Canada 2015: Globalization and the Future of Canada's Health and Health Care

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Introduction

Canada's health care system is among the most egalitarian on the globe. Canada provides universal coverage, available to all on equal terms and conditions, with no payment at point-of-service for most in-hospital and physician services. In this regard, we are similar to many other developed countries, but we go one step further: We do not permit a 'second tier' of privately funded for-profit health care for essential services as an alternative to the publicly funded system.[1] Perhaps surprisingly, in a world increasingly dominated by market concepts, Canadians remain committed to the principle of a single, universal, publicly funded health care system, with no direct patient charges.[2] In fact, some see Canada's system of Medicare as so intrinsic to the nation that this program has become one of the mainsprings of our national identity.

Yet, despite Medicare's popularity and importance to Canada, it is a fragile institution.

Medicare as we have known it, is dependent upon 'the middle class bargain.' The great majority of Canadians, those who are neither poor nor especially affluent, are willing to forego their right to buy health care services on their own, in return for the government maintaining a very high quality health care system. If those with middle incomes feel this bargain is not being kept – if they lose faith in the quality of care that they themselves or their families will receive – then the political basis of Canada's egalitarian system will be destroyed. Today, volatile government funding, inadequate organization and poor resource use in some parts of the health care system, together with a perception of deteriorating quality fanned by widespread media coverage of the worst examples of inadequate servicing, are sorely testing this 'faith.'

Pressure points abound upon Canadians' expectation of universal access to health care without payment at the point of service. For example, pharmaceuticals and ambulatory care are rapidly increasing in importance over traditional overnight hospital-based interventions; indeed, drugs are the fastest growing cost in the total Canadian health care budget. There are rising demands for long-term care and home care services. Yet neither long-term care nor home care services are entrenched as part of the universal health care system. Pharmaceutical costs are usually covered only for the elderly and those on social assistance, and often with substantial co-payments. Individuals are therefore increasingly responsible for the fastest growing areas of expenditure in health care; many have full or partial coverage for these costs through an employment-based private insurance, but some – usually those least able – are left to pay the full cost on their own or, worse, go without the care they need.

The importance of these and other private payments for health care in Canada may be seen in the aggregate statistics. The public sector in Canada is responsible for a little more than 70 percent of the total health care budget; the private sector is responsible for a little less than 30 percent. This contrasts, for example, with the US where the public sector is responsible for somewhat less than half of health care spending. Yet in the UK and Sweden, the public sector is responsible for about 85 percent and the private sector for roughly 15 percent of the health system.[3] As so often happens in the health care debate, using the US as a point of comparison is misleading. While Canada prides itself on its public, universal health care system, it is not as comprehensively publicly funded as many other countries, and the long-term trend is for it to become less so through the more rapid growth of the 'private' part of Canada's health system.

Wherever there is a gap between public expectations and public provision, there is a potential market for private insurance, private investment and business. As noted, most Canadians now use private insurance to help meet some of their health care costs not covered by the public system. Private health insurance is held by roughly 80 percent of the population. Typically, private insurance is employment-based, with employers and employees sharing the costs. This means that it is rarely available to those who may need it most – the working poor with low earnings from marginal jobs with few benefits (such as supplementary health and dental care and private pensions), the part-time employed, the unemployed, those on social assistance and many pensioners. But just filling in the gaps in public coverage is small potatoes compared to the market that would emerge if public coverage were substantially reduced. A good deal of money could be made if governments opened up the Canadian health care market to the private sector. The lure of potential profits acts as a siren song for market-driven health care.

To resist this siren song will require governments that respond to the deficiencies in the current system by extending and modernizing public coverage, by improving the perceived quality of care, by finding ways to provide new technologies where these are efficacious, by decreasing and better organizing waiting lists and by implementing other measures that will improve Canadians' perceptions and experience of Medicare. Many of these strategies, however, cost money, and if the system is to remain publicly funded, the money must be paid through taxes. This is the essence of Canada's system: Governments must pay the whole bill for publicly covered health care from tax revenues. But does this run contrary to emerging economic realities? Over and above Canadians' normal reluctance to pay taxes, Canada may be losing some of its ability to set its own tax levels on an independent basis. The pressure of globaliza-tion, or at least North-Americanization, is to reduce taxes, not increase them.

Canada is a mid-sized nation in a giant-sized continent. We are a ribbon of population stretched out along many thousands of kilometers of border shared with our only geographic neighbour, the United States – the world's most dynamic and powerful economy backed by hegemonic military power. Canada has always traded extensively with the United States; however, in the last few decades, the level of trade with the United States has increased dramatically and now far outweighs interprovincial economic activity in almost every region of Canada. This expansion of trade has, of course, occurred inside the North American Trade Agreement (NAFTA), which has provided a legal framework for the continued intensification of the Canadian economy's seamless integration into the larger North American economy. The lines of economic connection are increasingly along a north-south axis, and not a Canada-wide axis.

Like it or not, Canada's Medicare system must operate within this context of economic and political realities. But international forces will affect Medicare not just through the pressure to reduce taxes. For example, the rate of development and the ownership structure for new health technologies will be determined largely by the global situation, and only very little by decisions within Canada. And the world also has a dominant ideological trend: Can Canada hold out forever with its own idiosyncratic (by world standards) health system if all around us other nations are moving towards more open health markets?

The purpose of this paper is to offer a perspective on this question by looking at the implications for Canada's health care system of

global political and economic structures in the future – and specifically in 2015. How could Canada's health care system be affected by 'how the world goes' in the next decades?

Necessarily this is a highly speculative question. The objective here is not to provide anything resembling a definitive answer. We cannot predict the future. It is unlikely that any of these futures will ever occur as described. More likely, the future will be quite ordinary; in other words, much like the present. We have therefore at times taken the 'poetic license' of deliberately exaggerating potential changes, or at least over-estimating the pace of technological and political change, so as to be able to envision clearly and forcefully the direction of change and its implications. In short, sometimes 2015 may have become 2025 or even blurred into 2050. All of this is meant to speculate on not so much what *will* be, as what *could* be, in an effort to stimulate consideration of our health system's relationship to global futures.

Rather than attempting to predict the path of globalization over the next decade and a half, we have posited four possible diverging future scenarios for global economic and political structures – Global Club, Shared Governance, Cyberwave and Regional Dominators – and look at the future of health and health care in Canada within each of these scenarios.[4]

Each of the scenarios has its key characteristics:

- **Global Club** – In this scenario, large regional trading blocks and global corporations work together towards ever-freer markets. The role of the Canadian state is diminished, as it must conform to the rules of its trade block, which is in turn dominated by the largest most powerful state in the block (the United States) and, even more so, by huge corporations. The Canadian government essentially becomes a 'policy taker' rather than a 'policy maker.' The Global Club is the scenario which represents the most 'straight line' extrapolation of world trends in the last few decades, at least until the events of 11 September 2001.

- **Shared Governance** – In this scenario, global organizations are reformed along democratic lines with adequate and fair representation of the interests of smaller states. Organizations such as the United Nations, the International Monetary Fund (IMF), the World Bank and the World Trade Organization (WTO) are democratized and increasingly responsive to concerns for global equity and environmental quality. The Canadian government is a policy maker in this scenario, and its independence and effectiveness may even be increased.

- **Cyberwave** – The Cyberwave scenario sees all governments, and even institutions such as corporations, increasingly overwhelmed by waves of technological innovation in sectors such as information technology, nano-technology, robotics and biotechnology. Huge companies such as Enron come and go in decades as their main products or business models become obsolete, whereas previously such corporations' life spans were measured in centuries. No sooner does government begin to figure out a response to existing technology, than a new technology comes along that is even more powerful. Essential powers of the state – such as the ability to tax and to regulate commerce – are vastly diminished. The Canadian government's policy making is simply not relevant in this scenario.

- **Regional Dominators** – In this scenario, old-fashioned geopolitics is back in the driver's seat. Within large geopolitical blocks dominated by the great powers, there is relatively free trade, but it exists at the mercy of military and nationalist priorities. The big, powerful states are very effective, but the small states must give way, without any effective representation on meaningful or democratic international bodies. In this scenario, the Canadian government is a policy taker, as in the Global Club scenario, but the state remains a relatively more important institution as the intermediary for geopolitical negotiation, administration of the regional block and likely militarization.

What would the Canadian health care system look like in each of these futures? Our crystal ball has seven facets: Seven key areas that define the dominant components of Canadian health care in each of the future scenarios:

- **The Focus of Health Care Policy:** What will be the guiding principles, values and focus for Canadian health care?

- **Delivery Systems:** What will be the delivery mechanisms for health care goods and services? How will the system operate?

- **Financing and Payment Structures:** How will the health care system be financed? Who will pay for what?

- **Quality of Health Care Services:** What will be the quality of health care services? What about the population health status of the community?

- **Technology and Health Care:** What new technologies will be developed, including information technology as well as clinical technologies, and how will they affect health care?

- **Research and Development:** What will be the focus of research and development? To whom will it be accountable? Who will control and define it? Whose interests will it serve?

- **Federal-Provincial Dynamics:** Who will have stewardship of the health care system? What will be the distribution of power and responsibility between the federal and provincial governments?

Under every scenario, there will be some common realities present for any health care system.

Budgetary Limitations/Financial Constraints:

Although the role and fiscal capacity of the public sector will be different in each of the scenarios, the public sector will always have to operate within a constrained budget. Increasing consumer demand, the demographic shift over the next 15 years, the escalating costs of medical technologies (including pharmaceuticals), the demands of health care professionals and limited financial resources are pressures common to all four scenarios. However, the fiscal room available to deal with these issues and the question of 'who pays and who benefits' will differ among the scenarios.

Perhaps surprisingly to some, growth in health expenditures due to the aging of the population is *not* an overwhelming theme of the future scenarios. There will be some cost pressure due to population aging, but this pressure will be moderate. Our aging population is not a source of extraordinary and unsustainable demand as has sometimes been portrayed.[5]

Expenditures on seniors' health care are more closely related to decisions about the type and style of health care to be provided, rather than to the fact of aging *per se*. A system wherein every person on his or her death bed is rushed to hospital and put on all the latest life support devices, to prolong the death process by a few weeks, will be more expensive than a system providing palliative care in the home. A country that forces every dying person to endure many weeks of pain and semiconsciousness will have a more expensive health system than a country that assists the death process at the request of patients. Aging, as a cost pressure, is not much unlike the other cost pressures on the system: The cost of technology and pharmaceuticals will, for example, critically depend upon such factors as the way capital is raised and the rules for ownership of intellectual pro-perty, as we discuss in later parts of this paper. The aging of the population will likely have a substantial impact on the nature of health services people require, shifting demand towards research and treatment of age-related health problems, but the cost of meeting that demand will depend upon how it is met.

