

Foreword

This Working Paper is one of six case studies on the scenarios for global and regional integration now being released by the Institute of Intergovernmental Relations. The Institute embarked in 1999 on a multi-year research program on the effects of and challenges for Canadian federalism of global and regional integration. This project proceeded from an assumption of continuing and possibly accelerating international integration and governance, and that policy matters within provincial government jurisdiction will increasingly be the subject of international negotiation. The broader objective of the project has been to examine whether the institutions and dynamics of the Canadian federal system can continue to effectively manage this change. The central issue we have been investigating is under what circumstances continued *ad hoc* adjustment to the processes and institutions of the federation would remain the appropriate course of action; and under what conditions more systemic reform would be the preferred or even the essential course to take. For more information of the research output and findings of the project overall, please consult the Institute's website at www.iigr.ca.

Our research program has consisted of several components: the development of a set of scenarios for the world in 2015; a baseline study of Canadian federalism and international relations; a set of papers applying the scenarios and comparing integration challenges in other federal systems; and these six case studies. The case studies cover the following policy sectors: Biodiversity, Climate Change, Health and Health Care, Agriculture and Agri-foods, Aboriginal Governance, and Financial Services. They were initially prepared for discussion with the policy sector communities. Most of these discussions were sponsored by the Government of Canada through the relevant departments.

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Finally, as Director I wish to acknowledge the role that Douglas Brown, Institute fellow, has played in the overall coordination of these case study papers and in our Global and Regional Integration project as a whole.

Harvey Lazar
Director
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I. 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 private health care for essential services as an alternative to the publicly funded system. 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.¹ 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.

¹ 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 14th and March 17th 2000, Insight Research and Consulting Corporation found that 59.8% said 'No' and only 40.2% 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.)

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 with a little more or a little less than average incomes, 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 will receive – then the political basis of Canada's egalitarian system will be destroyed. Today, volatile government funding, lack of 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, pharmaceuticals are the fastest growing cost in the total Canadian health care budget. There are growing demands for long-term care and home care services. Neither of these forms of health care is entrenched as part of the universal health care system. Provincial plans often cover only a portion of long term care and home care costs. 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 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.

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 approximately 69.8 percent of the total health care budget; the private sector is responsible for 30.2 percent. This

compares, for example, with the US where the public sector is responsible for 46.4 percent, and the private sector 53.6 percent. Yet, in the UK the public sector is responsible for 84.6 percent and the private sector, 15.4 percent; in Sweden the public sector is responsible for 83.3 percent and the private sector 16.7 percent². So, while Canada prides itself on its public, universal health care system, it is not as comprehensively publicly funded as many other jurisdictions, and it is becoming less so everyday through the relatively 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 the costs not covered by the public system. Private 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 it is rarely available to those who may need it most – working people with very low incomes in marginal jobs with few benefits, the part-time employed, the unemployed, those on social assistance, many pensioners. But beyond the gaps in public coverage, overall health care in Canada is a potential market in which a good deal of money could be made, if governments opened up this 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

² Estimates from OECD Health Data 2000.

system: Governments must pay the whole bill 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 globalization, 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 intra-Canadian 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 Canadian Medicare not just through the pressure to reduce taxes. For example, the rate of development and the ownership structure for new health technologies will largely be determined 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 much like the present. Furthermore, we have 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 describe clearly and forcefully the direction of change and its implications. In short, sometimes 2015 may have become 2025 or even 2050. All of this is not meant so much to say what *will* be, as what *could* be, in an effort to stimulate consideration in a policy context of the relationship of our health system to global futures.

We have been given four future scenarios for global economic and political structures - Global Club, Shared Governance, Cyberwave and Regional Dominators. Each of these has their particular 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 blocks, 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 since the end of the Cold War.
- **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 IMF, the World Bank and the WTO are democratized and increasingly

responsive to concerns for global equity, environmental quality and so on. 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 Microsoft come and go in decades as their main products become obsolete, whereas previously their life span was measured in centuries. No sooner does government begin to figure out a response to the existing technology, than a new technology comes along which is even more powerful. Essential powers of the state – such as the ability to tax and to regulate commerce – are vastly diminished. Canadian governments' policy making is simply not relevant in this scenario.
- **Regional Dominators** – In this scenario, old-fashioned geo-politics is back in the driver's seat. Within large geo-political 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 will the Canadian health care system look like in each of these futures?

We look at the future of the health care system in 2015 through the 'lens' of seven key areas. These areas 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 and how will they affect health care, including information technology as well as clinical technologies?
- **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:** We look in this section at questions such as: Who will have stewardship of the health care system? What will be the distribution of power and responsibility between the federal and provincial governments? However, federal-provincial issues are, according to the logic of the analysis in this paper, essentially residual; that is, a mechanism through which changes forced upon the system are mediated in Canada. Once the shape of the health care system itself is described, the federal-provincial aspects are relatively straightforward.

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 fifteen 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* a central feature of the future scenarios. One reason is that the aging of the population is common to all scenarios. But another, more important, reason is that population aging as a source of cost pressure has often been greatly exaggerated.³

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 where every person on their death bed is rushed to hospital and put on all the latest life support systems, to prolong the death process by a few weeks, will be

³ 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 of the total 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 percent 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.)

much more expensive than a system providing high-quality palliative care in the home. A country that forces every dying person to endure many weeks of pain and semi-consciousness will have a more expensive health system than a country that assists the death process at the request of patients. In this regard, 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 property, as we discuss in later parts of this paper. The increased 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 between scenarios. In all scenarios we assume that broadband transmission will be ubiquitous; almost all homes in Canada will have a broadband connection; 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 digitization 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.⁴
- **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, converting many currently terminal conditions 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 anti-depressives among 'ordinary' people who have hitherto 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 over-night 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 ordinary 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 the modern industrial societies we know today. 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, and 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 may also be enabled to design their babies to order. Yet, 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 we are likely more in a 2050 scenario than 2015 for all these possibilities to be realized, some elements of this future will doubtless begin to present themselves soon, so we believe it is useful in this exercise to include them in our scenarios. The costs 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.

