

PUBLIC POLICY FORUM

ROUNDTABLE ON CANADA'S KNOWLEDGE ECONOMY: NEW MODELS FOR HEALTH INNOVATION

**CHATEAU CARTIER RESORT
AYLMER, QUEBEC
AUGUST 27, 2002**

THE VIEWS FROM LEADERS

The **Public Policy Forum** (PPF) is a non-profit, non-partisan organization aimed at improving the quality of government in Canada through better dialogue amongst government, the private and third sectors. The Forum's members, drawn from businesses, federal and provincial governments, the voluntary sector and the labour movement, share a common belief that an efficient and effective public service is a key element in ensuring our quality of life and global competitive position. Established in 1987, the Public Policy Forum has gained a reputation as a trusted, neutral facilitator, capable of bringing together a wide range of stakeholders in productive dialogue. Its research provides a neutral base to inform collective decision-making.



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“The empires of the future will be empires of the mind.”
– Sir Winston Churchill

“Health care innovation will be the empire for Canadian minds to create a brighter economic future and greater prosperity for Canada.”
– Dr. Henry Friesen, Chair, Genome Canada

BACKGROUND

The issue that is raised most often in debates concerning the sustainability of Canada’s health care system is how to maintain or increase its financial resources. Suggestions abound concerning means of saving money through efficiency measures, or of finding new sources of funding from governments through taxes, or from individual Canadians through user-fees, for example. Over the past year, however, a group of leaders from various interested sectors have been discussing and developing the concept that providing better opportunities for Canadian innovations in health could contribute significantly to the Canadian economy and, by extension, to supporting the Canadian health care system. (Appendix A – History of Project)

In the spring of 2002, this group of leaders asked the Public Policy Forum to design and organize a one-day conference that would bring together a national cross-section of the most senior and influential decision-makers, including: executives from the life science, investment and information industry sectors; politicians, officials, committee members and advisors with key roles in provincial and federal health and economic matters; and leaders of the academic health research and health care sectors and granting councils. The intent was to present and discuss three proposals that would support the general proposition that the “health and health care sector should be viewed, not as a cost to be endured, but as an opportunity to be explored...”

On August 27, 2002, over 100 leaders (Appendix B – Participant List) met in Aylmer, Quebec, to provide their reflections, suggestions and concerns in reaction to the proposals that had been offered in a discussion paper entitled “New Models for Investing in Innovation in Health” (Appendix C – Discussion Paper). After presentations on each of the proposals, the participants were divided into workshops to answer three questions related to the general proposition and to one of the three specific proposals:

- 1) What are your reactions (benefits and challenges) to the general proposition that health innovation could be an engine of economic growth?
- 2) How would you want to design, shape, influence or support [this specific] proposal?
- 3) Who has to do what to make [this specific] proposal happen?



The participants then returned to plenary to report on their workshop reflections and to participate in a general discussion on next steps that might be taken to advance the proposals.

The following is a summary of the key points from the presentations, key findings from the workshops and suggestions for further study or action relating to the general proposition and to each of the supporting proposals. (Appendix D – Presentations)

THE PROPOSALS

I. General Proposition

“The health and health care sector should be viewed, not as a cost to be endured, but as an opportunity to be explored, embracing a vision for Canada to create the most innovative, high quality health care system committed to continuous improvement. It should be the prime and prized example of innovation around the world. Implementing the vision of health care and health systems as an engine of economic growth will contribute greatly to a sustainable health care system.”
(Appendix C – Discussion Paper, p. 20)

Presentation

The presentation emphasized the estimated potential economic benefits of new models for investing in health innovation, including significant increased revenues from health-related research and from the development and global marketing of Canada’s health system expertise and products. The current parallel focus on both the health care and innovation agendas affords a short but unique window of opportunity to align the two agendas and to multiply the benefits to Canadians in the medium to long term.

A more innovative approach to health care and health research will foster better products and services for Canadians and for commercialization to external markets. Canada already has high calibre research facilities and much better use could be made of their expertise. In addition, Canada has the potential to develop and market its health systems expertise and products to a global market, with funds flowing back and helping to support the modernization of our health care system.

The presentation challenged the participants to consider the choice facing Canada: to modernize health care while ignoring the economic opportunities or to create unique Canadian economic opportunities through health innovation, thereby capturing a larger global market share in health products, services and management.



The presentation also indicated the requirements for success in advancing a health innovation agenda: shared vision; committed leadership from all related sectors; the expertise, imagination and courage to compete globally; and an ability to adapt values, traditions and structures to a new focus on health innovation as an important underpinning of a sustainable health care system.

Workshop Findings

Benefits

There was strong agreement among participants that innovation in health would improve health care in Canada and the business practices associated with it. Currently, the federal and provincial governments are struggling to find a solution for the health care funding and delivery crisis. Developing Canada's health care system into a driver of economic growth will help sustain and support Canada's public health care system. In addition, Canadian identity is closely associated with our health care system, and the participants believed that improvements to the health care system would contribute to nation building.

The participants recognized that there is tremendous opportunity in Canada's health sector that already exists in Canada. First, Canada should recognize and take advantage of the economic potential inherent in a health care sector that operates as a regulated monopoly. Bringing the existing systems and networks together will tap into the strengths that already exist, building critical mass to enhance health and economic capacity across regions and sectors. This would help retain key medical and scientific personnel in Canada, and create stronger areas of excellence. Co-operation among networks would encourage innovation while reducing duplication of efforts and costs.

