtain radiation therapy services in the United States. The United Kingdom is working on establishing a formal mechanism, including a bidding process and quality standards, for out-of-country care of its citizens (Canadian Health Services Research Foundation 2002).

International collaborative networks will allow hospitals, particularly those providing quaternary level services, to focus on specific and highly specialized services, such as transplants. Some services would be better provided outside a province or country to ensure that the most skilled practitioner or most up-to-date technology is employed to achieve the best outcomes. Some Canadian hospitals need to position themselves as providers of services for patients who seek out-of-country care.

Human Resources

The new role and functions performed by the hospital of tomorrow will require people with different skills and new ways of working. While a lower staff-per-patient ratio will be possible in some areas, such as non-urgent consultations of users with chronic conditions who are well known by health professionals at the hospital, thanks to improvements in continuity of care, higher ratios will probably be needed to support complex patient management and integrated treatment. Innovative strategies for recruiting human resources, training, updating, and retaining them will have to be developed. International graduates will have to be added to the formula, and the increasingly heterogeneous ethnocultural background of staff will represent a new challenge for hospital management. Encouraging good communication and relations among all cultural groups and all professions will represent an essential strategy to retain staff, increase personnel's and patients' satisfaction, facilitate optimal teamwork and ultimately improve outcomes. High levels of organization and communication will be fundamental to support the diffuse network of services and facilities that will constitute the health system of tomorrow (McKee and Healy 2002a).

The biggest challenge of the future healthcare system in Canada will be the shortage of staff. The population and workforce demographics will see increasing rates of retirement at the same time as the demand for services rises. This staffing gap will be exacerbated over the next 10 years by the coincident extension of the length of training programs for most health professions.

In recent years, Canada has discouraged the free flow of healthcare professionals across international borders. This will change with globalization. Professionals will move more freely across borders both for the purpose of obtaining additional training and in search of employment. With advances occurring rapidly in medicine, there is great advantage in professionals going abroad to receive specialized training. Canada benefits from sending its professionals abroad for training and additional

experience. Also, Canadian hospitals offer an excellent setting for foreign health professionals to receive their advanced training. Some of those professionals will decide to stay on and work here indefinitely. With easier international movements of health professionals, Canada will play a central role in developing and monitoring international standards. Hospitals will work with licensing bodies to ensure such standards are applied to health professionals physically or virtually working across international borders.

Capital

Changing patterns of care require changes in hospital design. The increasing expansion of international networks of major hospitals, the growing importance of up-to-date diagnostic and therapeutic technology, telehealth in all its different forms, and the concept of "hospital without walls" or "hospital at home" will be some of the important factors influencing how hospitals are built and equipped. The hospital of tomorrow will probably have fewer beds and more facilities for diagnostic, outpatient services, day surgery and "virtual" remote care. At the local level, future hospitals could resemble diffuse networks of free-standing facilities offering patients seamless care and including main sites for emergency care and major surgery, ambulatory care facilities, daycare surgery, primary care and minor injury units, preventive care and community services (McKee and Healy 2002b). Major teaching and research sites would also be horizontally integrated in large, international networks offering remote, multi-specialist care thanks to the extensive use of cutting-edge ICTs and telehealth solutions.

Information

The globalized economy already is a knowledge-based economy. The hospital of tomorrow will have to increasingly rely on knowledge production, dissemination and translation, making the most of all sources of information and expertise available within the institution. Research and clinical practice will not be the only source of knowledge. Innovative solutions successfully applied to the management of human resources, non-clinical aspects of patient care, and the identification of new funding sources, for example, will be part of a hospital's wealth of wisdom. Locally produced knowledge will be shared through international networks of "super-hospitals" while globally available knowledge will be critically adapted and applied to local conditions. New ICTs will support the creation of "communities of practice," international and global collaborative initiatives sharing knowledge on an ongoing basis and working together towards common goals.