⁴ We do not foresee widespread use of so-called 'smart cards,' as this technology is already out-dated. With information storage costs plummeting it makes no sense to store small bits of data on individual cards, so that the data is accessible only through the card. On the other hand, if the data is maintained centrally the cards are simply an expensive and unnecessary redundancy. Provinces now spending large amounts on smart cards are doing so only because the development was approved in the past, large amounts of money are vested in the projects, and no one is authorized to tell the emperor that he has no clothes.

• 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 Spanish Flu killed approximately 1 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, 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.⁵ 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.

After analyzing the health system under these headings for each scenario, we then illustrate the implications by looking at the care that might be given in each scenario to two fictional families as they are confronted with multiple health issues. We describe how these families would be served by the health care system in each scenario, how they maneuver through the system, the services for which they are required to pay, what type of service they receive, and their health status. Following is a description of the families.

The *Medicus One* family of four resides in a middle-class area of Toronto, Ontario.

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- 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, with HIV/AIDS and TB likely to account for the overwhelming majority of deaths from infectious diseases in developing countries by 2020. Acute lower respiratory infections--including pneumonia and influenza--as well as diarrheal diseases and measles, appear to have peaked at high incidence levels."

From the Central Intelligence Agency of the United States, *January 2000 The Global Infectious Disease Threat and Its Implications for the United States NIE 99-17D*

⁵ "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 United States 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.

Galen/Father: 47 years of age. University Professor. 6 ft tall, 200 pounds; non-smoker; plays squash twice a week; skis with the family once a year. Works minimum of 40 hours per week; typically stretches towards 45-55 hours per week. No history of heart disease or any chronic ailments. Has trouble with his left knee, probably related to years of running.

Hera/Galen's second wife: 42 years of age. Home-based small business. 5ft 4 inches tall, 130 pounds; non-smoker; goes to fitness class 3 times a week; skis with the family once a year. Responsible for household management and for most child-rearing duties. Health conscious. No chronic conditions. Strong family history of breast cancer.

Eve/Daughter: 15 years old. 5ft 5 inches tall, 105 pounds, smoker, but parents do not know. Enjoys skiing and snowboarding. Solid academic record. Works part time in bookstore. She is an anxious over-achiever. In the last year or so, Eve has developed an eating disorder and is bulimic, although she sees it as just something she does to keep control over her weight.

Adam/Son: 13 years old. 6 ft tall; 150 pounds; non-smoker. Extremely active: basketball, biking, skiing, snowboarding, hockey. Doing moderately well in school.

The *MedicusOne* grandparents reside near Galen's family in an upper-middle class Toronto neighbourhood.

Harvey was self-employed though most of his career and has no pension, but he built up a sizeable RRSP. Francis was a financial officer with various companies for her whole career. She also has no defined benefit pension plan, but does have large savings through a money purchase plan. Together with other savings, they have sufficient financial resources to live a very comfortable, upper-income lifestyle.

Harvey/Grandfather: 78 years old. Prostate cancer identified two years ago; currently on 'watchful waiting.' Deteriorating hearing that cannot be compensated for by a regular hearing aid. Fairly active: plays golf every week.

Francis/Grandmother: 75 years old. Had breast cancer 15 years earlier; successful outcome. Suffering from mild osteoporosis. Fairly active; attends fitness classes twice a week; walks daily with family dog.

- **The *Medicus Two* family resides in a lower income area of Toronto:**

Florence/Galen's first wife: 47 years of age. Web designer and information technology worker. 5ft 2 inches tall, 140 pounds; occasional smoker; little physical activity. Work is itinerant; no pension or other benefits. Periodic depressions and anxiety. Has hypertension. Family history of heart disease. Now single. Constant worry about money and now worries about retirement.

Marie/Galen and Florence's daughter: 23 years old. 5ft 10 inches tall, 140 pounds; non-smoker. Graduate student in English literature, supported by student loans and Teaching Assistantships. Very athletic and active. Lives with her boyfriend who is also a graduate student. No health concerns. Has an excellent relationship with her mother, but only a sporadic and strained relationship with her father.

II. 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 a very 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 demand a fully recognized,

parallel, or complimentary 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'⁶ of the Canadian economy. Pressured by competing demands for tax reduction, on the one hand, and improving health care service provision, 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 to a lesser extent in Ontario, the public system is used mainly by the poor; most of those with middle incomes and virtually all of those with upper incomes use private services. By 2015 the private sector has developed integrated North American-wide delivery systems, technology, purchasing, equipment and so on. 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 is not homogeneous across the country; the Atlantic Provinces and Quebec still maintain a much greater reliance on the publicly funded system – although even in these provinces, the middle-income group is beginning to increase their utilization of private services.

The federal role in health care is greatly reduced. There are renewed block transfers to the provinces but the conditions on these transfers have been effectively reduced, so that

⁶ '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).

the federal role is now limited to ensuring that all citizens have some access to 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 multi-lateral North American agreements. Governments carry on 'life-style' related population health campaigns, and assist local groups in their liability claims against those creating and distributing products that have produced adverse effects; these class-action liability claims are having some impact on the behaviour of a minority of corporations that undertakes 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 strongly supports '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 no real 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 America's Free Trade Agreement (AFTA) provides 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 AGC 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 AFTA.

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, 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 has had no experience of the 'old days of universal Medicare.'

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 timeliness of the private sector. It is also unable to afford the luxurious facilities, some of the most current and flashy medical technologies, and a full range of optional electronic delivery systems. The gap just seems always to widen between public health services and what is 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 potentially having economic consequences. Given the interconnected, global configuration of AGC, there is a determined focus on tackling global health issues, which 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. While this puts significant pressure on physicians who are widely recognized as 'top' in their specialty, at the same time it allows doctors and other health professionals from Brazil and Mexico much more freely to emigrate to Canada or the US. The overall result is increasing pressure to pay 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.