Participants identified the need for major private investment to develop and market the products of health research and the health system on a national and global scale, thereby creating 80 to 100 thousand jobs and helping to reverse the \$8 billion deficit in this sector.

Finally, the branding of Canadian discoveries in health will generate better global recognition of the work being done in Canada, and help legitimize the private sector's involvement, as well as the investments being made by governments.

Challenges and Suggestions for Further Study and Action

Public perception was seen as one of the most important obstacles to the advancement of the concept of health innovation as an economic benefit to the forefront of Canada's political and fiscal agendas. It will be imperative to develop a powerful business case to persuade government



officials to pursue this idea, and government leadership – both political and bureaucratic – will be key to getting buy-in from the general public over time. Public education campaigns will also be beneficial in overcoming these obstacles and assuring Canadians that this initiative is not about privatized medicine but about capitalizing on health systems and research expertise for economic as well as health gains.

Strong strategic planning in the initial stages is crucial. Once the plan is set, a well-planned and delivered pilot would help demonstrate the premise behind health innovation. Those involved will encounter strong criticism, and will have to surmount ideological, jurisdictional and political hurdles. Champions should be identified from each of the sectors to disseminate a positive message and override this opposition.

The lack of communication among different sectors and networks will be a big challenge in establishing this new initiative. Since the concept of health innovation as a contributor to improved health care and economic growth is premised in large part on the sharing of ideas and information, a mechanism by which better communication can be established must be found.

All key stakeholders, including the public, provincial and federal governments, health institutions, academia and industry, must be at the table for this initiative to be successful. Currently, there is not adequate private sector investment in health research in Canada. Federal and provincial governments are battling over health care, rather than for health care. The view of health care as consumption only must change in all sectors, including the patient population, if Canada is to maintain an adequate level of publicly-funded service for all Canadians.

It was agreed that there is a strong focus on R&D in Canada, not enough priority has been given to market development. Therefore, a mechanism should be developed by which researchers, global entities and marketing organizations would be brought together to address market development. It was noted that the Canadian International Development Agency (CIDA) has facilitated exposure of engineering expertise and projects world-wide. There is an equal need but no mechanism in place to showcase and sell Canadian-developed health care products. This is critical for establishing global markets and elevating Canada's stature in health innovation.

Emphasis was also placed on the importance of rewarding entrepreneurship and innovation. Reward systems in the worlds of academia, policy, or health care are risk averse, and a change in mind-set in will be needed to encourage innovation. As an example, a health authority should be rewarded for a surplus gained through innovation.

Participants also discussed the importance of developing new metrics to measure outcomes of this new focus on health innovation; examples included measuring of health outcomes, job



creation, and exports to enable better reporting on the programs and policies created to support investments in innovation.

II. Specific Proposals

The three specific proposals were then considered by the participants. Each workshop discussed one proposal, and made suggestions on how to move forward with each idea. What follows is a summary of the presentations on each of the proposals and the workshop findings.

Proposal 1: Aligning the Health Innovation and the Economic Agendas

“Align the health innovation and economic policy agendas and decision-making within governments and health authorities to help optimize health, patient care and economic development.” (Appendix C – Discussion Paper, p. 22)

Presentation

Bridging the gap between health care and innovation will help to sustain Canada’s health care system. Two of Canada’s top priorities are to create an accessible, affordable health care system, and to converge public policies toward a national innovation agenda. Aligning health care reform and the innovation agenda would contribute to both goals.

Several important issues must be addressed, such as bringing value systems together among the various players; determining what are reasonable economic returns on investments in health innovation; and identifying what role innovation can play in supporting the global competitiveness of Canada in the health field.

The participants were asked to give thought to how to align the health and economic agendas among governments and agencies at all levels, the health and education institutions, the health industry, investors, the information and service industries, and Canadian citizens.

Workshop Findings and General Discussion

Participants strongly agreed that the federal government must take the lead in order to get the initiative under way. The involvement and co-ordination of all related federal government departments and agencies will be key to encouraging co-operation among provinces and other jurisdictions. One concrete suggestion was that the Prime Minister chair a First Ministers’ roundtable on investments in health innovation.



Prime ministerial leadership was also seen as mandatory to encouraging public acceptance of private sector involvement in health care for the purpose of developing and marketing our expertise and products globally. This will require an attitudinal shift that could be facilitated by a campaign to inform the public about the benefits of generating more investment from the private sector in health research, product development, health services, marketing and health care.

A high level vision is needed to guide this initiative to fruition; however, the participants also recommended that the initiative be attacked in “bite-size chunks,” both in terms of actual innovations in health care delivery, and in initiatives toward wealth creation. The participants noted that it was important to move forward on smaller initiatives guided by the larger vision to achieve some short-term successes as proof of concept.

A greater sense of entrepreneurship is fundamental to the success of this initiative, but participants felt that disincentives to innovation existed in both the policy and the health care systems. Participants recommended that thought be given to developing a change management process to encourage attitudinal change among all the related sectors and the general public.