Also, translation of research-based evidence into practice will be promoted to support health professionals and the public and create opportunities for new interventions and services. Again, new ICTs will play an essential role in offering valid, relevant and applicable information in real time at the point of care for clinical shared decision-making that is evidence-based. ICTs will also be used to limit the asymmetry of information in the patient-provider encounter, levelling the playing field and giving patients and their loved ones a real chance to become active decision-makers in the process of care.

Finally, knowledge sharing, coupled with an enhanced definition of teamwork and the application of modern ICTs, will

help improve clinical governance, defined as the set of activities that bring together the tasks of management and quality assurance, according to a broad definition of quality that simultaneously encompasses efficiency and effectiveness (McKee and Healy 2002a). With optimal sharing and translation of available knowledge, those using resources will have access to reliable information to take account of efficiency outcomes, while those responsible for enhancing quality will be able to influence the use of effective resources.

Funding

In a globalized world of networked "super-hospitals," reliable sources of funding will continue to be essential. Existing funding from local governments will have to be constantly protected and renegotiated to keep pace with inflation and technological advances and to adapt to changing patterns of care.

Funding from local governments will become a lesser proportion of the total revenues of Canadian "super-hospitals," while global service revenues will become more important. There will be a growth in revenues from addressing international patients' needs through virtual care, using the Internet (e.g., telemedicine and telesurgery). In addition, the movement towards free trade will see a growing number of international patients seeking treatment at Canadian specialty hospitals and paying for these services at a level that will generate resources available to further develop the infrastructure to provide high-end services for Canadians as well. The potential for profit will encourage private sector investment and the further development of hospitals in Canada that can serve the world.

In addition, individual hospitals, international hospital networks and consortia will have to strongly advocate in favour of the creation of new multi-governmental or super-governmental funding mechanisms available to support international teaching and research activities and new forms of remote, integrated patient care involving institutions in multiple countries.

Research-generated funding deriving from the commercialization of intellectual property will increase in importance. Until now, Canada has been very unsuccessful in the area of health products commercialization, and its trade deficit in this sector has grown from $2 billion to $8 billion in the past 10 years (Anonymous 2002b). Almost no Canadian product has passed the $50 million threshold in yearly worldwide sales, and pharmaceutical products originating here tend to transfer to foreign ownership. To change this tendency, in recent years the federal and provincial governments have been increasing research funding available to Canadian academic hospitals. This trend should continue in the future, and more cross-border investments in research should also be added by public and private funding agencies. Hospitals will be held accountable for developing and commercializing new products and services with this increased funding (Anonymous 2002b). Once more, it will be important to find satisfactory mechanisms to account for the contribution of all participants, at all levels, involved in the development of multi-site, international or global research projects.

The Challenges Ahead

Global integration will most likely progressively accelerate, and its effects on

the Canadian health system and the organization of hospital care will become increasingly visible. Rapid changes and a high level of uncertainty will characterize this phase.

Policy-makers and managers cannot afford to remain spectators. They have to make a major imaginative effort to envision the healthcare system as they want it to be in 10 to 20 years and the role hospitals will play in it. A methodology to measure globalization tendencies within the healthcare system is needed to monitor changes and trends, focusing on political, economic, social, legal and technological aspects. Strategies to proactively influence such changes and effectively react to unexpected occurrences should be developed and put in place.

Large academic health sciences centres are ideal settings for the development and testing of such strategies. Among other reasons: they are essential healthcare providers, both in Canada and abroad, somehow representing a bridge between policy-making and front-line delivery of services; their focus on research and teaching fosters an innovative institutional culture that facilitates the development and testing of new, creative solutions; and the highly specialized, cutting-edge care they offer will soon be profoundly influenced by globalization and the introduction of ICTs.