In short, all of these cost pressures, although real enough, are not exogenous variables thrown into the health system as a passive receptor of external processes. Rather, the extent and nature of the cost pressures will also depend critically upon the design and delivery of health care services.

Information Technology, including 'Digital Delivery'

Today we are at the very dawn of the information technology revolution in health care, including what we are calling 'digital delivery.' The ability instantaneously to transport unimaginably huge amounts of information, for a diminishingly small cost, has the potential to revolutionize the delivery of health services, just as it does so many other aspects of our lives.

The development and penetration of information technologies in daily life will therefore be common to all scenarios, although the extent of that penetration and the degree of innovation possible will vary among scenarios. In all scenarios, we assume that 'fiber-optic-to-the-home' broadband transmission will be ubiquitous so that, for example, two-way transmission of live images from and to the home will become as routine as a long distance telephone call. We assume that the technical capacity will exist, although it may not be realized, for:

- Accessibility to health care information via the telephone and Internet, some of it intermediated by services to authenticate the information.
- Access to primary care physicians not only via 24/7 telephone service, but also via the Internet, including live image transmission.
- Internet-based interactive diagnosis and triage services.
- Interconnectivity between all health care providers.
- Remote performance of medical interventions, especially surgery and imaging diagnostics.
- The digitalization of all health care records and their storage in a single system so that these are available to all care providers as well as to individuals wishing to access their own health care records.

Medical Technologies

Medical research and technologies will continue to develop and intensify, although the rate of development and the diffusion of new technologies will differ from scenario to scenario. These will enable most individuals to live much longer with chronic conditions – in fact, it will convert many currently terminal con-ditions into chronic conditions – and provide innovative treatments and technologies that can improve the quality of life.

More prosaically, some current trends will continue in all scenarios, to a greater or lesser extent, such as the increasing use of ambulatory and drug-based interventions, and the development of new drugs for a widening definition of medical conditions (for example, the growth in use of antidepressives among 'ordinary' people who hitherto have been functioning adequately, if not optimally). Drugs making use of gene therapy, or customizing for genetic characteristics, will be developed and, while effective, will also be quite costly. However, the extent of substitution of overnight residential-based hospital care by ambulatory and in-home care, as well as the costs and the ranges of new drugs developed, will differ among scenarios.

But beyond the usual development and extension of medical technology, in all scenarios we assume there will be new technologies developed that will have profound implications for humanity as we have known it, perhaps as deep as the change from pre-agricultural hunter-gatherer societies to modern industrial societies. Indeed, the moral and social issues raised by these technologies are vastly more challenging than the issues surrounding information technology. Principally, new technologies will be developed in the next several decades that will substantially delay aging, preserve health and eventually extend life. In addition, gene manipulation will at some point allow parents not only to avoid gene-based diseases in their children; they also may be enabled to design their babies to order. These technologies will be extremely expensive and simply too costly to contemplate being made available on any universal basis. Who will have access to these technologies and how will their use be regulated, if at all?

Although it will likely be closer to 2050 than 2015 for many of these possibilities to be realized, some foretastes of this future doubtless will begin to present themselves soon, so we believe it is useful in this exercise to include them in our scenarios. The cost of these technologies and the cost of supporting research and development will be a significant pressure in all scenarios. What will differ is how the various scenarios finance and distribute these technologies and how they address the moral and social challenges noted above.

Threat of Pandemics

In today's world of global jet travel and the transportation of vast quantities of goods from all corners of the globe, not only is 'no man an island,' no *island* is an island, either. There is no longer any capacity to isolate an ecology of one part of the globe from any other. This means that a disease, developing anywhere in the world, will soon be found everywhere. Any lethal disease will eventually 'burn itself out' among its endemic population, but if its speed of transmission is greater than the speed at which it consumes its host, the result will be a widening circle of disease. This formula has been tragically proven many times in human history, seemingly whenever there are large or new movements of populations – most recently in 1918 when the so-called Spanish Flu killed approximately one percent of the global population.

Although we were until recently increasingly confident of our ability to master the world of micro-predators, it has become apparent with the emergence of AIDS and drug-resistant tuberculosis, and lack of progress in many other infectious diseases, that the age of pandemics has not necessarily passed. Given the mobility of populations, and indeed the intensification of mobility with the extension of global trade, we assume in all scenarios that pandemics will continue to be a very real and ever present threat to populations everywhere.[6] Medical research and health care systems will continually be confronted with treatment-resistant new diseases or new versions of old diseases. This danger will be present in all scenarios, but the scenarios differ in their response, reflecting the extent to which global health is a priority and the extent to which health care systems of the various scenarios contend with these threats. Just to dramatize the different ways that the health system may cope with the threat of pandemics, we assume that a lethal global flu epidemic emerges early in the new century, although the extent of its effects depends upon the scenario.

Global Club: "Health Care is a Business"

The Story

With the widespread introduction of private hospitals in Alberta and BC, large United States health providers invoked 'national treatment' provisions in trade agreements and began an aggressive penetration into Canada. Through predatory pricing and intense, expensive advertising campaigns, they were able to overcome initial public opposition and capture a large portion of the 'market.' Eventually, similar arrangements spread to other western provinces and into the east.

By the end of the decade, new trade agreements preventing 'restraint of trade' were reluctantly agreed to by Canada; the now-ubiquitous multi-national health care providers used this means to create a fully recognized, parallel private layer of health care provision.

In the meantime, Canadian governments were finding it harder and harder to maintain tax differentials between Canada and the United States. Demands for a competitive tax structure in the now completely integrated North American economy intensified beyond the point of resistance, especially since the 'dollarization'[7] of the Canadian economy. Pressured by competing demands for tax reductions, on the one hand, and improving health care services, on the other, governments let the publicly funded sector deteriorate while relying on the newly emerged private sector to pick up the slack.

With a pervasive 'free market' ethos throughout the world, dominating world media, and a steady barrage of advertising and PR campaigning by United States multi-national health providers operating in Canada, the Canadian middle class became convinced of the superiority of private sector health care and gradually abandoned the public system. By 2015, in the western provinces and Ontario, the public system was being used mainly by the poor; most of those with middle incomes and virtually all of those with upper incomes used private services. By 2015, the private sector had developed integrated North American-wide delivery systems, technology, purchasing and equipment. The call centre and accounting department serving a hospital in, for example, Calgary, could be anywhere in North America, indeed, anywhere in the world. The picture was not homogeneous across the country; the Atlantic provinces and Quebec still maintained a much greater reliance on the publicly funded system – although even in these provinces, the middle-income majority by 2015 was beginning to increase its use of private services.

The federal role in health care has been greatly diminished. There are renewed block transfers to the provinces but the conditions on these transfers have been effectively eliminated, so that the federal role is now limited to ensuring that all citizens have access to at least basic health care services. Nevertheless, both federal and provincial governments, with the urging of the corporate sector, support measures to improve the health of the population. Together, they find ways to cooperate to ensure that at least minimum standards of health care services are available, and measures are in place for public health services, such as preventing the spread of infectious diseases. Measures to protect the health of the population from epidemics, food contamination and similar threats are also strengthened by multilateral North American agreements. Governments carry on 'lifestyle'-related population health campaigns, and assist local groups in their liability claims against those creating and distributing products that have produced adverse health effects. These class action liability claims are having some impact on the behaviour of a minority of corporations undertaking activities directly dangerous to health.

In general, the corporate sector recognizes that a healthy economy requires a healthy population. Business supports government's attempt to maintain a basic health care system for the poor and also strongly supports measures to improve population health, but at the same time advocates 'consumer choice' for those who can afford to pay for private care. In the global club world, other actors in society, such as organized labour and citizen advocacy groups, have little clout and virtually no impact on government decision-making.

Focus of Health Policy

Canada is a member of the Americas Global Club (AGC). Canada has some voice within this political formation and a little room to maneuver within the policy and regulatory framework of the AGC. Canada therefore conforms to the principles, regulations and requirements of the AGC, but continues to exercise a mildly distinctive Canadian voice with respect to health policy and the provision of health care goods and services. The Americas Free Trade Agreement (AFTA) imposes tough rules preventing governments throughout the Americas from protecting almost any sector of their economy from market-competitive forces, requiring 'national treatment' of all firms and securing investment rights for capital.

By 2015, the overall focus of health policy in Canada has become twofold: first, ensuring that individuals have some form of access – albeit not equal access – to the health care goods and services they require; and second, undertaking community health measures as needed to protect and support the health of the population. For most people in middle- and upper-income groups, health care services are now purchased from private health care providers, with group or private insurance supplementing public health insurance.

The increased reliance upon private providers fits within the deeper paradigm of the Americas Global Club according to which all things should be part of the market mechanism: Health care is a market good that needs to be 'commodified' as part of a well-functioning national economy, according to the AGC ethos and according to the rules and philosophy governing the Americas Free Trade Agreement.

In some eastern provinces, private sector services are less pervasive. In Quebec, the sovereigntist movement has added the restoration of 'universal Medicare as it used to exist' to its list of promises for an independent Quebec (not explaining how it by itself would be powerful enough to exclude United States trade pressure and overcome AFTA rulings, when Canada as a whole could not). Middle-class medical bankruptcies are still virtually unknown in Canada, unlike the United States, since a basic level of health care is still available free of charge from the public sector, but it is not uncommon for people to spend large amounts of money to obtain the 'latest' treatment from a private sector provider. In short, universal health care (or the lack of it) is still a political issue in Canada and, indeed, is an important feature that distinguishes the position of political parties. But the slogans about universal health care are becoming somewhat puzzling to the younger generation who have had only a hazy experience of the 'old days of universal Medicare.' Soon, universal Medicare will only be a memory preserved in books.