Proposal 2: Managed Networks

“Invest in inclusive, integrated, well managed and powerful innovation networks for pace-setting critical mass in research linked to patient populations, innovation in care and initiatives for economic development.” (Appendix C – Discussion Paper, p. 25)

Presentation

Eighteen months ago, the Canada West Health Innovation Council, supported by Western Economic Diversification Canada and the Michael Smith Foundation for Health Research, was founded. It is mandated to resolve “how to best capture economic opportunities arising out of health research and health system innovation,” which it has done through extensive consultations with key stakeholders in the four Western provinces. A key outcome of the process was a clear consensus that the initiative needed to be national in scope through the development of a pan-Canadian council that would integrate the work of networks of similar nature across the country.

In Canada, there are currently a variety of networks operating regionally, provincially and nationally, supported by research bodies, hospitals, granting councils, governmental organizations and industries. Each has a limited scope and mandate, and the lack of inter-communication and cohesiveness thereby threatens their sustainability. A more structured



management of the various networks would allow new discoveries to be shared, reduce redundancy of work and research, and capture innovation for future commercialization.

Across Canada, important work being is done in health innovation. Through strategic planning and investment, some regions offer expertise in a specific area of health. A national network strategy to foster a regionalization of expertise would improve the scope and recognition of the work being done in different health areas. It was further suggested that expertise clusters be created in different regions across the country, building on existing strengths in different facets of health and health care delivery. The linkages created through a national network strategy would create value for all stakeholders including the patient population, health care providers and the research community. Concurrently, there would be greater potential for attracting investment from the private sector to support global competitiveness in the development and marketing of health research and health care expertise and products.

The participants were encouraged to consider how to break down barriers to the formation of networks, how to define and choose priority networks, and sources of funding for these networks.

Workshop Findings and General Discussion

Participants agreed that many “silos” existed in the health care field (e.g., federal-provincial-regional, intra and inter-university, and sectoral) and that more co-operation among players and networks would contribute significantly to improved health and health care, and create the opportunity for greater financial return on investments in health research and the health care system. However, they had differing views on how to proceed.

Some participants stated that an important first step was to focus on making existing models work better. They felt that it would be difficult to make the case for new superstructure networks when it could be shown that existing networks could be greatly improved. One concrete idea concerned the proliferation of scientific meetings held separately by each of the existing networks, such as Canadian Institutes of Health Research, Networks of Centres of Excellence, Genome Canada, etc. It was suggested that encouraging these organizations to hold their annual meetings all during the same week would be a simple way of encouraging much-needed communication among their many participants.

Other participants agreed that improving existing research networks was important, but believed that it was necessary to create “umbrella” networks which are envisioned as embracing activities beyond research, such as systems management, purchasing, and health products development. These organizations would oversee all health innovation in specific areas, from academic research to investment to bringing the product or service to the Canadian and global market.



These “super networks” should be goal-oriented to align all stakeholders; for example, a managed network could be created to focus on reducing cardiac disease, cancer or diabetes. It was understood that balance should be sought between inclusive patient-centred models and focused centres of excellence, and that existing models would not be forced to adhere to a new model. A shared vision and commitment of key stakeholders, the federal and provincial governments, industry and patients, would be needed to make the transition to a completely networked system.

It was proposed that, to make this idea work, the federal government would need to play a lead investment role, to demonstrate its commitment to this endeavour, and to entice other stakeholders to make a similar financial commitment. The funding for networks and investigators should be committed and sustained over the long-term, in increments of at least five years, in order to develop the stability to build a world-class industry. In addition, leaders or champions who are well regarded in the health sector must bring recognition and credibility to the concept of managed networks, be it for the overall idea or within specific networks.

There were also differing views on the goals for these managed networks. Some suggested that Canada identify and focus on areas in which it can become a world-leader. Others cautioned that in addition to economic returns, there had to be an emphasis on health outcomes.

Another participant pointed out that disincentives to collaboration among specialists from different areas also existed in the scientific area. For example, a scientist who undertook studies combining two different areas was less likely to be recognized for excellent work than a specialist in either area.

Finally, one participant encouraged colleagues to think about commercialization, industry, and products, not just about research. It was suggested that the word “collaboration” might be more useful than “networks” as the key word for Proposal 2.

Proposal 3: Integrated Investment, Taxation and Regulation

“Create an integrated investment and regulatory climate to attract new private sector investment into health research and infrastructure, to improve health services with cost savings to the Crown.” (Appendix C – Discussion Paper, p. 28)

Presentation

The Boston Consulting Group did a study that found that the current academic research and commercialization of health products in Canada are insufficient for sustained economic viability.



The health sector in Canada, as it is currently run, will not provide beneficial return if Canadians continue to be mere users of the system. More focus on research, patenting of discoveries, attracting better flows of investment to do more health research, and creating a better regulatory environment to enable innovations to enter the marketplace, are the premise behind this third proposal.

Canada offers an attractive environment for companies to conduct health care research. However, its current regulatory regime, with long approval processes (e.g. drug approval), does not lend itself well to developing Canada as a hotbed for health innovation. Canada has become the ‘farm team’ of discoveries, where ideas are generated but not developed into products. There needs to be a mechanism through which ideas can be developed through the commercialization stage. There is a social responsibility to patent discoveries and to commercialize ideas, for the improvement of the health system, the health of Canadians and the economic return they generate.

An improved, more innovation-oriented regulatory environment is needed in Canada. Provincial drug regulations need to be re-examined. Better drug approval times are needed – Canadian patients currently wait seven months longer than a patient in the United States to access new medicines. Finally, intellectual property protection and enforcement need to be at least on par with the United Kingdom and the United States.