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 extending into Ontario. Since winning several important 'restraint of trade' victory in trade panels, Humanacana no longer makes any pretence of accepting publicly insured patients in its facilities; with the exception of the occasional high-profile case accepted when there are perceived advantages, for example, positive media coverage or 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 the private insurance fees are considered a 'top up' (one of the consequences of the 'restraint of trade' rulings).

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.⁷

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 its comparable private sector hospitals. St. Michael's remains the only 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 other comparable private sector organizations are ruthlessly efficient; average lengths of stay have been reduced, over 80 percent of all treatments are performed on an out-patient basis, electronic delivery networks transfer all health-related information, and some forms of diagnoses⁸, home testing and visits, particularly follow-up visits, are also 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 it is 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 salaried with complex 'performance' rewards and usually accompanying stock options; they must,

⁷ Early in the 21st century, the Toronto University Hospitals Network was unable to honour its bond obligations. Instead of bankruptcy, the Network issued an IPO, the largest health care sector IPO in Canadian history; this cleared all debts with and created a significant infusion of equity capital. This privatization was celebrated in the media as a stunningly successful example of the effectiveness of the private sector in health care.

⁸ An easily maintained toolbox-size kit provides for most standard diagnosis, including pin-prick blood tests, and plugs directly into standard phone lines.

however, adhere rigidly to practice algorithms and their treatment choices are always subject to review.

While each private sector IHMO is *in itself* extremely efficient, the system as a whole is not. There is tremendous duplication, as capacity for most interventions must be repeated by each IHMO. 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. The capacity to provide instant service with no waiting lists means that there is 'excess', or unused, capacity in all but the peak periods of demand. The private sector's complex system of charges and fees must be administered, and capital markets must be rewarded as well. This also means that a growing portion of each health care dollar is required to pay for administration, and shareholder returns. 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 'steward' of the health care system, but the public sector is no longer viewed as the 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 it is obviously no longer available on equal terms and conditions to all. The private sector has responsibility for much of the delivery system, with the 'third' sector (charities and non-profits) responsible for much of the remainder. While the public sector 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

The government pays a basic age-sex adjusted fee for each 'included' service on behalf of all Canadian residents. Complex regulations have been developed to try and make sure that the private sector services 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 the few public sector institutions.

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

Overall, public sector health care expenditures remain low, at about 4 per cent 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 the industrialized nations of the world; this is 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; the general perception is that the public sector is for the poor and the vulnerable, particularly in the big cities - where the bulk of the nation's population lives. There is, for example, tremendous variation in hospital amenities: private sector hospitals are extremely luxurious and some approach the standards of top-tier commercial hotels, while

public sector hospitals are drab, basic and offer only minimal levels of privacy and comfort.

With the exception of some very expensive and rare procedures, mainly carried out in the glare of public attention, there is no quantifiable difference in health outcomes between the public and private sectors, even with age-sex and risk adjustments factored in. This is often difficult to explain, but because the public sector ends up with more of the most difficult and expensive cases, the outcomes on an unadjusted basis look worse, costs per case can appear more expensive, and there are longer average lengths of stay. There is, therefore, ample room in the public mind for confusion and the 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 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, rudimentary diagnosis and treatment, and triage information – is available through the telephone, and through the Internet, especially since most families now have broad band connectivity with minicams coming as standard equipment in 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 very expensive and potentially very 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 very high, in order to repay the risk premium on the 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 become available. Experiments in radical life extension therapies, for example, restoring youthfulness at the cellular level, are being attempted on animals and rumoured to have been undertaken with success on some very old, very wealthy humans in secretive clinics. The human genome is the property of a few giant corporations. Although cure and prevention of many genetic 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. Charities and philanthropic foundations continue to provide substantial sums

for health research, but government research funds have disappeared. Health corporations also fund research and development for their proprietary use, especially techniques and other 'soft' products that can give them a competitive advantage. Global blocs 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 site of medical research. Canada's research is primarily a 'feeder' or specialized niche research organized for the whole AGC out of the United States.

Economically fruitful or potentially lucrative research, for example genetic research, is highly supported. Health issues that affect only a limited number of people or which do not promise economic pay-offs are disregarded, unless there is a foundation or charity, or independent wealthy individual, willing to pay special attention to those health issues. Consequently, the entire range of social issues, for example, family violence and its effects on health, receive no funding for research.

Federal-provincial dynamics

Despite much heated rhetoric, the federal government had found itself ineffectual to reverse the development of private hospitals in Alberta, and these quickly spread to BC subsequent to the election of a government in that province friendly to the concept of private hospitals. 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, but with a long and growing list of 'extras' the private hospitals in those provinces were soon providing a *de facto* second tier of private Medicare with enhanced amenities and reduced waiting time, subsidized by the province.

Even with the restoration of previous federal funding and the development of a reasonable escalation clause for the federal funds, the federal government did not feel it had either the political or the legal capacity to do anything much other than 'jawbone' about the privatization of hospital

care and the development of a second tier, especially when the reelection of the privatizing government in Alberta showed that the discontent with the private hospital policy, while substantial, was not substantial enough to deny the provincial government a majority.

With advertising, financed 'research' and other tools, the population in the Western provinces was gradually becoming less opposed to the idea of private hospitals. The election of new governments in Manitoba and Saskatchewan saw private hospitals introduced in those provinces, and this consisted for the first time 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 in health transfers to the provinces. Effectively, the federal government 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. The role of the federal government 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 AFTA (since not doing so would have led to very 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 major economies such as Brazil, Chile and Argentina. Since both Canada and the US were very 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 purpose for the AFTA contained language about the purpose being to expand and enhance 'free markets' and so on, as did other sections. 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 the friction with respect to Medicare, protection of general population health remained an area marked by excellent continuing federal-provincial cooperation.