While there are periodic bouts of political effort to improve the quality and provision of public sector health care, the public sector remains unable to provide services with the 'bells and whistles' of the private sector. The public health care system cannot afford the luxurious facilities, some of the most current and flashy medical technologies (much of which remains unproven from a cost-effectiveness perspective), and a full range of optional electronic delivery systems. The gap just seems always to widen between public health services and what is perceived to be available to those who have the financial resources to access the private sector. The public sector's chronic lack of fiscal capacity due to tax reductions, ostensibly needed to maintain Canada's 'competitive position,' continues to entrench and exacerbate the divergence.

Within the health sector, there is one area where there is greater effort than ever before: recognizing and dealing with possible threats to the overall health of the population, especially when these are seen as having potential economic consequences. Given the interconnected, global configuration of the Americas Global Club, there is a determined focus on tackling global health issues that could affect the health of the members of the club, especially after the scare of the flu epidemic in the first decade of the century. Prevention programs to contain and limit global pandemics are well developed. There are also strict rules about the transport of foods and animals around the globe, following rigorous international rules related to food and drug safety, processing and packaging. Class action liability suits against products with adverse health effects have become common, and are sometimes a tactic used by governments to recapture public health costs.

Within the AGC, increased legal and political integration (through, for example, the creation of 'joint' commissions for administrative purposes) has necessarily followed economic integration, creating a solid body of international standards and protocols for a wide range of health care goods and services. There is a well accepted AGC medical protocol standards 'bible.' There are standards for laboratory testing; ethical standards for all health care professionals; pharmaceutical clinical trial and approval procedures and standards; standards for the form, medium, storage and access to digital electronic records, including imaging and other diagnostics; and an international review committee for health care professionals' credentials, so that professional labour is mobile among AGC countries.

The private sector's advertising emphasis on purported high quality and the newest treatments create a huge demand for 'star' physicians who are viewed as 'top' in their specialty or on the cutting edge of practice. At

the same time, the new mobility provisions and recognition of credentials allows doctors and other health professionals from Brazil and Mexico much more freedom to emigrate to Canada or the US. The overall result is higher compensation to 'top' physicians, but reducing compensation pressure from the mass of health professionals who are not especially distinguished. Brazil, Mexico and the Caribbean are the sources of most new nursing staff for both Canada and the United States, as domestically trained nurses have all but disappeared.

Delivery systems

Humanacana (a division of a major US health care provider) is among the largest health care providers in Canada, with its expansive network of services throughout western Canada and Ontario. Since winning several important restraint of trade victories in trade panels, Humanacana no longer makes any pretence of accepting patients who have only public insurance in its facilities; the exception is the occasional high-profile case accepted when there are perceived advantages; namely, positive media coverage demonstrating the superiority of Humanacana over the public sector.

Most Humanacana patients are registered as part of its Integrated Health Maintenance Organization (IHMO), and paid for either through work-based group insurance or through expensive private enrollment. The public sector pays fees to Humanacana for all services that are covered by public insurance, while private insurance fees are considered a 'top up' (one of the consequences of the 'restraint of trade' rulings) to pay for the purported extras.

There are also some Canadian for-profit International Health Management Organizations (IHMOs), including a Quebec-based IHMO supported by the province's leading financial institution – *Caisse Nationale*. The largest Canadian IHMO is centered on the now privately owned and operated Toronto University Hospitals Network.[8]

In most Canadian cities, there are few public sector hospitals: Approximately 80 percent of all public beds have been closed, sold or privatized. For example, the only purely public teaching hospital remaining in downtown Toronto is St. Michael's; its physical plant and general amenities are noticeably more run down than comparable private sector hospitals. St. Michael's remains the sole recourse for most types of complex tertiary care in the Toronto area for those not enrolled in a private plan. This is the typical situation in most other large Canadian cities.

Humanacana and similar private sector organizations are ruthlessly efficient: Average lengths of stay have been reduced and more than 80 percent of all treatments are performed on an out-patient basis. Electronic delivery networks transfer all health-related information, and some forms of diagnoses,[9] home testing and visits (particularly follow-up visits) also are conducted through electronic delivery channels directly to the home.

The objective of private IHMOs is to maximize return to shareholders by delivering the least expensive treatment in the most cost-effective way, consistent with maintaining and increasing their revenue stream. Where appropriate, qualified nurses provide services, and a growing number of services are provided through each IHMO's own home care system. Private sector physicians are all paid on the basis of salary plus bonuses for 'performance' and usually have accompanying stock options; physicians must,

however, adhere rigidly to practice algorithms and their treatment choices are always under active review, with expensive procedures requiring prior authorization. Similar, but not so rigorous, review processes are now also being employed in the public sector.

While each procedure in the private sector IHMO is *in itself* efficient, and the public sector is also very efficient, the system as a whole is not. There is tremendous duplication, as capacity for most interventions must be repeated by each IHMO and by the public sector as well. High-end interventions, such as organ transplants, which were previously done in only one hospital in a whole region or even shared among a number of provinces, are now performed in many hospitals, although this may include specialized facilities in the US. All who can scrape up the capital enthusiastically purchase the latest diagnostic machine, often to be abandoned a few years down the road when found to be uneconomic or ineffective. Most importantly, the capacity to provide instant service with no waiting lists means that there must always be 'excess,' or unused, capacity in all but the peak periods of highest demand. The private sector's complex system of patient charges and fees must be administered, bills must be collected and shareholders must be rewarded as well. This means that a growing portion of each health care dollar is required to pay for administration and shareholder returns – adding about 10 percent to the cost of the system. Nevertheless, the availability of attractive, empty beds is regarded by the media as another sign of the superiority of the private system over the old universal public system.

Governments continue to be seen in Canada as the ultimate 'steward' of the health care system, but the public sector is no longer viewed as the sole deliverer or funder of health care services. In other words, it is up to governments to ensure that everyone has access to *some* care, although care is obviously no longer available on equal terms and conditions to all. While government tries to define and monitor standards of treatment, the private sector resists this level of accountability; IHMOs define their own protocols and standards, and have internal monitoring processes.

Financing and payment structures

Each provincial government pays a basic age-sex adjusted fee for each 'included' service on behalf of its residents, regardless of whether the service is provided through a public or private provider. Complex regulations have been developed to try and make sure that the private sector providers do not just take the easiest, 'healthiest' and least expensive cases/patients. In practice, most of the very complex higher risk cases still end up in public sector institutions.

Health care professionals often receive dual sources of income, from a combination of both the public and private sectors. This leads to common perceptions of favoritism for private sector patients. It also adds to the waiting times in the public sector.

Overall, public sector health care expenditures are very low, at about 4 percent of GDP. However, private health care spending has skyrocketed, to approximately 13 percent of total GDP. Consequently, total health care expenditures are now roughly 17 percent of the economy and have become a serious economic concern. Canada now has the second highest health care costs as a percentage of GDP in the world, with only the United States surpassing Canada at a stunning 22 percent of GDP.

Quality of health care

The bulk of the population enjoys a solid level of good health. The health status of Canadians continues to rank within the top five of industrialized nations, principally because Canada remains a prosperous nation with ample food, clothing and shelter for almost all its citizens, high levels of education, high employment rates and a relatively well-maintained infrastructure.

However, the perceived quality of health services varies substantially between the private and public systems. The general perception is that the public sector is for the poor and the vulnerable; particularly in the big cities where more than three-quarters of the nation's population lives. There is, for example, tremendous variation in hospital amenities: Many private sector hospitals are luxurious and some approach the standards of five-star commercial hotels, while public sector hospitals are drab, basic and offer only minimal levels of privacy and comfort.

Despite all the luxury and the added cost, and despite access to the latest technology, peer-reviewed scientific studies continue to show that there is no quantifiable difference in health outcomes between the public and private sectors, with age-sex and risk adjustments factored in. This could be difficult to explain to private sector clients/patients, but because the public sector ends up with more of the most complex and expensive cases, the public sector's outcomes on an unadjusted basis often look worse, costs per case can appear more expensive, and there are often longer average lengths of stay. There is, therefore, ample room in the public mind for confusion. Private sector health care organizations are not reluctant to take advantage of this confusion to advertise the superiority of private care.

Technology and health care

While information technology infrastructure is more than sufficient to permit immediate access to all health care records and information, as well as the delivery of many services, limitations are imposed because of the proprietary nature of health records and test results from the private sector. Very simply, the private sector IHMOs and other institutions see keeping patient's records for themselves as one of the ways to maintain their competitive edge, and they have prevented government from requiring these records to be pooled in a comprehensive database. Under the AFTA, such mandatory pooling is considered expropriation of private property and prohibitory levels of compensation would be required. Consequently, it is not possible to gain the full benefit of information technology for health care services.

Nevertheless, there are many important and useful developments. Within large IHMOs, patient health records are transferable between all providers. Health care information – disease state information, basic diagnosis and treatment, and triage information – is available through the telephone and through the Internet, especially since most families now have fiber-optic-to-the-home broadband connectivity with high-quality minicams coming as standard equipment in computer monitors. In malls, sophisticated kiosks serve as diagnostic machines (the next generation of ATMs) at strategic locations.

As all nations agree to enforce intellectual property rights, new technologies are expensive and potentially lucrative. For the first time, surgical techniques are patented and protected under expanded intellectual property definitions first developed to protect e-commerce processes. Health technologies consequently attract significant amounts of capital. The new technologies that emerge, however, are difficult

to access, even for those enrolled in premier IHMO plans, as they must be priced to repay the risk premium on capital.

Some technological 'miracles' are appearing, although the closest most people will get to these marvels is the image on their TV-Internet set. Nano-technology is beginning to be utilized in experimental circumstances. Artificial organs are being used as transitional devices prior to transplants – which are themselves becoming much more common as xeno-transplants from genetically modified animals and organ tissues grown from stem cells become available. Experiments in radical life extension therapies – for example, restoring youthfulness at the cellular level – are being attempted on animals and are rumoured to have been undertaken with success on some very old, extraordinarily wealthy human beings in secretive clinics. The full decode of the human genome has become the property of a few giant corporations. Although cure and prevention of some important genetically-linked diseases is now possible, the costs are still prohibitive for all but an elite few.

Research and development

There is a significant high-risk capital market for research, and charities and philanthropic foundations continue to provide substantial sums for health research. But government research funds have disappeared. Health corporations fund research and development for their proprietary use, especially techniques and other 'soft' products that can give them a competitive advantage. Global blocks encourage the establishment of 'research cartels' in the form of international research institutes, aligned with global pharmaceutical and biotechnology companies. These international research institutes have supplanted academic institutions as the main sites of medical research. Canada's research is primarily a 'feeder' of specialized niche research organized for the whole Americas Global Club.