By developing an environment that is more conducive to investment, research, approval and marketability, Canada will reap greater benefits from the health sector, an area in which it already has a stronghold. This will translate into an even better health care system for Canadians, an estimated 100,000 new jobs, new space and infrastructure that will largely be funded by the private sector, as well as well managed networks that will command the attention of researchers, investors, and partners world wide.

The regulatory environment applied to the oil and gas industry was cited as a model, as was the role that could be played by individuals and organizations investing in innovations were given.

The participants were encouraged to consider how the Canadian health care system might set the highest global standards for patient care, service, products and management while, at the same time, the regulatory environment encouraged the creation of networks that would become a magnet for industry, institutional partners and investors.

Workshop Findings and General Discussion

Private investment is key to supporting an innovative health environment in which research will flourish and the development and marketing of products and expertise is the norm. Tax



incentives, such as flow-through shares or individual R&D tax credits, would help attract investors to Canada. A parallel was drawn between means of attracting investments to the health sector and the recent investments in the movie and the oil and gas industries. The comparative advantage Canada offered through tax breaks in those industries helped bring investment and production to Canada, which has created significant economic growth. The participants believed that similar initiatives should be considered for health innovation.

There needs to be more emphasis on market development, without compromising R&D efforts. Discoveries must be fostered by a well-funded R&D system, and carried through to the commercialization stage, where Canada would truly reap the benefits of its research. Participants strongly agreed that industries play an important role, and that a communication strategy is needed to get industry leaders to the table.

Participants also agreed that Canada's regulatory process is inadequate to support growth and innovation. In the global market place, speed is of the essence: only the first developed idea can be patented and marketed globally. In the case of drug development, global co-ordination could improve the regulatory processes, contributing to more timely development and release of new products. In addition, patent protection needs strengthening.

STEPPING AHEAD – RECOMMENDATIONS FOR ACTION

“Canada will spend (invest) one trillion dollars in health and health care over the next ten years and has spent approximately seven hundred billion dollars in the last decade. For that 1.7 trillion dollar investment, how many Canadian health care products, services and knowledge management firms will be generated that will carry the Canadian brand and have global sales of 50 million dollars or more per year? If nothing changes, the likely number for the decade ahead will be very similar to the past decade, where the answer was almost zero.” (Appendix C – Discussion Document, p. 2)

Our health care system is hugely symbolic of what we are as Canadians, and one of our biggest comparative advantages as a country. While Canada has built a well-respected health care system, its record on developing health products for the market is slim. The example that is often cited is that “Canada's last health innovation was three-quarters of a century ago with the creation and commercialization of Pabulum.”



Key Outcomes

There was unanimous agreement on the part of participants that health innovation should be considered an engine of economic growth for Canada.

There was also general agreement that the three supporting proposals presented ideas that are essential for advancing the concept, but there was a need for greater clarity in the details.

There was also unanimous agreement for immediately striking a Task Force with the appropriate regional and national representation to move the agenda ahead.

Various suggestions were made as to what the next steps should be. From among these suggestions, the Public Policy Forum would make three recommendations as to the most important action steps to be taken in the immediate future.

1) Building a business case

The federal government is currently reviewing national health care as well as consulting on the innovation agenda, providing a unique opportunity for a melding of the two currently separate activities into an initiative advancing both health and health care innovation. An important first step in advancing this concept is to build a strong business case that supports what the participants at the conference intuitively felt made sense. A strong business case will not only help to attract the championship of key leaders from the public, private, and academic sectors, but will also provide a basis for the communication tools and initiatives that will be necessary to convince the Canadian public of the feasibility of a focus on health innovation as both an economic and social benefit.

The Public Policy Forum therefore recommends that thought be given by the sponsors of this conference to further developing the “potential success story” behind this concept, including required investments and expected returns, and measures of success – both financial and social. Thought should also be given to the investment environment, tax policies and regulatory changes that might be needed to support health innovation as a potential contributor to both improved health care and economic growth.

2) Defining the structure

There was general consensus that the network proposal requires better definition. A lot of time and care is required to build niches and select platforms from which to launch Canadian health innovation. However, the current models of health networks do not fully serve Canada’s goal of



becoming a world leader in health innovation. In particular, there is no existing structure that integrates academia, health care providers/institutions, the investment community and industry, players in the R&D and commercialization areas. Although improving the efficiency of the current local and regional networks is an important step, the Public Policy Forum believes that new comprehensive models for innovative networks are also needed to position Canada as a global pacesetter in health research, products, services, management and care.

The Public Policy Forum therefore recommends that a study be undertaken to better define the structure or structures that might be put in place to encourage more collaboration among all the players, including its mission and governance structure; roles to be played by governments, industry, research, health and education organizations; accountability; and representation.

3) Spreading the word and seeking collaboration

Participants and conference sponsors agreed that a ten-week turnaround is needed in order to take advantage of the momentum generated by the day-long roundtable discussions, and to build on the current health care reform and innovation agenda consultations taking place in fall 2002. A clear message must be sent from the group to the federal government stating that an integrated approach to health and innovation would foster economic growth. The mechanisms to achieve this initiative can be worked out once there is buy-in from all key stakeholders.