Also, Canada represents an ideal viewpoint for this analysis. The Canadian healthcare system is quite popular abroad, and some of the principles and priorities that are central in the debate on the future of healthcare here are fundamental issues in the majority of healthcare systems. In addition, Canada's largest urban centres, in particular Toronto, are perfect settings for experimenting with the effects of globalization. Because of their extremely multicultural population, in fact, they can be considered as "mini-models" of the world, and lessons learned locally could be applied to the increasingly globalized environment of major research and teaching hospitals around the world (University Health Network 2001b).

A central responsibility held by policy-makers and opinion leaders in the health sector is to encourage and facilitate an open debate, based on unambiguously stated priorities and values, on the potential impact of this phenomenon. At the hospital level, this debate will represent an important opportunity to deepen the institutional understanding of the effects of globalization on health and healthcare systems. A better understanding would translate into increased authoritativeness and a stronger voice for academic health sciences centres at the negotiation table when discussing with other stakeholders the future of healthcare.

Many are the challenges generated by globalization, and equally numerous are the important questions that will have to be adequately answered as a result of such debate. Which perspective should we assume when analyzing the effects of globalization? Should we focus on the advantages and disadvantages for a specific institution, a province, a country, or for the world as a whole? How wide should our perspective be and how open the vision? Also, if becoming active players in the globalization game, influencing its rules and making the most of it, means abandoning protectionism in the healthcare sector, how much are we ready to give up, knowing that an open healthcare market would very likely mean the

end of Canadian medicare as we know it? At the hospital level, which fundamental principles should influence institutional strategic choices? For example, would "global impact" demand "global responsibility"? What types of implications would international and global catchment areas have? To whom would hospitals become accountable when their activities cross national borders and stretch without any conceivable limitation? Would it be possible to achieve a satisfactory balance between local and global priorities? Which values would be considered dominant when dealing with international patients? Theirs or ours? Should we treat only those international patients who can pay for their care? How would the Canada Health Act's principles apply when national boundaries fade away? Should we encourage health professionals to move to Canada in response to our human resources crisis if this results in a similar or worse crisis in their countries of origin? How could we avoid a situation where networks of "super-hospitals" become the well-funded, elitist healthcare system for the rich while local, public-health-oriented, diffuse networks of facilities become a second-class, underfunded healthcare system for the poor?

These questions, and many others, have to be put forward and openly discussed if we believe that globalization is not just a new, appealing name given to an old system but rather a true, historical shift. From the perspective of an academic health sciences centre, these questions also have to be answered keeping in mind that patients are the central piece in the mosaic and that the final goal is to develop a high-quality, equitable, accessible, caring, supportive, responsive, convenient, efficient, sustainable and accountable healthcare system, as described by the University Health Network's vision (2001b).

References

Adlung, R. and A. Carzaniga. 2001. "Health Services under the General Agreement on Trade and Services." *Bulletin of the World Health Organization* 79: 352–64.

Anonymous. 2002a. "Real Alternatives Information Network. What Is Globalization?" <http://www.web.net/rain/definition.htm>.

Anonymous. 2002b. *New Models for Investing in Innovation in Health*. Discussion paper for a Public Policy Forum roundtable held on August 27, 2002. Ottawa: Public Policy Forum.

Armstrong, P., H. Armstrong and C. Fuller. 2000. *Healthcare, Limited: The Privatization of Medicare*. Ottawa: Canadian Centre for Policy Alternatives.

Barlow, M. 2002. *Profit Is Not the Cure: A Call for Action on the Future of Healthcare in Canada*. Ottawa: Council of Canadians.

Berger, P. 2002. "Healthcare Is Our Right, Not Merely a Commodity." Electronic version downloaded from <www.thestar.ca> *Toronto Star*, January 10.

Berlinguer, G. 1999. "Globalization and Global Health." *International Journal of Health Services* 29: 579–95.

Bettcher, D.W., D. Yach and G.E. Guindon. 2000. "Global Trade and Health: Key Linkages and Future Challenges." *Bulletin of the World Health Organization* 78: 521–34.