Economically fruitful or potentially lucrative research, such as genetic research, is highly supported. Health issues that affect only a limited number of people or which do not promise economic payoffs are disregarded, unless there is a foundation or charity willing to pay special attention to these health issues. Consequently, the entire range of interrelated social and health issues, such as family violence and its effects on health, receives no funding for research.

Federal-provincial dynamics

Despite much heated rhetoric, the federal government had found itself unable to reverse the development of private hospitals in Alberta, and these quickly spread to BC soon after the turn of the century. The federal government was for some years reasonably effective in containing the extent to which the private hospitals could bill over and above provincial Medicare rates. However, with a long and growing list of 'extras,' the private hospitals in those provinces were within a decade providing a *de facto* second tier of private Medicare with enhanced amenities and reduced waiting time, subsidized by the provinces' paying the 'basic' rate for all procedures.

Even with the restoration of previous federal funding and the development of a reasonable escalation clause for the federal funds, Ottawa did not feel it had either the political or the legal capacity to do anything much more than 'jawbone' about the privatization of hospital care and the development of a second tier – especially when the re-election of the privatizing government in Alberta showed that discontent with the policy of expanding private hospitals, while

substantial, was not substantial enough to deny the provincial government a solid majority.

With aggressive advertising, financed 'research' and other tools being used to promote the idea of private for-profit ownership of hospitals, the population in the western provinces gradually became less opposed to the idea of private hospitals. The election of new governments in Manitoba and Saskatchewan saw private hospitals introduced in those provinces, for the first time by means of privatization of previous non-profit hospitals.

All of this was attended by continuing federal-provincial friction, but the federal government never regained the moral and political clout it had prior to the major cuts of the mid-1990s in health transfers to the provinces. Effectively, Ottawa became unable to protect the universal nature of Medicare in Canada. Gradually, the federal government's central concern in health care delivery began to shift – away from ensuring that all Canadians had equal access to health care services based only on health needs, to ensuring that all Canadians had *some* access regardless of their financial status. By 2010, the federal government was browbeating the provinces about ensuring that everyone had access to a basic level of health care services, and the provinces were reasonably amenable to this reinterpretation of the federal objective, resulting in a decrease in friction in this regard.

One area of health policy in which the federal government maintained a very significant role was the handling of trade issues, especially the negotiation of trade agreements and the handling of trade disputes. Ottawa's role in making these treaties, despite provincial jurisdiction for health care, remains a continuing source of tension in the federation. Alberta is in a permanent state of indignation over its lack of a vote at the trade talks, and is attempting to set up 'mini-trade pacts' with its neighbouring states. However, the federal government did ask for and obtain legislative endorsement by all provinces of the Americas Free Trade Agreement (since not doing so would have lead to substantial penalties).

The original AFTA agreement provided for an exemption for 'government programs' and other language that the government of the day argued would protect Canadian-style Medicare. However, the negotiations were multilateral and extremely complex, including other powerful nations such as Brazil, Chile and Argentina. Since both Canada and the US were anxious to 'open up' these economies, Canada found itself unable to insist too strongly on protecting its own unique interests. Consequently, the overall statement of objectives for the AFTA contained language about the purpose being to expand and enhance 'free markets,' and other sections repeated similar language. Over time, trade panels came increasingly to interpret the agreement in light of these general clauses, and in a landmark ruling in 2010, the Canadian government lost its defense of the policy of denying a full public payment to a private hospital, where the private hospital provides an insured person with insured services. Consequently, the 'market' had become fully open.

Offsetting somewhat friction with respect to Medicare, protection of general population health remained an area marked by excellent continuing federal-provincial cooperation.

Shared Governance: "Improving everyone's health is everyone's responsibility."

The Story

After long and difficult negotiations, spurred on by the collapse of the initial World

Trade Organization due mainly to US/European trade disputes, and continuing instability in world financial markets, a number of democratic international organizations were developed for the promotion of freer trade within the context of a body of rules meant to protect the cultural and national interests of all nations, large or small, including the promotion of labour standards, the improvement of the environment, and the taxation and regulation of international movement of capital.

The new international rules have allowed Canada to protect its health sector as a largely non-market area of activity. With growing prosperity and decreasing inequality of income throughout the world, there is more stress on resolving long standing social and economic problems. In the United States, truly universal health care for children is finally introduced in 2010 and substantial improvements made in Medicare for the poor and the elderly. By the following decade, most states in the United States have some form of universal Medicare in place. The introduction of Medicare in the United States as a complement to the private system ends the 'ideological assault' on Medicare in Canada. At the same time, relatively higher tax levels are required in the United States to pay for the new systems, lessening somewhat the pressure on Canada to cut taxes.

Due to overwhelming public demand, a new federal-provincial consensus is achieved in Canada to enhance universal Medicare and ensure that health services meet the needs of 'average' Canadians. A federal-provincial agreement is struck to include long-term care and home care in the Medicare system. A federal-provincial financing formula is designed that includes increased and indexed federal transfer payments and third party enforcement of new standards. Pharmaceuticals are also incorporated into the Medicare system by the end of the decade, with both federal and provincial support. Basic dentistry services, focussed on preventive care, are added to national Medicare shortly thereafter.

All provinces develop regionalization models; most health care is the responsibility of new regional health authorities and, under their auspices, primary care has been reformed. Many primary care physicians are organized into group practices that service rostered or enrolled populations, and are paid on an age/sex/risk-adjusted capitation formula, with bonuses based upon specific outcome metrics.

In nearly all regional health authorities, senior staff (usually from the nursing profession) have been designated as case managers, assisting patients to maneuver through the health system, providing effective follow-through and managing the distribution of information. The result is a dramatic improvement in patient satisfaction and a substantial improvement in the effective utilization of resources. An unexpected benefit is improvement in health services organization, as case managers work systematically to remove barriers to coordination of services. The nursing profession overall is gaining higher status as the role of the nurse as a professional within both hospital and non-hospital settings is upgraded and nurses are better paid.

Regional health authorities, physicians and allied professions are now taking a much stronger interest in improving health status in the population. Through cooperative initiatives, innovative programs to address lifestyle issues and attempts to deal with socioeconomic factors are implemented. Driving accidents, suicides, family violence, crime, workplace stress and safety are all seen as valid areas for health authorities to become active, and many regional health authorities are attempting to find new and creative approaches to these problems.

By 2015, quality-adjusted years of life have substantially increased for all groups in Canada.

Focus of health policy

Canadian public policy has significant autonomy in the Shared Governance world of 2015. Canadians remain committed to universal coverage and full accessibility on equal terms and conditions for everyone, without regard to income. Indeed, the 'universal model' has been extended to long-term care, pharmaceuticals and preventive dentistry. The Canadian model – equal treatment for everyone without any charges at the point of service – is often held up as the 'ideal' in international discussions of health care.

Health policy in the Shared Governance future is characterized by a fundamental commitment to improving population health status. Health care and the socioeconomic determinants of a population's health status are both considered critical components of prosperity and public policy. Social and health policy are integrated to ensure the most effective and efficient use of resources to improve health status. Housing, education, nutrition and employment are linked with health care policy, program development and implementation.

The public sector as a whole is in good fiscal shape, though demand for public funds still outstrips its availability, as always. Financial constraints on the public sector remain as real as ever in 2015. The 'what's covered by Medicare' debate has all but died out, as it is increasingly understood that almost all effective interventions are sometimes justified in some circumstances. However, there are a few exceedingly expensive health interventions for which explicit rules for rationing have had to be introduced. Some interventions at the very highest end are just too expensive for the public sector (or 99.9 percent of the private sector) to provide, especially new treatments for chronic conditions that cost $200,000-$300,000 a year. These difficult issues of resource allocation are done through 'consensual rationing.' Allocation decisions are based upon agreement among key stakeholders: health care administrators, health care professionals, health care and social policy officials, media, consumers and community representatives. This process makes living with difficult decisions more palatable. There are, however, instances where 'consensual rationing' leads to living with less than the most rational options, as well as temporary decision making paralysis.

For the a tiny percentage of the most wealthy Canadians, the United States health system remains a 'safety valve.' Canadians who are not willing to accept the standards and conditions of Canada's system, or who want to access high end services not available here, cross the border and pay directly for health care services; but this group remains less than one percent of the population.

There are also substantial advances in international health, dealing both with 'medical' health threats and with the social and economic conditions that lead to low life expectancies and poor quality of life in the third world. The Asian flu epidemic in the first decade of the century is dealt with effectively, but it marks a turning point in consciousness around the world. People in the more developed countries now realize that their health and safety cannot be separated from those in the rest of the globe.

There is increasingly internationalization of health care standards in the areas of food safety, testing procedures, clinical treatment protocols, drug testing and safety. Canada is an important advocate of these international dev-elopments

and is an active and respected member of the international organizations.

Delivery systems: organization

Regional authorities, responsible for the organization and delivery of integrated health and social care programs, are the dominant planning and funding bodies. Most health professionals are on salary with the regional health authorities. Regional integrated authorities are responsible for providing and managing a network of health care and social services. Disease prevention and health promotion programs are linked with social development initiatives. Prevention and promotion are built into primary, acute, chronic/palliative, long-term and home care services in a seamless configuration.

Case management is an important feature of the successful delivery and management of the integrated networks. Senior nurses are primarily responsible for case management, although other disciplines are also sometimes designated case managers. Better case management has dramatically improved satisfaction with the health care system and also has increased the efficiency with which patients are able to use the system.

Financing and payment structures

Provincial governments fund regional health authorities, which in turn provide funding for functions in their area. Most regional authorities are funded based on formulas that have been developed to reflect population mix and socioeconomic factors. Regional authorities are usually integrated health and social service providers. Staff, including health care professionals, are typically salaried or remunerated on a capitation basis. There is a good deal of experimentation and innovation in financing methods by various regional authorities in different provinces. Provinces, regional authorities, research groups and advocacy groups maintain a lively dialogue about the pros and cons of various funding arrangements. Through learn-ing about what works in other areas, and the ability to carry out experiments as a result of decentralization, there is constant improve-ment and refinement of financing formulas and budgeting practices. Evidence is routinely used as the basis for this policy making.