The Public Policy Forum therefore recommends that when the results of the above two proposed initiatives are available, the sponsors of the conference consider bringing key leaders from all interested sectors together at a second meeting to review the findings and seek consensus on concrete first steps. One of the key goals of this second meeting should be to ensure high-level, committed participation from leaders in industry and finance as well as the public, academic and research communities.



APPENDIX A**History of Project**

The evolution of the proposition and the background document describing it began with a consultation process and set of recommendations from a “Western Canadian Task Force on Health and Economic Development” chaired by Dr. Henry Friesen, Chair of Genome Canada, and commissioned by the Hon. Ron Duhamel, then Secretary of State for Western Economic Diversification Canada. These consultations, which took place in May and June of 2001, were designed to engage stakeholders in exploring ways of strengthening health research and commercialization opportunities in the four Provinces of Western Canada. As a result of these consultations, it became apparent that leading proponents of health innovation in Alberta, British Columbia, Manitoba and Saskatchewan were keen to collaborate to encourage the commercial development of health research and to apply research benefits within the system. Further, they envisaged a broader agenda, that there was also a major opportunity to pursue innovation within the health system as a cornerstone of economic development in Western Canada.

With the continuing support of Western Economic Diversification Canada, the Canada West Health Innovation Council (CWHIC) was created in August 2001 as the planning and organizational framework to move the agenda forward. Led by a steering committee chaired by Dr. Aubrey Tingle, President & CEO of the Michael Smith Foundation for Health Research, the Council began a strategic planning process to identify key areas of health research and health expertise within each province that could serve as a catalyst for economic development and innovation. These were envisaged as the hubs for inclusive Managed Networks that would link with expertise within other Provinces to achieve critical mass and a Pan-Western advantage in commercialization and the competition for national and global funding.

Placing the strategy within a national context was the logical next step. With the opportunity presented by the pending release of two major federal reports, the Romanow Report on Canada’s health system and the results of Industry Canada’s consultation on creating a national Innovation Agenda, CWHIC contracted with Public Policy Forum in the summer of 2002 to bring the discussion to the national stage. This report is the result: a distillation of the ideas and suggestions provided by more than 100 of Canada’s most influential leaders from all sectors on the need for, the benefits, and the challenges of aligning Canada’s health and economic agendas.



APPENDIX B

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Public Policy Forum



APPENDIX C

Discussion Paper

New Models for Investing in Innovation in Health

*A discussion paper for the Public Policy Forum roundtable
on August 27th, 2002*

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THE PROPOSITION TO BE DISCUSSED

The health and health care sector should be viewed, not as a cost to be endured, but as an opportunity to be explored, embracing a vision for Canada to create the most innovative, high quality health care system committed to continuous improvement. It should be the prime and prized example of innovation around the world. Implementing the vision of the Health Care and Health Systems as an engine of economic growth will contribute greatly to a sustainable health care system.

This Public Policy Forum workshop is to address this fundamental proposition as well as three subordinate proposals that bring together many complementary national and regional initiatives linking health innovation and economic development. Consultations suggest that the proposition and proposals tend to be well received by health professionals and federal, provincial, academic, industry and investment sector leaders seeking maximum cost-effectiveness for the entire health system. The challenge is to bring opinion leaders together to jointly shape the proposition into supportable sustainable public policies that have the support of all the key stakeholder groups.



Three supplementary proposals focus on:

1. *Merging the health innovation and economic public policy agendas and decision-making within governments and health authorities to help optimize patient care and economic development;*
2. *Investing in inclusive, powerful, well managed innovation networks for pace-setting critical mass in research linked to patients, innovation in care, and economic development; and,*
3. *Creating an integrated investment and regulatory climate that would attract tens of billions of new private sector investment into health research and infrastructure, and improve health services with cost savings to the Crown.*

Each of these proposals is outlined in this discussion paper. The proposals are clearly national in scope but emerged from a consultative process led by the Task Force on Health Research and Economic Development in Western Canada commissioned by the Secretary of State for Western Economic Diversification. The successor to the Task Force is the Canada West Health Innovation Council. Their proposals have been supplemented by information from related initiatives from across Canada to set a national context for discussion.

THE URGENCY OF THE DISCUSSION

Canada will spend (invest) one trillion dollars in health and health care over the next ten years and has spent approximately seven hundred billion dollars in the last decade. For that 1.7 trillion dollar investment, how many Canadian health care products, services and knowledge management firms will be generated that will carry the Canadian brand and have global sales of 50 million dollars or more per year? If nothing changes the likely number for the decade ahead will be very similar to the past decade, where the answer was almost zero. To the extent we have a handful of pharmaceuticals or biotechnology products with global markets, these have developed in university labs rather than as products of the health care system. The landscape is changing quickly. The “Romanow” Commission and other national and provincial reviews of the sustainability of the health care system and funding are creating parallel windows of opportunity to develop a national consensus about new models for investing in health innovation. Achieving a goal of a 10% economic development return nationally, it would generate in the order of 7 billion dollars per year – an amount almost 50% more than the last health accord signed a few years ago between the federal and provincial governments. This strategy deserves consideration because of the great promise it holds to enhance the sustainability of Canada’s health care systems, as well as providing Canadians with the most innovative cost effective health products and services. At the same time this strategy would generate high quality jobs for Canadians.