The *Medicus* one family

Galen: The University that employs Galen provides a good employee benefit package. Galen and his second family are members of the now privatized Toronto University Hospitals Health Maintenance Organization; his employer pays half of his premiums. The family is assigned a primary care physician who is their main point of entry.

Galen has periodic detailed executive physical examinations, during one of which it is found that he has an enlargement of the lymph glands. Galen undergoes an immediate CT scan, followed by a biopsy of the enlarged lymph gland the next day. These are both performed at an outpatient clinic located conveniently in Galen's University. The results indicate malignant lymphoma. Galen receives three rounds of radiation and targeted (to only affect cancerous cells) chemotherapy. Time from diagnosis to treatment is less than two weeks. The treatment lasts three months and there are only mild side effects. Biopsy results indicate complete remission; Galen will be monitored every three months for the next two years.

Hera: New tests are available for genetic markers for breast cancer. Hera takes the test, which is offered by the Toronto University Hospitals Health Maintenance Organization, but not by the public sector. Unfortunately, the test finds positive genetic markers and it is determined that she has a sixty percent chance of developing breast cancer before the age of 55. Consequently, she is now having a mammogram every three months. So far the results are clear. She is considering taking a new preventive drug, but is unclear as to its long-term side effects. The drug, although expensive, will be provided by Galen's plan.

Although Galen and Hera are not aware of their HMOs calculations, the HMO has determined that a high level of preventive intervention in this particular disease will save money. On the other hand, new genetic therapies for the underlying cause of Hera's high probability of breast cancer are now being used in the United States, reportedly with some success and few side effects. However these

treatments are extremely expensive and are *not* available through Galen's plan.

Eve: Eve has had consistent care first from an IHMO pediatrician, and now from the family physician to which they have been assigned. Eve does not like the new physician or the nurse practitioner she usually sees, and they do not get to know her well enough to spot her bulimia, beyond noting that she is underweight. Consequently she is not receiving any treatment.

Adam: Breaks his front teeth when a puck hits him full in the mouth during a hockey game. Upon phoning their IHMO for instructions, they find that their dental coverage does not include injuries occurring during sports. After a few days the family takes Adam to a dentist who specializes in restorative work, which they pay for out-of-pocket at considerable expense. They contact the coach to find out why Adam was not wearing protective equipment, but get no satisfactory answers.

The Medicusone grandparents

The grandparents are spending an increasing portion of their income on membership in a high-end private sector IHMO that specializes in care for the independent elderly. Despite favoured tax treatment, and their high income, their rapidly rising premiums are a constant worry as they are concerned that the cost may become prohibitive, even for them, in the next several years. While private sector health providers must publish schedules and accept anyone who can pay, they are under no obligation to maintain their schedules at any specific rate and have a record of substantial annual increases.

Harvey/Grandfather: Harvey's prostate condition continues to be monitored, with very little change evident. His hearing continues to deteriorate. While this hearing loss cannot be corrected with even the most sophisticated hearing aids, there are new implantable devices available that will correct Harvey's hearing, but these are very expensive and are not supplied even by his IHMO. Harvey decides not to acquire the devices.

Francis/Grandmother: Has fractured her hip at an exercise class and received a new biomaterial hip replacement within thirty days of the injury. Her recovery was aided by home care nursing services. All of these services were provided through their IHMO, which specializes in exactly these kinds of situations.

The Medicus two family

Florence: Florence has no health benefits and cannot afford private insurance. She must rely on the public system. Florence's hypertension is being treated with drugs, for which she must pay. Florence is enrolled in a public community health center, but due to constant staff change they have not been able to provide a consistent physician for Florence. She does have a continuous relationship with the nurse practitioner. However, Florence gets no treatment for her chronic depression, which has never been diagnosed.

Marie: Marie is a member of Galen's health plan as long as she is under twenty-five and a full-time student. Marie discovers that she is pregnant and decides that she cannot have a child at this time, both for economic reasons and because she is not sure she is committed to her current relationship. She is embarrassed and uncertain about using her father's health service for a termination and so goes to a public clinic. She eventually does obtain an abortion without any complications, except that she has to wait four and a half weeks, which is a very anxious time for her.

III. SHARED GOVERNANCE

"Improving everyone's health is everyone's responsibility."

The story

After long and difficult negotiations, spurred on by the failure of the WTO and continuing instability in world financial markets, a number of democratic international organizations were developed for the promotion of labour standards, the improvement of the environment, the regulation of international capital, and 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.

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 increasing stress on resolving long standing social and economic problems. In the United States, truly universal health care for children is finally introduced in 2005 and substantial improvements made in Medicare for the poor and the elderly. By early in 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 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 preserve universal Medicare and ensure that health services meet the needs of the 'average' Canadian. A new federal-provincial agreement is struck to include long-term care and home care fully in the Medicare system. A new federal-provincial financing formula is designed that includes increased 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, focused 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 a capitation formula, with bonuses based upon specific outcome metrics.

In nearly all regional health authorities, senior staff, usually from the nursing profession,

has been designated as case managers, assisting patients through the health system, providing effective follow-through and managing the distribution of information. The result is a dramatic improvement in the effective utilization of resources and a substantial improvement in patient satisfaction. The nursing profession overall is gaining a 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, physician and allied professions are now taking a much stronger interest in improving health status in the population. Through cooperative initiatives, innovative programs to address life style issues and attempts to deal with socio-economic 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 are attempting to find new and creative approaches to these issues.

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, to pharmaceuticals, and to preventive dentistry.

Health policy in the Shared Governance (SG) future of 2015 is characterized by a fundamental commitment to improving population health status. Health care and the socio-economic 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. The issues of 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, but there is, of course, still demand for public funds that outstrips its availability, as always. Financial constraints on the public sector are still very real in 2015. Due to the increase in very expensive health interventions, 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. These difficult issues of resource allocation – deciding what services/treatments will be covered under the public health system – 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, 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, or temporary decision making paralysis.