Health care expenditures are well under control, as they are managed through a single payer. Total health care costs are about 11 percent of GDP, at the higher end of the OECD average, and up about 1.5 percentage points from the turn of the century – but far below the figure in the United States. The increase in spending as a percentage of GDP reflects the prioritization of health care expenditures through the political system (i.e., people want politicians to spend more on the health system) as well as some upward pressure due to an increased number of persons in their last years of life. There has also been upward pressure on the public share of health spending as the private share has shrunk considerably due to the introduction of improved home care and, most importantly, a public pharmaceutical program. Canada is now at the Swedish and UK levels of public spending as a percent of total health spending; about 85 percent.

Quality of health care services

The integration of health care and social services through health networks, with case management, provides exceptional quality health care. These networks provide 24/7 care with effective triage through a variety of channels, reducing demand for more expensive and less effective delivery mechanisms such as emer-

gency rooms. Walk-in clinics, where patients establish no lasting relationship with the clinic, have almost disappeared. Case management has improved the care of patients, reduced confusion, increased patient satisfaction with the system and improved the appropriate delivery of care. Layered use of professionals, with fuller use of nurse practitioners, has allowed physicians to take more time with their patients, especially the growing elderly caseload. Job satisfaction among health professionals also has improved – although, of course, everyone still wants higher pay.

Regional authorities implement rigorous 'report cards' that assess the performance of their health services and provide good information for both patients and providers. This evaluation includes customer satisfaction, medical/clinical outcomes, population health status indicators and assessments by professional evaluation teams.

Technology and health care

The health system's information technology infrastructure allows for access to comprehensive health care information and services, for both patients and providers, through a wide variety of venues. Patient health records are transferable between all providers. Individuals are able to access their own health records and authorize access to these records. Health care information on diseases, rudimentary diagnosis and treatment, and triage information is available from a variety of sources: telephone combined with Internet-based sites, sophisticated diagnostic machines (the next generation of ATMs) and terminals at strategic locations such as clinics, libraries, shopping centres, schools and businesses. At the 'consumer' level, Canada Health Networks has become recognized as the brand for reliable and up-to-date health information, allowing Canadians easily to sort the wheat from the chaff in the huge amount of information available through the internet/telephone. Indeed, Canada Health Networks is increasingly used worldwide at the consumer level as a dependable source for information.

As in the Global Club scenario, there are strong enforcement rules for intellectual property rights; however, in the Shared Governance world there are limitations imposed both voluntarily and legally on the extent to which profits can be made from valuable new interventions. Pharmaceutical companies make good returns on capital, but not at the levels of the previous century. There has been an important shift towards mixed public-private stewardship initiatives; pharmaceutical companies, for example, work with the public sector and research scientists in programs that address social priorities as well as the opportunity for profits. Consequently, many new technologies are being developed for less lucrative conditions such as malaria, leprosy, tuberculosis, yellow fever and other 'third world' diseases. This work is supported by international institutions – with strong backing from the developed countries, as they have found that these diseases are no longer staying within their traditional boundaries, so that even North American's safety will depend upon addressing 'tropical' diseases at their source.

Leading-edge developments are occurring in areas such as genetics, nano-technology, xeno-transplants and implantable devices; this work is taking place mainly in the big labs in major universities and research centres. The fully decoded human genome is public knowledge, available to anyone on the Internet, and is being used for disease treatment and prevention, under strict ethical guidelines. Assessment programs and ethical codes have been established to govern diffusion of these technologies. It is not easy for

even wealthy and well-connected Canadians to buy their way into the front of the line for applications of these new technologies. There are experiments in leading university labs in radical life extension therapies. These are widely reported in the scientific and popular press, and there is a lively debate about the ethical, economic and environmental implications of this technology.

Research and development

Most research is funded through peer-reviewed competitions, often with both public and private participation. Encouraged to share findings and strategies by not-for-profit research where many of the discoveries are widely available for use with little cost, global virtual health research networks have sprung up around the world to focus on particular fields of research. Work-in-progress is usually available through the Internet. New ways to accredit 'discoveries' are developed, to better reflect the collective nature of intellectual work in the scientific community. Research on socioeconomic linkages to health status is also thriving. Canada has become a leader in research on women's health, including issues such as body image, diet and family violence.

Federal-provincial dynamics

Both federal and provincial orders of government are deeply involved in the stewardship and direction of health care and population health issues in Canada. Although not devoid of some of the usual tensions that accompany federal-provincial relations, many of the issues that were extraordinary irritants in the 1990s and first years of the 21st century have now been resolved. Satisfactory and stable federal-provincial financing formulae were developed in the beginning of the century and have stood the test of time. The concept of public, not-for-profit delivery is widely accepted and is not contested by any provincial governments. All Canada's governments concur on the desirability of maintaining and strengthening universal Medicare and expanding it to a more comprehensive range of services. Finally, all governments understand and agree that they must find ways to improve the health status of their populations.

Aboriginal health organizations have achieved considerable scope under the authority of Aboriginal governments and are represented at federal-provincial tables. Aboriginal governments are especially insistent on a population health approach and thereby contribute an important perspective to health discussions, which benefits the whole population.

There is particularly 'hot' competition between governments in experimentation and innovation with the delivery system. New approaches are carefully evaluated and best practice information is widely distributed so that positive innovations can diffuse rapidly throughout Canada. Governments are seriously interested in successful innovations, because they are rewarded for success at the polls. The objectivity of popular assessment of innovations is assisted considerably by the development of detailed health system 'report cards' created by a fully federally supported, but entirely independent, Canadian Institute for Health Information. The Institute reports not only on the health care system, but on the health status of the population as well. Canadians have been gratified to see that many measures of health status have been improving, and that Aboriginal health status is gradually approaching the Canadian norm.

Cyberwave: "Your Health Care is Your Own Responsibility"

The Story

Wave after wave of technological change has left governments everywhere a minor player, barely able to provide effective core services such as law courts and policing. Tax revenue has fallen to a trickle as a combination of flexible labour markets (almost no one has a 'job' any more, in the 20th century sense), information technology and totally mobile international capital markets has made it all but impossible to trace income and collect taxes. Fixed property remains the only item that can be taxed effectively.

In addition to their inability to finance universal Medicare, Canadian governments also found it impossible to find ways to adapt their systems to 'cybermedicine.' In the last two decades of the 20th century, most provinces could not even find a way to allow their physicians to provide services over the telephone, never mind the more complex forms of remote sensing and diagnostics that became available in the 21st century. With remote surgery through a combination of laproscopic techniques and super-high definition imagery, United States 'surgical specialization centres' can provide long distance surgical interventions with much higher rates of success than can be achieved by local surgeons, and they can do so at lower costs.

By the end of the first decade of the century, the organized provision of health services in Canada has all but broken down, with each provider and institution doing the best it can under the circumstances. Not only is there no universal Medicare by 2015, there is no cogent health care system.

Few people have workplace benefits and insurance is prohibitively expensive since insurance companies cannot manage the risks. Consequently, only those at the highest income levels are able to afford insurance and are able to access the best health services available. Middle-income groups rely on a hodgepodge of services that they assemble themselves, including making difficult decisions about the forms of intervention to use. Of course, information is widely available about the efficacy of various interventions, but there is no way for a layperson (or even most professionals), to evaluate these assessments – which makes it almost impossible to decide on any rational basis among treatment alternatives.

Lower-income groups have to rely upon charitable institutions and a few tattered remnants of the old system of Canadian Medicare. Access, delivery and quality are unreliable.

There is no effective international health organization and when the global flu pandemic strikes, there is little to stop it. It rages through the world causing substantial mortality, even in the developed western world. This is frightening, and there are demands for change. But the demands are confused; with so much blame being cast on government incompetence that government is not seen as a possible solution. Technological change keeps rolling along – for example, the new Airbus 380 carries 580 passengers direct from Kinshasa to New York on three direct flights daily – and governments cannot get organized to respond, regardless of what the electorate wants.

Unfortunately, the 'upside' of this breakdown in authority – dramatic strides in health technology in the beginning of the century – is grinding to a halt by 2015. Many years ago

(2000), the then President of the United States and the Prime Minister of Great Britain made an innocuous statement about the need for the human genome to be public property and available to all researchers. The result was an immediate decline in all biotechnology share prices, temporarily wiping out millions of dollars of paper wealth. Although little understood at the time, this was but a minuscule hint of the extraordinary importance of intellectual property laws in the 'new economy.' Now, like a mythic creature consuming her own children, the very forces of technology which have made it impossible for governments to govern, are making it impossible to enforce intellectual property laws, thereby undermining the capacity of new technology to attract investment. Without the guarantee of intellectual property rights, it has become extremely difficult to attract investment in medical technological developments.

By 2015, there have been significant declines in the stock prices of pharmaceutical companies, which have been unable to contain the growth of non-branded pharmaceutical 'knock-offs' popular in all jurisdictions. The generic industry was at first contained with the extension of patent protections, but this did nothing to halt the production of illegal copies, especially in Brazil, Russia and China, which has become a centre for a new kind of 'drug trade' that is a lot more lucrative than old fashioned recreational drugs. In virtually all market sectors, it is increasingly difficult to control pirating of knowledge products; consequently, investment in research and information technology has been drastically declining.

The federal government had become largely irrelevant in the field of health and health care. With dwindling transfers due to repeated fiscal crises, the virtual cessation of research funding and the undermining of any regulatory roles, the federal government no longer has a meaningful function. Provinces, as well, are finding themselves marginalized for many of the same reasons, and are struggling to maintain some basic services. Those who recall the old days of universal Medicare are derided by the media as hopelessly out-of-date and contributing to Canada's continued inability to compete effectively in the new world of continuous technological revolution.

Focus of health policy

There is neither a health care system, nor policy. The health care sector operates as an entirely market-driven private sector, with the exception of a few remaining charitable institutions. Health care goods and services exist alongside all other goods and services, to be purchased as needed and affordable. However, while government has bowed out of the health sector, neither has any well-organized, large corporate entity been able to sustain itself as a provider in this market place. The health market is therefore chaotic.

Health care for the poor is limited to life-threatening acute care treatments provided in acute facilities and medical services in semi-charitable health clinics. There are also tax credits to assist the poor and vulnerable in purchasing health insurance coverage and essential services, but few people pay their full taxes anyway, so credits are not a particularly important policy instrument.