Extracting the lessons to be learned and linking them to our opportunities is a public policy challenge of the highest order. Governments and multi-national industries around the world are experimenting with new models that reflect their commitments to innovation, economic development in clusters, and building the knowledge base of human resources. The Government of Canada and many of the provinces are giving a new focus to innovation. An explosive growth in promising discoveries in regenerative medicine, disease prevention, diagnosis and therapies, and clinical informatics has the entire developed world searching for competitive advantage in clinical research, investment risk management, and public-private partnerships. Health regulators, insurers and industries face demographic growth in demand as well as unprecedented benefits, risks and costs to be managed. The Canadian public is nervous about the ability to access leading edge diagnostics, therapies, products, technologies and facilities within the public health system. The health professions and research sectors face very significant career planning risks. Canadian investors and their investment fund managers are seeking new opportunities to sustain and expand our sophisticated capital markets domestically and internationally – with little focus on the life sciences sector. The biggest barrier to progress may be no more than a lack of a shared information and understanding of the opportunities, and the challenges of co-operating when each constituency brings different values and historical bias to decision-making.

PROPOSAL # 1:

Merging the health innovation and economic public policy agendas and decision-making within governments and health authorities to help optimize patient care and economic development.

Canada's trade deficit in health products has grown in ten years from about \$2 billion to about \$8 billion. The unfortunate reality is that it is hard to identify even one or two products or services that carry a Canadian brand and have worldwide sales of \$50 million plus annually. Pharmaceutical products tend to originate within university labs rather than our health system, and those that do emerge tend to transfer as quickly as possible into trials, licensing or royalty arrangements in the USA – the cardiac pacemaker being just one example. The last great Canadian brand name product generated out of the health care institutions is Pablum, created in 1930. We can and should do better at identifying, developing and commercializing new health innovations within Canada to maximize return to the Canadian economy and the Canadian health care system. To do so will take a sea change in attitude and thinking.

Health informatics, the electronic storage, management and analysis of patient, disease, treatment and health care information, is a current example with great potential. The linking of patient files to cell, organ and tissue banks would identify biochemical, genetic and molecular profiles to improve medical decision-making and generate new knowledge of the underlying



causes of disease. The linking of the economic costs of health system inputs to outcomes would greatly improve system-wide decision-making. To succeed we must tackle health informatics in a coordinated fashion as part of an industrial strategy. To date the approach has largely been driven with a fragmented local/institutional perspective. No one group or network is likely to have the expertise or resources, or enough available information to make a significant advance. Our public health system could give us great advantages. If we get it right, the Canadian health care system would be the immediate beneficiary. Equally important, Canadian companies could compete for and capture a global market that is huge. Why can we not we engage the private sector in developing what could be the equivalent of the “Windows Operating System for Health Informatics”? Why can we not use our public sector investment to create a private and public sector health informatics initiative comparable to the space program? The challenges are huge, but so are the national and international opportunities.

Canadian health care institutions, and the health ministries that fund them, are traditionally not expected to report annually on innovative new products and services developed each year by their institutions and the sales figures for these products. Yet many have operating budgets in the order of \$1 billion. CEO’s of hospitals and health authorities may understand the potential of their institutions to generate knowledge and products of high value, but only very recently and by exception is this becoming part of the responsibilities for which they are held accountable by their boards, ministries and foundations.

Export and other sectors could provide excellent markets for our health care expertise. Canada and Canadians cherish their health care system and pride themselves on having an excellent one and we repeat the mantra that we are evermore in a knowledge-based economy. Is the bias against profits in the health sector actually forcing us to import products with profits going elsewhere? Why with our “know how” do we have so few knowledge management health care consulting/management/construction companies marketing our advice and skills, competing in the US for the forty billion dollars spent annually in this area? Canadian health professionals are so focused on treatment that they have difficulty sharing their expertise and know how in disease management studies, disease prevention, and health administration to benefit many countries, industry sectors, and other markets. Contrast this with the engineering fields where SNC Lavalin alone has over \$2 billion annual revenues and over \$4.0 billion in its project line up. Contrast this with the defense sector, where public sector investment is routinely expected to ensure “Canadian benefit”. Indeed, the growth and development of companies like Bombardier in the aerospace sector is a prime example where public investments over many years helped create an industrial sector with a global market. Contrast this with the telecommunications sector where Canada’s public policies and leading role in international standard setting positioned Canadian industry to succeed.



The lack of attention given to seeing the health care sector as an engine of economic growth is quite similar to that which existed at Universities (boards, presidents and faculty) more than fifteen years ago. Little attention or focus was given to identifying products and services generated by professors as opportunities with commercial potential to be developed by Canadians and supported by Canadian capital for Canadian benefit. One modest program initiated by the federal government began the attitudinal and cultural shift that has led to an entirely different reality. The Networks of Centers of Excellence Program validated the advantage of networking and demonstrated that great science and discoveries could be transferred to the marketplace for Canadian benefit. The old model of “Canadians discover, Americans invest and develop, and Canadians buy back Canadian innovations at inflated prices” should not be tolerated. Regrettably that model is still the accepted norm for most of the health care field. By comparison, the biotechnology industry in Canada is recognized for its innovations and rapid growth potential, capturing over \$1 billion dollars in venture capital this past year, a figure that some estimates suggest could grow to \$5 billion per year by 2010 if we seize the available opportunities.