For the very wealthy, the United States health system remains a ‘safety valve.’ Canadians who are not willing to accept the standards and conditions of the Canadian system, or who want to access very high end services not available in Canada, do cross the border and pay directly for health care services, but this remains a tiny 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, and 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

developments 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. Mainly senior nurses are 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 has also increased the efficiency with which patients maneuver their way through the system.

Delivery points are heterogeneous and as convenient as possible: primary care physician offices, clinics, and larger, acute care-based institutions. There is also a full spectrum of electronic delivery channels: internet-based access, telephone triage, sophisticated diagnostic terminals located in heavy traffic areas.

Financing and payment structures

Provincial governments fund regional 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 socio-economic factors. Regional authorities are usually integrated health and social service providers. Staff, including health care professionals, is 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 learning about what works in other areas, and the ability to carry out experiments as a result of decentralization, there is constant improvement and refinement of financing formulas and budgeting practices. Evidence is routinely used as the basis for policy making.

Over all, expenditure levels are well under control as they are managed through a single payer. Total health care expenditures are about 11 percent of GDP, at the higher end of the OECD average, and up about 2 percentage points from the turn of the century, but far below the percentage of GDP in the United States. The increase in spending as a percent 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.

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. This has reduced demand for the more expensive and less effective delivery mechanisms such as emergency rooms. Walk-in clinics, where patients establish no 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 case load; this has also improved health professionals job satisfaction – although, of course, everyone still wants higher pay. In general, the perceived improvement in quality has more than compensated for the ‘rationing’

that is now officially acknowledged for high-end procedures.

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 administrators and health care professionals. The emphasis is on a combination of evidence-based evaluations as well as satisfaction levels. By 2015, regional health authorities are very focused on increasing population health status and have become effective lobbyists for actions to improve population health.

Technology and health care

Information technology has linked all networks together. The IT infrastructure allows for access to health care information and services through a wide variety of venues. Patient health records are transferable between all providers and individuals are able to access their health records and authorize access to them to the fullest range of health care professionals and institutions. Health care information – disease state information, rudimentary diagnosis and treatment, and triage information – is available from a variety of sources: telephone triage with internet-based sites, sophisticated diagnostic machines (the next generation of ATMs) and terminals at strategic locations; for example, all clinics, libraries, shopping centres, schools, businesses.

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 double-digit levels of the previous century. An important shift has been 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.

Leading-edge developments are occurring in areas such as genetics, nano-technology, xeno-transplants and implantable devices, but these are taking place mainly in the big labs in major universities and 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. There are assessment programs and ethical codes established to govern diffusion of these technologies. It is not easy for even a very wealthy person 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 globe to focus on particular fields of research. Even work-in-progress is often 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 socio-economic linkages to health status is also thriving. Canada has become a leader in research on women's health status, 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 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 not being contested by any governments. All 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 very 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, Health Evaluation Council. The Council 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.

The *Medicus* one family

Galen and his entire second family are members of the public, non-profit Central Toronto Integrated Health Network.

Galen: Each member is able to access their records and receive a wide variety of health information, social program information, and diagnosis through various outlets (retinal scans are used for ID). The family long ago selected a 'family care team' from the Network, including a physician, a nurse practitioner, a case manager and others who work as team.

Galen has periodic examinations and one of these examinations reveals an enlargement of his lymph glands. Galen undergoes a CT scan, followed by biopsy of the enlarged lymph gland all within two days. These are both performed at an outpatient clinic of the Network. The results indicate malignant lymphoma. Galen receives the same treatment as he would have had in the Global Club scenario with the same result: a complete remission.

His Case Manager monitors Galen throughout this treatment and ensures that Galen attends all medical appointments, understands all the treatments, takes medications appropriately, and is attended to at home when family members are unable to help. The Case Manager also provides advice and assistance to the other members of the family who need some explanation of Galen's condition.

Hera: New tests are available through the Network for genetic markers for breast cancer. Hera takes the test and finds positive genetic markers. Consequently, it is determined that she has a sixty percent chance of developing breast cancer before the age of 55. She is now constantly monitored and has a mammogram every three months. So far the results are clear.

Hera discusses her alternatives with her case manager, and she begins a new genetic therapy for the underlying condition. The genetic treatment, while expensive, is not priced out of the public market, because its developer was a university-private sector partnership with a combined social and commercial mission, with a

'cost-plus' price strategy. As well, Hera's Case Manager provides her with extensive materials, dietary and exercise information and arranges services with a psychologist. Finally, they review when and how genetic counseling should be provided for the children.

Eve: Eve suffers from an eating disorder and is bulimic. However, as her nurse practitioner has known her since she was a child, she has spotted the possibility of an eating disorder. At Eve's request, her parents have not been informed. The Case Manager and Eve have worked out a plan, where Eve has regular visits with a therapist, ostensibly for anxiety. Eve is taking a new medication, reputed to be helpful for eating disorders, and her condition is being closely monitored.

Adam: Breaks his front teeth when a puck hits him full in the mouth during a hockey game. His coach immediately drives him to the Central Toronto Integrated Health Network where a nurse sees him and sends him to the emergency dentist serving three Toronto area health networks. He receives temporary caps that night and a few days later is fitted with permanent caps. The Regional Health Authority investigates the lack of protective gear and his coach is required to go to a training course, since it is found that he has not been requiring the kids he was supervising to wear face guards at all times.

The *Medicus* one grandparents

The grandparents are members of the same health network as their son.

Harvey/Grandfather: Continues to be monitored for his prostate condition. His options and choices are carefully explained. His hearing continues to deteriorate. While implantable devices are available for his condition, the Network does not supply these, as they are extremely expensive. The decision not to purchase this particular product was made according to well-understood and accepted criteria. There are worked-out protocols for this situation according to which Harvey may purchase these devices privately and they will then be implanted and monitored by the Network. However the cost for Harvey would be very high:

more than two year's income. His Case manager helps him understand the alternatives and after careful consideration, Harvey comes to the conclusion that it is not worth it to him.