One consequence has been the need for individuals to become as self-reliant as possible. Health care has become a mandatory subject in schools and is a popular subject of news programs and Internet-based courses. Individuals

are also adept at basic forms of self-diagnosis, and feed results to Internet-based services, which in turn provide inexpensive treatment advice. Unfortunately, it is difficult to tell the charlatans apart from others, and Canadians remain naïve about the value of untested 'alternative medicine.' There are no trusted national or international agencies to evaluate the clinical effectiveness or efficacy of medical technologies and pharmaceuticals. There are no monitoring agencies or accountability processes. There is no stewardship of the health care system as there is no system to speak of.

Delivery systems: organization

The loosely-related relationships among providers cannot be characterized as a health care delivery 'system.' Almost all delivery outlets are independent private for-profit enterprises: hospitals, clinics, physician offices, chronic and palliative care services are privately operated. The only exceptions are charitable organizations that operate services for the poor.

There is a wide spectrum of delivery options and agents. There are some small health networks attempting to provide an integrated service, independent fee-for-service providers, services provided through the Internet, complete with testing and diagnosis at specially adapted machines in mall outlets. Most outlets provide a range of services targeting different price levels. Face-to-face contact is the most expensive service, and Internet-based services and information are less expensive and more commonly used services.

Delivery of health care services is dominated by the information technology infrastructure. However, without national standards and interconnectivity the ability of this infrastructure to transfer information seamlessly among providers is limited.

There are almost no disease prevention or health promotion programs. Other than charitable services, individuals are responsible for caring for themselves, managing their own health care and deciding what services to purchase.

With the expansive range of options, the high costs, and the complexity of decision-making, most of the population utilizes health care services only when absolutely necessary. Insurance companies do have plans that provide case management, primary care physician care and networked health care, but the plans are too expensive for most people.

Financing and payment structures

Individuals pay most costs at the point of service. A fortunate minority has some form of health coverage or insurance through their jobs, but most people have no job benefits at all.

Many health care professionals are salaried, remunerated by the private sector organization that owns the facility in which they work. Often these facilities are owned by groups of health care professionals. Other health care professionals are self-employed sub-contractors. Still others operate on the old independent fee-for-service system. The range of enterprises – from the elite to the cut-rate – attracts various layers of health care professionals. While the elite enterprises tend to recruit the professionals with the best credentials, there are also some professionals motivated by other factors that opt to work for mid-range, or even cut-rate, enterprises.

Overall costs of health care services are difficult to calculate, as there are no longer any reliable GDP or health sector statistics. It appears that health costs may have grown substantially as a percentage of the economy. Individuals

remain desperate for services when ill and pay whatever the market will charge – which is sometimes everything they own. Personal bankruptcies due to medical payments – termed 'medical bankruptcies' – have become a common phenomenon in Canada by 2015.

Quality of health care services

Quality of health care services varies amongst providers. As with the commodity marketplace, there are the 'Holt Renfrew' providers, the 'Hudson Bay' providers and then the discount 'K-Mart' type providers. There are no provincial, let alone national or even international, health care standards.

The overall health status of the population deteriorates. With health care understood as a commodity to be consumed when necessary, the prevention, promotion and primary care aspects of health care are usually unattended. There is no consistent government attempt to address the determinants of health status. With much uncontrollable environmental damage, the collapse of any regulations over workplace standards, the deterioration of other health and safety standards, and increasing gaps between the very wealthy and the poor, population health is under great stress. One consequence of this disregard is the extreme bifurcation of individual health status between rich and poor. The differences were especially evident during the flu pandemic when death rates were much higher among the poor than the wealthy.

In the absence of national standards and protocols, and the dominance of the private sector, the country is unable to contend with national threats. Pandemics of treatment-resistant bacteria and viruses are a growing threat, particularly for the vulnerable and for a country of deteriorating health status. Drug resistant tuberculosis is now becoming very common among poor people in Canada, especially among Aboriginals in Canada's north. Standards of food and water safety have been deeply compromised.

Technology and health care

While the delivery and tools of health care are technology-driven, medical technologies are extremely expensive. With limited quality control, the less-expensive technologies are unreliable and often not safe. The exception is pirated technology – which can be very cheap – but it is even more unreliable. At the elite level, the health networks serving the wealthy provide leading-edge technologies and treatments, but serve only a thin slice of the population.

Information technology is the dominant delivery medium for health care goods and services. Pharmaceutical, medical device, health information and diagnosis companies are all Internet-based. Sales are usually Internet-based.

There have been some startling developments claimed in fields such as nano-technology, xeno-transplants, genetics and artificial organs, as well as new treatments for cancer and several other important illnesses. It is, however, increasingly difficult to confirm and verify claims as reliable, especially as most of the 'old' institutions which had strong credentials (from Humanacana to the Mayo Clinic) have been bought, sold, reorganized and merged so often as to be unrecognizable, or simply have ceased to exist. Nevertheless, for the wealthy, there are clinics claiming to apply technology to supposedly miraculous ends, including even tangible life extension. There are also unverified stories about new super-designer babies, paid for by the elite who are especially prone to search for technological fixes.

Research and development

In the absence of public or private sector control or management, research is *ad hoc*, disorganized and uncoordinated. Evidence-based medicine is no longer realistic as there are no longer any objective tests of new technologies; what testing there is, is usually financed by the firms standing to benefit from positive results. However, since the collapse of intellectual property, there have been few funds available for research in any case.

The little research done is often undertaken in tight security and the results closely held so that intellectual property rights in law are replaced by the more old-fashioned method of appropriating intellectual property – secrecy. As long as secrecy is maintained, some of the economic rents from knowledge can be realized; the result, however, is extremely limited dissemination of ideas. When there is publicity for a new advance, it is impossible to distinguish from the general background noise saturated with advertising of all sorts of claimed new advances.

With the lack of stewardship, standards, interconnectivity, long-term vision and coordinated funding, there is a dramatic decline in the quality and depth of research.

Federal-provincial dynamics

Provincial stewardship of the health system in the first decades of the 21st century was undermined by the increasing use of the Internet and telephone technology for the delivery of health care services. The provinces could not find a way to respond within the framework of universal medicare. Allowing physicians to bill for telephone calls was viewed as prohibitively expensive and permitting Internet based consultation, with its rapidity and huge volume potential, was even more so. As remote surgery came into play in the US, and relatively inexpensive surgical interventions with better outcomes became possible, provinces could not find a way to respond effectively. To complicate matters, competing centres were established in several hospitals – none of which would have the volume necessary to compete effectively with US providers. Canadians were reluctant to pay for the equipment and accept the role of being merely observers and caregivers.

On top of this, governments' ability to tax income or consumption began swiftly to erode once Internet-based purchases passed half of all consumption, causing massive breakdowns in the 'bricks and mortars' world and a seemingly never-ending, huge glut on the retail real estate market. At the same time, with national borders becoming meaningless in economic terms, the pressure to lower tax rates down to those of the US (or the Bahamas) became more and more intense. Businesses found it so easy to move from one location to another, that even small tax advantages could have a large impact on the level of business activity. Consequently, the federal government could not maintain the real value of its health transfers and, in the face of continued erosion of its contribution, lost much of its remaining credibility in the health system.

The federal and provincial governments occasionally attempted to work together to find a way through this morass, but the political stakes were too big and the issues too rapidly changing. Most of the attention in federal-provincial relations was instead focussed on trying to persuade voters that it was the fault of the other level of government.

By the second decade of the 21st century, the federal government is reduced to little more than a flag and embassies. Provincial governments have only the ability to provide rudi-

mentary law and order and basic public services, along with a little assistance for some charitable health services.

While many people resisted the abdication of health care responsibilities, and tried to preserve a solid level of basic care at least for the poor, the value set of Canadians has shifted. There is a general acceptance – albeit sometimes reluctant – that health care is a commodity similar to all other commodities.

Regional Dominators: "A healthy nation is a strong nation"

The Story

The prolonged recession, beginning with the collapse of US equity markets, a calamitous drop in the United States dollar, continued terrorist incidents in the US, and a limited nuclear exchange in South East Asia, resulted in the election of a protectionist, nationalist President and Congress in the United States. The escalation of the Chinese-Taiwan conflict, and the reemergence of Russia (once again federated with Ukraine and Byollerus) as an international military power, (reorganized along principles that can only be described as Fascistic) has caused the transformation of the European Union into a military alliance, with the remilitarization of Germany as part of an integrated EU military.

The world has turned from domination by economics and markets in the last decades of the 20th century, to the reassertion of geopolitics and naked military power in the first decades of the 21st century. Small nations like Canada must declare their loyalty unreservedly within one of the emergent 'big power' alliances. Canada is a bit player and must seek shelter under the umbrella of the United States' alliance. However, Canada is also an enthusiastic participant in rearmament and in promoting the geopolitical might of the democracies, as it endorses the reigning ideas of the time just as much as any other nation.

To help address its continuing imbalance in trade, the United States Congress has required Canada to agree to trade pacts that permit American health care corporations to compete on equal terms and conditions in Canada. Congress also has required Canada to agree to 'restraint of trade' laws that disallow Canada from maintaining any government monopoly or using regulation to prevent any corporation from offering a legal good or service for sale. Consequently, as in the Global Club scenario, there is two-tier health care in Canada and United States, with health corporations dominating the second, private tier.

In the Regional Dominators world, however, the state remains an effective player, and the corporate sector is expected ultimately to serve the needs of the state, rather than vice versa. Consequently, Canada retains a functioning lower-tier health services program open to anyone, without any charges, and the lower tier has even expanded to include home care and pharmaceuticals as populist politicians featured such expansion in their campaigns.

With remilitarization and the growth in global tensions, research and development is oriented increasingly towards military purposes and financed by the state, sometimes in government-led private-public partnerships. While research is well funded, it often takes place under a cloak of secrecy and so does not conform to the normal procedures of collaborative scientific inquiry. This is especially pronounced in the face of continued threats of bioterrorism. There is also a strong trend towards applied, rather than basic, research.

Like every country, Canada is concerned about the healthfulness of the population, not least for military reasons. There are many lifestyle programs aimed at keeping people healthy. Prevention and safety are emphasized and an effective regulatory apparatus is in place for food and water safety.

The federal government has become a larger and more powerful player in the health arena, both through its control of the military and through its ability to overcome provin- cial resistance by invoking the higher needs of the nation in the 'present emergency.' The system of transfers to the provinces has been strengthened and overall harmony reigns between governments, as provinces accept their role in the current context as primarily administrative agents responsible for delivering health care services to meet national standards.