New standards of leadership, understanding, shared values and commitment are required among all the stakeholder groups. This includes ministries of health and economic development, hospital administrators and health authorities, academic and institute-based scientists, the many segments of the life sciences industries, and the investment communities. None of these stakeholder groups has a history of working well within their groups or across the groups – yet they have so many shared goals. It will require some modifications to today’s models of decision-making, consultation, partnership and organizational infrastructure. It would be so right to align and integrate Canada’s most cherished social program with an industrial strategy that capitalized on the public investment in health care. How can we use the public health care system to incubate, evaluate and improve products and services, enabling these to be shared/sold globally. How can we use our knowledge and know-how to responsibly benefit from the global demand for outstanding ethics, wellness and disease prevention, genetically modified foods, natural therapies and neutraceuticals? Over time, the Canadian brand of Mounties and Mountains should become synonymous with Medicare as well. Canada’s health and health care products and services should be emblematic of innovation, quality, caring and cost effectiveness. If there is to be an innovation strategy, let it begin with health care and a healthy Canada.



PROPOSAL # 2:

Investing in inclusive, powerful, well-managed networks for pace-setting critical mass in research linked to patients, innovation in care, and economic development.

The growth in Canadian private and public sector commitments to health research from about \$700 million to \$ 2 billion per year in the last five years is providing a platform for extracting new lessons and ideas about how to put scientific, clinical, investment and management networks and partnerships together to get more leverage from our public investments and policies. Many of these new investments are looking for team-based research, networks and/or funding partners. They have been going through the difficult learning experiences of multi-stakeholder co-operation and are emerging with new strength and momentum. The earlier we learn from these experiences, the more rapidly we will be able to adjust public policies accordingly. The most significant new investments are attributable to:

- New commitments by the research-based pharmaceutical industries;
- The growth in venture capital for the life sciences-including biotechnology and medical devices;
- Aggressive fundraising by the network of health charities and foundations supporting a growth in specialized, somewhat independent, hospital and academic research institutes;
- Direct provincial and federal government commitments to:
 - Improve health information and health information systems,
 - Direct investments in science infrastructure and biotechnology,
 - Develop human resource and create jobs and sustainable careers in the life sciences, and,
 - Create competitive and fair tax policies.
- Provincial and federal government commitments to peer reviewed granting councils such as:
 - The Michael Smith Foundation For Health Research,
 - The Alberta Heritage Foundation for Health Research,
 - The Ontario Innovation Trust, Ontario Research and Development Challenge Fund, and the Ontario Cancer Research Network,
 - Fonds de la Recherches en Santé du Quebec,
 - The Canadian Institutes of Health Research,
 - The Canada Foundation for Innovation,
 - The Canadian Health Services Research Foundation,
 - Genome Canada and the five regional genomic centres,
 - The Canada Research Chairs,
 - Canada Millennium Scholarship Foundation,
 - Canada Health Infoway Inc,
 - The health-based Networks of Centres of Excellence.



More progress can be made in building Canada's capacity for co-operative research, multidisciplinary teams, networks, partnerships and clusters, without de-motivating the traditional curiosity-driven individual investigator. Every industry, academic research centre, granting council and investment group recognizes the value of working in partnerships – and all have programs and resource support groups to encourage partnerships. Clear examples include: the disease and population foci of the Canadian Institutes of Health Research; Industry Canada's Networks of Centres of Excellence; the large scale and matching funding focus of Genome Canada and the Canada Foundation for Innovation; and the many co-operative provincial or regional disease based reference networks for acute care and patient registries. At one end of the spectrum are highly managed networks with secure funding, independent boards, academic and industry commitment, advisory committees, peer review and full time executive staff. The other end of the spectrum more commonly includes very loosely knit networks for informally sharing resources or for patient referrals. There are attempts to respond to the needs of international sponsors of clinical trials in identifying very specialized patients or very large numbers of ideal patients and excellent site managers. Although Montreal displays a degree of networking that starts to form a globally competitive industry cluster, Canadian institutions and cities fall far short of the level of networking and clustering that is formed in the leading centres of the USA and Europe. The benefits of networking still have to be offset against the administrative burden. There are still many unanswered questions about the ultimate size, focus, and critical mass of networks and clusters needed for optimum results.

The transformations underway have just started Canada on a catch-up journey toward:

- Achieving pace-setting standards of competitiveness, critical mass, industrial scale research, and risk-sharing;
- Capacity building of multidisciplinary teams, networks, partnerships and clusters, without de-motivating the traditional curiosity-driven individual investigator;
- Ensuring the seamless flow of new knowledge, funding and intellectual property from basic research to pre-clinical and clinical research to clinical practice;
- Developing or repatriating outstanding human resources and drawing clinician back into the research networks; and,
- Getting value from publicly owned sources of health information.