Frances/Grandmother: Same treatment for fractured hip as in the Global Club scenario.

The *Medicus* two family

Both Florence and Marie are *both* members of the East Toronto Integrated Health Network.

Florence: Her hypertension is being treated with medication, which is provided free of charge. Florence has had consistent care from a nurse practitioner for many years and has developed a friendship with her, and she has found it possible to talk about her depression and anxiety. She is now receiving an effective drug therapy and is feeling much better and is better able to cope with her life.

Marie: Marie discovers that she is pregnant and decides that she cannot have a child at this time. She discusses the situation with her Case Manager and is immediately referred for an abortion, which is performed within the week.

IV. 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' in the 20th century sense any more), 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 effectively taxed.

In addition to their inability to finance universal Medicare, Canadian governments also found it impossible to find ways to adapt their

systems to 'cybermedicine' – 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. 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.

Very few people have work-place benefits and insurance is prohibitively expensive since insurance companies cannot manage the risks. Consequently, only those at the very highest income levels are able to afford insurance and are able to access the best health services available. Middle-income groups rely on a hodge podge 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 – this makes it almost impossible to decide on any rational basis between 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, and governments cannot get organized to respond, regardless of what people want.

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. Although little understood at the time, this was but a 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. They have been unable to contain the growth of non-branded pharmaceuticals '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 Russia and China (and, in North America, in Cuba, which has become the 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.

By 2010 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 under-mining of any regulatory roles, the federal government no longer has a meaningful role. 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. 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 extremely 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 particularly important policy vehicles.

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 continual 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 a health care system.

Delivery systems: Organization

There is no organized health care delivery 'system.' Almost all delivery outlets are independent private 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 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 between 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 extremely expensive and are used only by an exclusive elite.

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 do not have any job benefits at all. Private insurance is prohibitively expensive.

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 standards.

The over all 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 of health care, and the 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 is also even more unreliable. At the elite level, the health networks serving the wealthy do provide leading-edge technologies and treatments. But this serves an extremely thin slice of the population.

Information technology is the dominant delivery medium for health care goods and services. Pharmaceutical companies, medical device companies, 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 has strong credentials (from Humanacana to the Mayo Clinic) have been bought, sold and merged so often as to be unrecognizable or have simply ceased to exist. Nevertheless, for the wealthy, there are clinics applying claimed technology to supposedly miraculous ends, including even tangible life extension. There are also unverified stories about new super-designer babies, paid for by the new cyber-elite who are especially prone to search for technological solutions.

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 that is 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 – 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 a general background 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 decade of 2000 was undermined by the increasing use of the Internet and telephone technology for the delivery of health care services. The provinces simply could not find a way to respond within the framework of universal medicare. Allowing physicians to bill for telephone calls was simply 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, again provinces could not find a way to respond effectively, with competing centres being established in several hospitals, none of which would have the volume necessary to compete effectively with US providers, and a reluctance to pay for the equipment and accept the role of being simply the observer and care giver also complicating matters.

On top of this, the ability of governments to tax income or consumption began swiftly to erode once Internet-based purchases passed 50 percent of all consumption, causing massive breakdowns in the 'bricks and mortars' world and a 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 level tax rates down to those of the US became more and more intense. Businesses found it so easy to move their headquarters 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 focused 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, mission statement and embassies. Provincial governments have only the ability to provide rudimentary law and order and basic public services, along with a little assistance for some charitable health services.

While many Canadians 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.

The Medicus one family

Galen: Galen Medicus and his family have learned the basics of self-diagnosis and self-reliance with respect to health care services. Unable to afford a health insurance plan, the Medicus family purchases health care services when absolutely essential. Family members 'visit' Internet-based deliverers, and use face-to-face clinics only when there are no other options. They have purchased a whole range of standard diagnostic equipment, which they use when calling up an Internet service. They have even learned to take their own blood with handy home kits, with the samples then couriered to the lab and diagnostic information sent back in twenty-four hours, in plain language.

Despite this extensive home testing capacity, Galen is entirely unaware of his malignant lymphoma. While he is exhausted all the time, and continually ill with flu-like symptoms, he continues to 'treat' himself with flu-related products. After enduring these conditions for over 6 months, Galen suffers a debilitating infection accompanied by severe temperature, inability to function physically and extreme bloating. Finally the family decides to take Galen to a medical clinic/hospital where he is diagnosed as suffering from end-stage lymphoma. He dies in the hospital within 2 weeks of admittance.

Hera: Given the family history of breast cancer, Hera is extremely well educated about breast cancer. She regularly checks herself. So far she feels fine. She is taking a preventive medication which she researched and obtained over the Internet and which she believes to be a scientifically tested medication. She is aware of the possibility of testing for genetic markers of a tendency towards breast cancer, but the test is expensive and she does not feel that there is much more she can do about it even if she finds

she has the marker, so she has not yet had herself tested.

Eve: Eve is unaware that she suffers from an eating disorder. She thinks she looks fat. Her parents think her obsession with her weight and with food is just a symptom of being a young adolescent girl and she will soon grow out of it.

Adam: Breaks his front teeth when a puck hits him full in the mouth during a hockey game. He suffers for a few days before the family finally finds a dentist they think they can trust to do a good job of restorative dentistry for a reasonable price. The work is done, at considerable expense to the family, but the next year Adam begins to have pain with the teeth. His family takes him to another dentist where it is found that the first dentist did inadequate work. The teeth will be lost. New prosthetic implantable teeth are available, but they will cost a very large amount. On the other hand, they can do a standard bridge at much less cost. Given his father's illness, which has just become known, the family decides that all they can afford is the bridge. They investigate suing the first dentist, but decide not to when they realize how difficult it would be to win and when the lawyer will only do it for a 75 percent contingency fee, with 100 percent of all funds below \$10,000. Nobody thinks of talking to the coach.