Blustein, P. 2001. "Cause, Effect and the Wealth of Nations: David Dollar says Globalization is Good for Poor Countries. Dani Rodrik Strongly Disagrees." *Washington Post*, November 4: H01.

Canadian Health Services Research Foundation. 2002. *Globalization and Canada's Healthcare System*. Ottawa: Commission on the Future of Healthcare in Canada.

Canadian Medical Association. 2000. *General Agreement on Trade in Services (GATS) and the Canadian Healthcare System*. Submission to the Minister of International Trade. Ottawa: Canadian Medical Association.

Castells, M. 1998. *Information Technology, Globalization and Social Development*. Paper prepared for the UNRISD Conference on

Information Technologies and Social Development, Palais des Nations, Geneva, June 22–24.

Chanda, R. 2001. *Trade in Health Services*. Commission on Macroeconomics and Health Working Paper Series. Paper No. WG4: 5. Geneva: World Health Organization.

Delbruck, J. 1993. "Globalization of Law, Politics, and Markets: Implications for Domestic Law – A European Perspective." *Indiana Journal of Global Legal Studies* I: 9–36.

Deppe, H.U. 2002. *Re-Thinking the Basic Conditions of Healthcare under the Impact of Globalization*. Presented at the XII Congress of the International Association of Health Policy, Mallorca (Spain), May 21–24.

Eysenbach, G. and A.R. Jadad. 2001. "Evidence-Based Patient Choice and Consumer Health Informatics in the Internet Age." *Journal of Medical Internet Research* 3: e19 <http://www.jmir.org/2001/2/e19/>.

Feachem, R.G.A. 2001. "Globalization: From Rhetoric to Evidence." Editorial. *Bulletin of the World Health Organization* 79: 804.

Frenk, J. and O. Gomez-Dantes. 2002. "Globalization and the Challenges to Health Systems." *Health Affairs* 21: 160–65.

Garrett, L. 2000. *Betrayal of Trust: The Collapse of Global Public Health*. New York: Hyperion.

Glouberman, S. and B. Zimmerman. 2002. *Complicated and Complex Systems: What Would Successful Reform of Medicare Look Like?* Paper for the Commission on the Future of Healthcare in Canada. Unpublished document.

Healy, J. and M. McKee. 2002. "The Role and Function of Hospitals." In M. McKee and J. Healy, eds., *Hospitals in a Changing Europe*. 59–80. Philadelphia: Open University Press.

Held, D., A. McGrew, D. Goldblatt and J. Perraton. 1999. *Global Transformations: Politics, Economics, and Culture*. Stanford, CA: Stanford University Press.

Hurst, L. 2001. "U.S. Firm Calls Halt to Cancer Test in Canada." *Toronto Star*, August 11: A1.

Jadad, A.R. 1999. "Promoting Partnerships: Challenges for the Internet Age." *British Medical Journal* 319: 761–4 <http://bmj.com/cgi/content/full/319/7212/761>.

Jadad, A.R. 2001. "Quo Vadis Health System? … On Wishes, Magic, and the Promise of eHealth." Editorial. *Healthcare Information Management and Communications Canada* XV: 8 <http://hcccinc.qualitygroup.com/hcccinc2/pdf/Vol_XV_No_2/Vol_XV_No_2_1.pdf>.

Kolko, G. 1999. "Ravaging the Poor: The International Monetary Fund Indicted by Its Own Data." *International Journal of Health Services* 29: 51–7.

Lindert, P.H. and J.G. Williamson. 2001. *Does Globalization Make the World More Unequal?* Paper presented at the NBER Globalization in Historical Perspective Conference, Santa Barbara, California, May 3–6. Unpublished document.

Lutz, S. 2000. "e-Business Means Survival for Healthcare Organizations in 2010." *Managed Care Quarterly* 8: 1–8.