Focus of health policy

Canada is a member of the Americas Treaty Alliance, encompassing both North and South America in a single military and economic zone. Within the zone, there is relatively free trade, subject to the demands of the military and the continuing concern of the United States to improve its balance of trade, resulting in occasional protectionist outbursts. Canada is the third most important member of the Alliance, after the United States and Brazil, and has some influence in its councils.

As part of the Alliance, Canada has had to open up its health care system to the private sector and to foreign (American) firms. The result has been a growing presence of United States-based health firms in Canada, which dominate the newly emergent 'private tier.' Most people in middle- and upper-income groups have access to and use the private tier, either through employment-based health insurance or privately purchased insurance. There are regional variations: There is greater utilization of the private tier in the western provinces, and far less penetration of for-profit firms in Quebec and Atlantic Canada.

The emergence of an important private tier has not, however, eliminated the critical role of governments in the funding and delivery of health care services. Private health care providers continue to be fully reimbursed from the public purse for the 'government share' of their fees. More importantly, the increased power of populism and the idea of 'sacrifice for the nation' have lead to demands for the nation to give something more back – a kind of political *quid pro quo*, with even the most conservative politicians supporting programs for the 'people.' It is no longer popular to be anti-state. In fact, as in the pre-Second World War period, the politicians who are most right-wing are not necessarily always market oriented and sometimes sound like extreme left-wing politicians in adopting populist issues.

As a consequence, even in the United States, programs are now in place to ensure that at least basic health care services are available to everyone. In keeping with this philosophy, Canada has strengthened its publicly available health services that, if not as luxurious as the upper, private tier and if occasionally not able to offer the latest technology, remain adequate. Indeed, quantitative analyses continue to show that there is no statistically significant difference in outcomes for those using the private tier and those using the public tier. In some provinces, some costs of long-term care, dental care and pharmaceuticals have been added to the services covered by the public system.

The flu pandemic at the beginning of the century was a real scare for all governments,

especially in the United States, where significant mortality among (poor) Hispanic and black populations led to acute labour shortages in some areas, especially the military. Indeed, with increasing need for military human resources, there has been growing consciousness of the overall health level of the population. The Canadian government, along with all other governments, spends a good deal of effort and money on programs meant to improve overall levels of healthfulness. These programs focus on everything from good nutrition to improved automobile safety.

Delivery system: organization

The New Canada Health Act (2013) requires provinces to ensure that no resident is denied access to health services due to an inability to pay charges, but it otherwise permits provinces to allow providers to charge directly for services. In all provinces, publicly funded regional authorities are responsible for ensuring that those basic services are available. Sometimes regional authorities will provide for these basic services through traditional non-profit providers, and sometimes through compensating private for-profit providers for basic health care services, where the for-profits are willing to accept only government compensation for their services.

The for-profit sector is made up mainly of large United States firms, with a few smaller Canadian competitors. The for-profit providers offer amenities (or at least claim to do so) over and above the services paid for by governments, in return for extra charges paid by patients or their insurance companies. In any case, regional authorities are required by trade law to compensate the private tier for any services that it does provide, and the compensation must be at least equivalent to the amount it pays non-profit providers for comparable services. These arrangements mean that there is constant tension between the for-profit providers and the regional health authorities and a great deal of confusion and difficulty in the interface between the for-profit and the non-profit parts of the system. The regional health authorities spend a lot of time and effort in policing the system.

Many health professionals are on salary with the regional authorities. As labour markets have become tighter, wages for nurses and other allied professions have crept back up towards a 'middle class' level and this development has attracted more people into the profession. Despite efforts, hospitals have not been able to contain costs by using fewer trained personnel, for the simple reason that few are available. Rather, hospitals and regional health authorities have had to turn to technology to seek ways to save costs. Regional health authorities have been innovative and creative in finding ways to use information technology to reduce their costs.

Some physicians, and many of the more skilled nurses, work part time for the private tier as well as for the regional health authority. Their compensation is often higher in the private tier. There is a continuous tug of war between the public and private sector providers, and the regional authorities must mediate between the two. While the public's preference is usually for private tier services – if they can pay for them – there are often equally long waiting times in private facilities as in the public tier as a result of a shortage of health care professionals.

Financing and payment structures

Health care in this scenario is very similar to that in the Global Club scenario, except that both the non-profit sector and the authority of the government to regulate health care is stronger in this scenario than in the Global Club scenario.

The public system remains fully financed by the taxpayer, with budgets paid through health authorities. Regional health authority budgets are determined in a number of ways, differing from province to province, and there is a good deal of interchange of information between provinces on ways to improve budgeting. Most health authority budgets are based on socio-economic and demographic indicators, as an adjustment on last year's budget.

The private sector organizations are paid by private patients (or, more often, their insurance) and by the public sector. In practice, private sector rates are set in negotiation with health insurance companies. Insurance companies are under pressure from the companies paying health insurance benefits on behalf of their employees to contain premiums, and this pressure is reflected back to private sector health care providers. Nevertheless, the costs of services are much higher – perhaps as much as double – in the private tier. Most of this difference is reflected in amenities, such as rooms at luxury hotel standards, as well as additional costs in accounting, advertising and returns to investors.

There are significant issues of private sector 'skimming,' with complex and costly cases being rejected by private insurers. Despite a slew of government regulations meant to prevent skimming, the public sector often ends up being responsible for the more complex, and expensive, cases. This raises the average cost of the public system, while lowering that of the private sector.

Total expenditures on the health system have risen considerably with the presence of the private sector. Health expenditures are now approximately 16 percent of GDP. About 60 percent of total health care is paid by the private sector and 40 percent by the public sector. There is much discussion and debate about the escalating total health care bill, and the increasing percentage of GDP it is consuming, especially in view of labour shortages and the effort to strengthen the military might of the nation.

Quality of health care services

There is a perception that the public system does not offer the same quality of care as the private system. This perception is, of course, fostered by massive advertising undertaken by the private sector in order to attract clients – and by the presence of luxury in private sector facilities. In reality, there are little or no differences in outcomes between the upper and lower tier, if outcome measures are adjusted to reflect case complexity. There are some specialized interventions in the private system and new, expensive procedures that are undertaken exclusively by the private sector. These highly visible interventions encourage the perception that the private tier is 'better.'

There remains mainstream political support for the publicly funded non-profit ideal in the health care system, and Canadians have not given up on the idea of ensuring that everyone can have access to health care regardless of income and without a means test. Politicians have found themselves pledging support for the publicly funded non-profit system as part of their election campaigns – and there is improved coverage of long-term care, home care, pharmaceuticals and, in some provinces, dentistry, albeit in physical surroundings and with amenities which are not up to the standards of the private sector.

Population health is good and getting better, but this has little to do with the health care system and a lot to do with higher rates of employment.

Technology and health care

Both private and public providers make extensive use of information technology, including developing multiple remote outlets and Internet/telephone triage. The private sector also has implemented increased centralization of some procedures through the aggressive use of remote surgical and other interventions; for example, all its laproscopic surgeries are carried out by remote control from surgical centers in the United States. These outlets specialize in delivering one type of procedure, performing tens of thousands of the specific procedure each year. The consequence of this type of concentration and specialization is that complication rates are lower than when on-site surgeons do the same interventions, operations and recovery times are quicker, and costs are lower.

With substantial research funding from the military, there are some promising new advances in techniques and in tools such as prostheses and sensing devices. There is less focus on illness treatment. There are few reports of 'technological marvels' as the priority of research has been turned more towards national ends.

Research and development

Government funds most research, with much of the money coming through the military. The result is an orientation of research towards areas of special military interest, such as chemical and biological warfare, prostheses, remote sensing, spinal cord repair and brain research. Research is hampered both by the secrecy inherent in military-funded work and by the beauracratic channels that decide on research priorities. It is very hard to get any basic scientific or curiosity-driven research funded.

In Canada, much of the research effort is integrated fully into the Americas Alliance efforts, with niches assigned to Canadian researchers who often do not get a chance to see the big picture.

There is not much of a capital market for research any longer, for a variety of reasons. First, the speculative technology market has still not recovered from the bankruptcies and collapses following the bursting of the Internet bubble, which also caught biotechnology stocks in its wake. Second, the military has a propensity to step in and classify work, even to expropriate it, just when it gets interesting. Finally, while intellectual property rights are well protected inside the Alliance, and to a certain extent with the European Union, this is not at all true of China, Russia and other offshore countries. This makes it very hard to collect the economic rents from the minority of research projects that actually do end up in a commercial product.

Federal-provincial dynamics

When the US economy tanked, both federal and provincial governments found themselves with hugely diminished tax revenues. Ontario, with its reliance on the automobile sector, was hit especially hard, technically becoming a 'have not' province for a few years. As a result, the federal government could not maintain the real level of health transfers to provinces. But the provinces were also in deep fiscal trouble, and did not want to raise taxes in the midst of the continuing recession. Of course, the provinces took every opportunity available to ensure that Canadians blamed Ottawa and not them for the problems in the health system.

Federal-provincial relations in health care were deeply poisoned. The federal government

tried to use its remaining influence to preserve universal medicare, but it did not have any moral clout. Provinces in the West encouraged the spread of partially privately financed for-profit facilities and all sorts of 'extra billing' to proliferate, on the (mistaken) grounds that it would relieve pressure in the public sector.

Then, with the Taiwan crisis and the reemergence of Russia as a military power, the elections in the US in 2012 and the beginning of rapid remilitarization, everything changed. Suddenly, government was critical to survival, not just an appendage of the market, and Canada, as caught up in the new nationalist-military enthusiasm as any other nation, was expected to do its part in the new Americas Alliance.

What was impossible the year before, overnight became readily achievable. Taxes were collected and revenues started to grow as spending accelerated. It was the job of the Canadian central government to take charge and organize the provinces to ensure that the population was healthy and cared for, and able to defend the country. The provinces expected the federal government to act, as this was now seen as a period of national emergency. Except in Quebec, and even there to a great extent, constitutional niceties were deemed irrelevant and ignored in view of the perceived new threats to national security.

The New Canada Health Act was a response to this crisis, capping a few years of reasonably harmonious, and very rigorous, federal-provincial planning. In a politically successful compromise, the New Canada Health Act recognized the existing and now established role of the private for-profit sector in the delivery of health care services, but at the same time expanded coverage of the public system for pharmaceuticals, home care and long-term care. Of course, many of the provinces had already included these areas of health care in their plans to some extent. But the population saw this development as a reasonable compromise preserving Canada's commitment to social equity – although it was anything but in reality.