The Medicus one grandparents

Harvey/Grandfather: The elder Medicus family belongs to a health insurance plan. The plan has significant deductibles, but it does cover most catastrophic costs. The payments for the plan cost about 25 percent of their total net income, and the payments keep rising. As well, there is no prohibition on the insurance company raising rates for higher risk individuals and now that Harvey has been diagnosed with prostate cancer, he is concerned that the premium will become astronomical. As a result, he opts for more radical treatment of the prostate condition and surgery is performed along with radiation. The surgery seems to be successful in regard to the cancer, but it leaves Harvey with a severe urinary problem and his mobility is now restricted. His hearing continues to deteriorate and he finds a number of 'alternatives' treatments

over the Internet. He tries a succession of these alternatives, but so far they have only cost him money, while doing nothing for his hearing.

Frances/Grandmother: She has fractured her hip at an exercise class. She has a standard titanium hip replacement. This is paid for by their insurance plan, but there is a big deductible.

The Medicus two family

Florence: Self diagnoses and self treats her hypertension with drugs obtained over the Internet. So far the treatments seem to be working. Florence does not recognize her own depression, which she sees as simply reflecting the state of her life, and so does not seek or expect treatment.

Marie: Marie discovers that she is pregnant and decides that she cannot have a child at this time. She obtains an immediate abortion on credit from an integrated financial-health clinic and must repay the loan at prime plus ten points, putting her into severe financial strain. She does not feel she can ask her father for the money as she is not close to him, and she knows her mother does not have any money. Her grandparents would want to know the purpose for the money and would likely disapprove, or so she believes. She considers dropping out of graduate school to work and pay off the loan immediately, but then all her student loans would also become due and start piling up interest.

V. REGIONAL DOMINATORS

"A healthy nation is a strong nation"

The story

The prolonged recession, beginning with the collapse of the Internet bubble and a calamitous drop in the United States dollar, resulted in the election of a protectionist, nationalist President and Congress in the United States. The escalation of the Chinese-Taiwan situation, and the reemergence of Russia (once again federated with Ukraine and Byollerus) as an international military power, since its reorganization 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 twentieth century, to the reassertion of geo-politics and naked power in the first decades of the twenty-first century. Small nations, such as 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 geo-political might of the democracies, as it is as much a part of the reigning ideas of the time as any other nation.

To help address the continuing imbalance in trade with the United States, Congress has required Canada to agree to trade pacts that permit United States' health care corporations to compete on equal terms and conditions in Canada. Congress has also 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 health corporations dominate the second, private tier.

In the Regional Dominators world, however, the state remains an effective player, and the corporate sector is expected 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 it 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 increasingly oriented towards military purposes and financed by the state, sometimes in state-lead 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. There is also a strong trend towards applied, rather than basic research.

Like every country, Canada over all is very concerned about the healthfulness of the population, not least for military reasons. There are a lot of lifestyle kinds of programs aimed at keeping people healthy. Prevention, safety and so on are stressed 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 invoke the needs of the nation to overcome provincial resistance. The system of transfers to the provinces has been strengthened and overall harmony reigns between governments, as provinces accept their roles 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 America's 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 defense and the continuing concern of the United States to improve its balance of trade. Canada is the third most important member of the alliance, after the United States and Brazil, and has substantial influence in the councils of the alliance.

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 through privately purchased insurance. There are important 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 the Eastern provinces.

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 the most conservative politicians supporting programs for the 'people.' In fact, as in the pre-Second World War period, the politicians who are most right wing are not particularly market oriented and often sound like left wing politicians in adopting populist issues.

As a consequence, even in the United States, programs are now in place to ensure at least basic health care services are available to everyone. In keeping with this philosophy, Canada has strengthened its publicly available health services, which, if not as luxurious as the upper, private tier and even if occasionally not able to offer the very 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 lead to acute labour shortages in some areas, including the military. Coupled with the 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.

With the demand for human resources due to continuous full employment (resulting from

military build-up), there are also real efforts to improve not just health status, but also education and training for the marginalized components of the population; for example, there are improvements in the health status of Canadian Aboriginals. The important outcome has been a shortening of the overall 'health' gap between rich and poor.

Delivery system: Organization

Large United States firms with a few smaller Canadian competitors provide a full-fledged private tier, often with well-integrated services across a full range of benefits.

Aside from the private tier, there also remains a public tier, which is used by many Canadians, especially in the East. The New Canada Health Act (2010) requires provinces to maintain a health system that is free of charge to residents and that provides a comprehensive range of health services. In all provinces, the publicly funded health systems are organized into regional authorities that are responsible for the day-to-day operation of the system. The regional authorities must compensate the private tier for its services, on the basis of the costs for comparable services in the public sector. These arrangements mean that there is constant tension between the private and public tiers, and a great deal of confusion and difficulty in the interface between the systems. The regional health authorities must 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 has attracted more people into the profession. Despite efforts, hospitals have not been able to contain costs by using less trained personnel, for the simple reason that few are available. Rather, hospitals and regional health authorities have had to turn to technology to try and find 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

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. Basically, 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 15 percent of GDP; approximately 65 percent of total health care is paid by the private sector, and 35 percent by the public sector. There is much discussion and debate about the escalating total health care expenditure, 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

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

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 strong mainstream political support for the public 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 public system as part of their election campaigns – and the system has gradually expanded to include long term care, home care, pharmaceuticals and, in some provinces, dentistry, albeit in physical surroundings and with amenities which are not to the standards of the private sector.

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 has also developed 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 specialized in delivering one type of procedure, performing tens of thousands of procedures a 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 prosthesis 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 funding coming through the military. The result is an orientation of research towards areas of special military interest, such as chemical and biological warfare, prosthesis, remote sensing, spinal cord repair and brain research. Research is hampered both by the secrecy inherent in military-funded work and by the bureaucratic 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 America's 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 the 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 and 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

Everything changed when the US economy 'tanked' almost over night. 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 to maintain the kinds of standards that Canadians expected. 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 allowed private facilities and all sorts of 'extra billing' to proliferate, on the (mistaken) grounds that it would relieve pressure in the public sector. All that this did was drag even more costs into the health sector, but those costs did not have to be paid for through taxes.