McKee, M. and J. Healy. 2002a. "The Significance of Hospitals: An Introduction." In M. McKee and J. Healy, eds., *Hospitals in a Changing Europe*, 3–13. Philadelphia: Open University Press.

McKee, M. and J. Healy. 2002b. "Future Hospitals." In M. McKee and J. Healy, eds., *Hospitals in a Changing Europe*, 281–84. Philadelphia: Open University Press.

Mendelson, M. and P. Divinsky. 2002. *Canada 2015: Globalization and the Future of Canada's Health and Healthcare*. Prepared for the Future of Global and Regional Integration Project, Institute of Intergovernmental Relations, Queen's University. Ottawa: Caledon Institute of Social Policy.

Navarro, V. 1999. "Health and Equity in the World in the Era of 'Globalization.'" *International Journal of Health Services* 29: 215–26.

Ostry, A.S. 2000. *The World Trade Organization and Publicly Funded Healthcare in Canada*. Unpublished paper.

Oxfam. 2002. *Rigged Rules and Double Standards: Trade, Globalisation, and the Fight against Poverty*. Make Trade Fair Campaign. Oxford, UK: Oxfam.

Payton, F.C. and M.J. Ginzberg. 2001. "Interorganizational Healthcare Systems Implementation: An Exploratory Study of Early Electronic Commerce Initiatives." *Healthcare Management Review* 26: 20–32.

Pollock, A.M. 2002. *The Impact of a Global Economy on Healthcare Delivery Systems*. Presented at the XII Congress of the International Association of Health Policy, Mallorca (Spain), May 21–24.

Pollock, A.M. and D. Price. 2000. "Rewriting the Regulations: How the World Trade Organization Could Accelerate Privatisation in Healthcare Systems." *The Lancet* 356: 1995–2000.

Price, D., A.M. Pollok and J. Shaoul. 1999. "How the World Trade Organization is Shaping Domestic Policies in Healthcare." *The Lancet* 354: 1889–92.

Roberts, V., J. Calhoun, R. Jones, F. Sun and M. Fottler. 2000. "Globalization of U.S. Healthcare Services: Assessment and Implementation." *Healthcare Management Review* 25: 24–35.

Rodrik, D. 2001. "Trading in Illusions." Electronic version downloaded from <www.foreignpolicy.com>. *Foreign Policy* (March–April).

Rodrik, D. 2002. "Globalization for Whom?" *Harvard Magazine* 104: 29.

Sitthi-amorn, C., R. Somrongthong and W.S. Janjaroen. 2001. "Globalization and Health Viewed from Three Parts of the World." *Bulletin of the World Health Organization* 79: 889–93.

United Nations Development Program. 1999. *Human Development Report: Globalization with a Human Face*. New York: UNDP.

University Health Network. 2001a. *Final Report of the Globalization and the eWorld Task Force*. Report to the Planning and Priorities Council. Toronto: UHN.

University Health Network. 2001b. *Strategic Directions 2011: Exemplary Patient Care and Global Impact*. Toronto: UHN.

Walt, G. 2000. *Globalization and Health*. <http://www.pha2000.org/issue-walt>.

Woodward, D.M, N. Drager, R. Beaglehole and D. Lipson. 2001. "Globalization and Health: A Framework for Analysis and Action." *Bulletin of the World Health Organization* 79: 875–81.

World Health Organization. 2002. *International Consultation on Assessment of Trade in Health Services and GATS: Research and Monitoring Priorities*. Executive Summary. Geneva: WHO.

Acknowledgments

The Canadian Institutes of Health Research, through a Doctoral Research Award, and a Premier's Research Excellence Award given to Dr. Jadad by the Ontario Ministry of Enterprise, Opportunity, and Innovation, supported in part Mr. Cortinois. Dr. Jadad was supported by a Canada Research Chair in eHealth Innovation, from the Canadian Institutes of Health Research, and by the Rose Family Chair in Supportive Care.