The New Canada Health Act also included substantial additional federal funding and a 'governing council' formed with federal and provincial representation. The mandate of the council was to monitor and regulate health care services on behalf of the provinces and the federal government. To ensure that the council could provide real leadership and not be just a debating society, clear procedural rules were established, including rules for voting to resolve disputes. Through the council, and through extraordinary powers granted to it for human resource planning in all sectors during the emergency, the federal government now exercised substantial influence in the health care sector.

The federal government also became more active in areas of population health, from the regulation of food and water safety to the anti-tobacco effort and attempts to promote healthy lifestyles. All of this was accompanied by a strong dose of nationalism and flag waving.

Conclusion

This imaginary and speculative exploration of possible futures for Canada's health care system is meant to provoke debate and stimulate ideas. There are no correct answers in such speculation, but we do believe that the internal logic of each scenario is reasonably consistent and tells a story that is at least moderately plausible, given the scenario. And even if not plausible, the scenarios certainly can claim to be provocative.

There are some important policy considerations that emerge from the scenarios:

- The future of Canada's health care system is intimately linked to **international economic agreements** and the extent to which we can retain control over our own destiny as a nation. Like it or not, Canada is a middle-sized nation living side-by-side with a very big nation: We can never be in a North American equivalent to the European Union. In this context, maintaining some policy independence will be greatly assisted by multilateral agreements that are democratic and which respect each nation's particular values.

- Although it may seem far from the world of Medicare, if we are to preserve our unique health care system, Canada should be in the forefront of nations seeking to establish such multilateral trade agreements based on principles of fairness and equity. Simply saying 'no' to multilateralism will inevitably mean that Canada will eventually fall prey to bilateralism, in the form of uneven deals with the much larger and more powerful United States. This development will threaten our social institutions, including Medicare.

- **Information technology** has astonishing potential to influence the future of health care. Indeed, 'information technology' is a misnomer since the technology can be as much a service-enabling tool as an information provider, whence the term 'digital delivery.' All the information technology ideas raised in this paper are completely feasible with today's technology, which means that they are probably already yesterday's ideas. Whether it is automated 'red flag' systems tying records and inquiries together (nothing more than is done by thousands of e-commerce sites today), or remote surgery by specialized teams, all of this is achievable right now.

- Although the public sector has been spending substantial amounts on information technology in the health sector, there also must be research and experimentation on how to adjust Canada's Medicare system to the new technology – policies in regard to everything from fee schedules to accountability. It is not an exaggeration to say that the organization of Medicare has not yet adapted to the telephone, let alone the Internet and the coming integration of the telephone and the Internet. This is not a problem of technology; it is an administrative and policy challenge. Regrettably, there has been little or no support for policy work on the adaptation of Medicare to technological change. The failure to adapt our system of Medicare to technology is as much of a threat to the long-term sustainability of that system as is the emergence of private sector hospitals.

- Current **federal-provincial arrangements** represent another form of administrative challenge. Today's federal-provincial structures are deeper and more convivial at the working level than most Canadians imagine: A network of federal-provincial officials' committees continues to work through all the sound and fury thrown up by bickering over money at the political level. Nevertheless, there remains a real question of leadership – or, rather, it is a *rhetorical* question: Can this loose network of bureaucratic committees, supplemented with the occasional meeting of Health Ministers, provide the leadership necessary to steer Canadian health care through the thickets of the next decades?

This is a rhetorical question because the answer is, self-evidently, 'no.'

- Massive technological change, trade issues, new diseases, new treatments and all the other forces discussed in this paper do not have a high regard for national borders, let alone provincial boundaries. As the scenarios in this paper illustrate, there is no guarantee that Canada will be large enough or powerful enough, even at the national level, to be able to navigate through the deep and impersonal forces that will impinge upon us; however, it is certain that the provinces individually will be unable to do so. The provinces are deluding themselves if they think that the power to lead the health care system can be vested at their level. Canada, meaning both Ottawa and the provinces together, needs to develop some acceptable form of real leadership for the health care system at a national level (although not necessarily the federal government).

- The cost of new technologies cannot be disassociated from the **way that research is funded**. If high-risk capital is used to fund medical research, investors will need to be compensated in light of the risks involved. That implies that the one-in-ten or one-in-a-hundred research projects that result in a successful commercial product must, in essence, pay for all the projects that fail to result in a commercially exploitable product, so the return on capital will be worth the gamble. Of course, firms will seek to maximize their return, which does not always mean that prices are the maximum possible, but it means very high prices for new products. The implications of eventually paying for the products should be considered when medical research funding policy is discussed. The opposite is also true: Where research has been publicly supported, the returns should be commensurately reduced, and reflected in the eventual price.

- It is trite in the age of HIV to say that viruses and other micro-predators know no borders, but it is nevertheless true – and it bears repeating. We assumed a world pandemic and this is just fiction; however, the hard fact is that the world is due for another round of deadly flu virus. It is also a fact, to pick two important examples, that drug resistant tuberculosis is spreading very quickly and malaria seems to be reappearing in North America. Furthermore, although we did not discuss it explicitly in this paper, global warming will have potentially profound effects on the development and spread of diseases to areas in which they have not previously been endemic. Canada can design the best health care system in the world; many Canadians will still suffer and die from diseases that have their origins in other parts of the world. We have to spend a portion of our health budget on helping the **less wealthy nations** of the world to protect themselves if we are to protect ourselves.

- In addition, the rules by which **intellectual property** is 'commodified' will have a profound relationship to the amount of investment available for the creation of intellectual property. The nature of that intellectual property also has to be considered. It is not far-fetched to imagine surgical procedures being protected by intellectual property laws, if Internet business processes are successful in seeking legal protect of their intellectual property. What is not clear is whether this would be positive and should be encou-

raged – since it would increase the amount of investment available and encourage development of new techniques – or whether it would be deeply negative in adding multiple costs to the system and negating centuries of free sharing of techniques to all who would learn. Again, research would be warranted on these issues and other policy issues related to the creation and protection of intellectual property.

Doubtless there are many other policy observations that can emerge with further debate about these or other scenarios. It is our hope that this paper may contribute a useful framework for such discussion.

Endnotes

1. The publicly funded system in Canada does not consist of government-run institutions and government-salaried employees; rather, institutions are mostly private non-profit (some municipal hospitals are the main exception) and health care workers are primarily employed by these institutions. Physicians are paid mainly on a fee-for-service basis directly by provincial governments (though there are a growing number of alternative arrange-ments). For simplicity of expression, we usually refer in this paper to Canada's present complex mix of government- financed and non-governmental delivery agent simply as the 'public system.'

2. For example, we would anticipate that Albertans, with their long tradition of low taxes and ethos of 'self-reliance,' would be most amenable of all Canadians to a private tier of health care. Yet, in a poll of 518 households throughout Alberta held between March 14 and March 17 2000, Insight Research and Consulting Corporation found that 59.8 percent said 'No' and only 40.2 percent said 'Yes' to the question: "Should Albertans have the option to pay extra for treatment in a private clinic to avoid waiting lists in the public health system?" (Data from the A-Channel/Insight Poll.)

3. Estimates from OECD Health Data 2000.

4. The scenarios were developed by the *Future of Global and Regional Integration Project*, sponsored by the Institute of Intergovernmental Relations at Queen's University, Kingston, Ontario, and are being used as the basis for a number of studies. However, authors of each of the studies in the series were free to interpret as they saw fit, and we take responsibility for our own, possibly somewhat more extreme, interpretation of the scenarios.

5. It is the population over 75 that uses health care services disproportionately. The population over 75 years of age will grow from 5.8 percent of the total population in 2001 to 6.7 percent in 2016. Even if we assume that the over-75 population currently accounts for 50 percent of health care expenditures, or about half of the current health care system's 9 percent of GDP, the additional elderly will add only about 1.1 percentage points to health care expenditures as a percentage of GDP. In other words, everything else being equal, health care expenditures would increase to 10.1 percent of GDP by 2016 due to the increased number of elderly. This represents a real cost pressure, but it is hardly the Armageddon of health costs. (Figures from Statistics Canada, Population projections for 2001, 2006, 2011, 2016, 2021 and 2026, July 1 CANSIM, Matrix 6900. Figures represent the medium-growth projection and are based on 1999 population estimates.)

6. From the Central Intelligence Agency of the United States, *The Global Infectious Disease Threat and Its Implications for the United States, NIE 99-17D.* January 2000. "New and reemerging infectious diseases will pose a rising global health threat and will complicate US and global security over the next 20 years. These diseases will endanger US citizens at home and abroad, threaten US armed forces deployed overseas, and exacerbate social and political instability in key countries and regions in which the US has significant interests. Infectious diseases are a leading cause of death, accounting for a quarter to a third of the estimated 54 million deaths worldwide in 1998. The spread of infectious diseases results as much from changes in human behavior – including lifestyles and land use patterns, increased trade and travel, and inappropriate use of antibiotic drugs – as from mutations in pathogens.

- Twenty well-known diseases – including tuberculosis (TB), malaria, and cholera – have reemerged or spread geographically since 1973, often in more virulent and drug-resistant forms.

- At least 30 previously unknown disease agents have been identified since 1973, including HIV, Ebola, hepatitis C, and Nipah virus, for which no cures are available.

- Of the seven biggest killers worldwide, TB, malaria, hepatitis, and, in particular, HIV/AIDS continue to

surge.... Acute lower respiratory infections – including pneumonia and influenza – as well as diarrheal diseases and measles, appear to have peaked at high incidence levels."

7. 'Dollarization' is the adoption of the US currency as the effective operating currency in Canada (to be distinguished from a fixed rate of exchange or the adoption of a new, common currency).

8. Early in the 21st century, the Toronto University Hospitals Network was unable to honour the huge bond obligations it had accumulated since this method of financing had been permitted in the late 1990s. Instead of bankruptcy, the Network privatized itself and issued an IPO, the largest health care sector IPO in Canadian history; this cleared all debts and created a significant infusion of equity capital. This privatization was cele-brated in the media as a stunningly successful example of the effectiveness of the private sector in health care.

9. An easily maintained toolbox-size kit provides for most standard diagnosis, including pinprick blood tests, and plugs directly into standard phone lines.