Then, with the Taiwan crisis and the reemergence of Russia as a military power, the elections in the US in 2008 and the beginning of rapid remilitarization, everything changed once again. Suddenly, the state 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 America's 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 in view of the new threat to world peace.

The New Canada Health Act of 2010 was a response to this crisis, capping two years of reasonably harmonious, and very rigorous, federal-provincial planning. In a successful political compromise, the New Canada Health Act recognized the existing and now established role of the private sector in the delivery of health care services, but it at the same time expanded the coverage of the public system to pharmaceuticals and to home care and long-term care. Of course, many of the provinces had already included both of these areas of health care in their plans to some extent, but this was seen by the population as a reasonable compromise preserving and even expanding 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 much more active in areas of population health, from

the regulation of food and water safety to the anti-tobacco effort and the attempt to promote healthy lifestyles. All of this was accompanied by a strong dose of nationalism and flag waving.

The Medicus one family

Galen: The Medicus family is a member of the Best Health Network, a private sector network paid for half by the University for which Galen works. They have a mid-level plan that offers them many extras, including dentistry, but not the super luxury that the highest level plans provide. They do not have an assigned case manager and do not have a long-standing relationship with a specific physician or nurse practitioner, as the Best Health Network relies extensively upon Internet based triage for its point of entry. The Best Health Network only contracts with employers who supply all their employees with broadband up-to-date Internet access.

Galen is troubled by his continued exhaustion. Despite the relative ease of going into the Best Health Network Internet site and seeing if he needs help, he keeps putting it off, thinking it is just because he has been working too hard and not sleeping well. Finally, after about three months he visits the Best Health Network Internet physician site.

After providing his symptoms on a generic form on the site, he is taken through a sequence of detailed questionnaires and he is finally asked to phone the Best Health Network immediately on their 24/7 hot line. When Galen phones his call is routed to a senior nurse on duty. Galen's file is sent to her screen and she sees that he is required to come in for an immediate biopsy. She reassures him that it is probably nothing at all, but that they want him to come in first thing tomorrow 'just in case.' Unfortunately the biopsy reveals mid-stage lymphoma. After radical chemotherapy, Galen does not improve. His condition deteriorates. He survives for one year and then dies. While the family is allowed to remain members of Best Health, they have to downgrade their plan to the most basic service level.

Hera: Given the family history of breast cancer, Hera is regularly monitored. So far she feels fine. The genetic screens for breast cancer have not been developed in this scenario, nor have the genetic treatments.

Eve: Eve is unaware that she suffers from an eating disorder and does not seek help. However, she uses the Best Health Network site to look for advice on how to loose weight. The Best Health site automatically matches questions of this kind with a profile of the user (which they maintain as part of their medical records). The records are point scored according to a set of established criteria, including factors such as Eve's age, sex, her body mass index and so on. The test scores raise a 'red flag,' indicating the need for review and a report is automatically sent to a trained nurse practitioner. After personally reviewing Eve's file, the nurse practitioner sends the file and a message to a trained intake worker, asking her to phone Eve to see if Eve will come in for an interview. The phone call is done very sensitively and Eve does come in. She is diagnosed as having an eating disorder and a therapy is initiated, including both drugs and counseling.

Adam: Breaks his front teeth when a puck hits him full in the mouth during a hockey game. He is immediately sent to the Best Health dental center where he is given temporary caps, and later fitted with permanent caps. There is a large deductible for this service, which the family must pay.

The Medicus one grandparents

The grandparents are members of Superhealth, an upper end private health care deliverer. They are spending a sizable proportion of their incomes for the coverage and it is not clear that they will be able to keep paying. However, it will not be easy for them now to get coverage from another private sector provider. Rightly or wrongly, they are worried that their coverage in the public sector will be inadequate.

Harvey/Grandfather: Harvey decides to undergo surgery before his prostate condition deteriorates, while he still has coverage with Superhealth. Their coverage allows Harvey to choose surgery even though he is counseled to

wait — which is one of the reasons Superhealth is so expensive. A team in Austin, Texas who perform dozens of this operation every day, does the surgery remotely. There are no complications, but he still must be monitored continually for recurrence.

In this scenario there are no devices that could help correct Harvey's hearing loss.

Francis/Grandmother: Has fractured her hip at an exercise class. Superhealth replaces the hip with the latest device, and follows up with rehabilitation. Francis' friend who broke her hip a year earlier had to wait six months to get a hip replacement from the public system, while Francis had only to wait one month.

The Medicus two family

Florence: A doctor with the local regional health authority treats her for hypertension. Since she has inconsistent providers, Florence's depression is not recognized and not treated.

Marie: Marie discovers that she is pregnant and decides that she cannot have a child at this time. Although Susan is a member of Best Health through her father, she obtains an abortion through her local health authority but must wait for three anxious weeks.

VI. CONCLUSION

This imaginary and speculative review 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, it 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 small

nation living side-by-side with a very big nation – we are not in 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 institution, Canada should be in the forefront of nations seeking to establish such multilateral trade agreements based on principles of fairness and equity.

- Information technology has astonishing potential to influence the future of health care. Indeed, 'information technology' may be 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, 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. This is not a problem of technology; it is an administrative and policy challenge.

- The 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?

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 remain vested at their level. Canada 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, the 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 nevertheless means very high prices for new products. The implications for paying for the products should be considered when medical research funding policy is discussed.
- 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 all 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 being protected. What is not clear is whether this would be very positive and should be encouraged – 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.

Doubtless there are many other policy observations that can emerge with further debate about these or other scenarios. Even a discussion of the poor, blighted Medicus family and the likelihood of their various experiences under each of the scenarios may reveal policy issues that warrant consideration. It is our hope that this paper may contribute a useful framework for such discussion.