In Western Canada, consultations with over three hundred research and economic development leaders, clearly indicated that they want to focus on building no more than six, very focused, inclusive, powerful networks where Western Canada can create quality and competitive advantage - and be a world leader. The initial approach recommended the creation of a pilot program in Western Canada with a goal of a 10:1 leverage on the investment of each stakeholder group and a ten percent return in extra economic activity on the public investment by generating products and services for the global health care market. Each of the networks would be grounded in basic science, clinical research, informatics, policy research and disease management studies



with links to thousands of patients, excellent patient registries and academic, health and industry partners. These would be hub and spoke networks with the hubs integrated into the large health authorities and industry partners, and the spokes reaching out into community hospitals, health professionals, and patient networks. New, more powerful models of partnership would be formed with domestic and international biotech, pharmaceutical, nutraceutical, clinical research, medical device, information and investment industries, health charities, government regulators and service providers. These models would provide for larger scale investments and seamless transfer of intellectual property. The networks would extend beyond simple co-operation into clear governing bodies, world leading advisory boards, and a business-like professional executive and management support structure. Proponents of this model are seeking integrated investment strategies that provide 5:1 or 10:1 leverage of the science, technology, management and financial capabilities of each of the investments by: Western Economic Diversification; Provincial Health and Economic Development Ministries; the biotech, pharmaceutical and device industries; venture capital; and institutional and individual investors. Each investor would be expected to seek specific results to meet its own needs from its own commitments. Over ten years the strategy would increase the investment in Western Canada's health innovation from about \$300 million to \$2 billion per year and create about 25,000 jobs. The initiative was a result of the Task Force "Shaping the Future of Health Research and Economic Development in Western Canada" chaired by Dr. Henry Friesen and is now being pursued by an interim Canada West Health Innovation Council, chaired by Dr. Aubrey Tingle.

There are many other plans or initiatives that could serve as pilot projects unique to each region, disease or research platform. These pilot projects would focus on establishing far broader and more robust networks than have been available under traditional methods of funding. Examples of networks exist in every region of the country and in such diverse areas as cardiac care, cancer care, perinatal care, spinal cord research, information systems, the Networks of Centres of Excellence, technology and platforms such as the synchrotron and nanotechnology centres. Models exist where industry has partnered into whole programs as well as specific product opportunities. Several university liaison offices and business incubation programs see the need for stronger national networks and more uniform and seamless intellectual property transfers. It is important to hear the views of opinion leaders on how to establish real, world-class critical mass in innovation networks and clusters, and how to shape and invest in these networks for optimum results.



PROPOSAL # 3:

Creating an integrated investment and regulatory climate that would attract tens of billions of new private sector investment into health research and infrastructure, and improve health services with cost savings to the Crown.

Creating an integrated investment and regulatory climate for health innovation is a public policy challenge of the highest order. It is only possible to achieve if there is a broadly shared vision and set of incentives to guide the many thousands of detailed actions and decisions to be taken by all the investor groups, including: regulators, insurers and governments; health charities; venture capital; individual investors; institutional investors; and the pharmaceutical, medical device, information and property development industries. It makes no sense for any one investor group to commit in advance without assurance that it will get leverage and liquidity from the other investors. The seriousness of commitments to shared leadership and negotiations will determine the rate of progress.

Life science investments represent about 12% of capital markets in the USA as compared to about 2% of Canadian capital markets. Each 1% shift into life sciences within the Canadian capital markets would represent about \$10 billion of investment capital that could be accessible to health innovation in Canada. A 10% shift over ten years would represent about \$100 billion - enough to transform health innovation and infrastructure for improved health care and economic development. Some opportunities may be in providing long-term investments: in the more than four million square feet of research space already needed in Canada today; in hospital infrastructure; in the large, high-throughput, integrated and scalable research platforms that can generate thousands of potential discoveries; in large health informatics applications of global importance; and in the fast emerging biotech sector. Why has the health sector not been able to put together the investment models and partnership financing networks to attract some of this investment into the most promising field of science for future economic growth? The challenge is for the scientists, industries and investor groups to work together to create the investment instruments and know how to identify the most commercially promising areas of health innovation and investment, understand and fairly allocate private and public sector risk; spread the risks over many investors and investments, provide patient capital for many years, and get maximum leverage on the best available management, science, intellectual property, technology, products and services. Institutions also have to know that they can ultimately realize some liquidity on their investments in transfers either to large numbers of individual investors, or to large pharmaceutical, device, information or other industry investors. New investment and seamless intellectual property transfer models to meet the needs of institutional investors will require imaginative, sustained efforts by researchers, health care professionals and industry. Over a ten-year period it should be possible to generate a dynamic industry sector comparable to the energy, telecom or automotive sectors in sophistication, size and diversity.



Tax policies for the exploration and development of the Canadian oil and gas industry provide one model to bring diverse groups of investors with different risk-return expectations into health innovation at different points in the innovation lifecycle. Our oil and gas industry has grown and prospered because of innovative and integrated approaches to tax policies developed in the 1970's. These tax policies recognize that special incentives are needed:

- To attract hundreds of millions of dollars of patient investment financing with little possibility of return in less than 10 to 15 years - comparable to the long development life cycles of most health industry products – except by transferring intellectual property and rights to “downstream” investors;
- To allow investors to spread their extremely high risks and low probability of being economically successful across many opportunities, particularly in the early seismic and land assembly stages of exploration – often cited at ratios of 1 in 1000 – which are comparable to or even higher than rates of economic success that can be expected in the early discovery phases in health innovation;
- To allow for the leverage of geological, scientific, land rights, management expertise and investor capital through a system of “farm-ins” and “farm-outs” that allow each investor to share risks in different ratios reflecting their tolerance for risk and their contribution in cash or kind through the development life-cycle. For example, a group with outstanding management expertise may put up a relatively low percentage of the financing but still retain a high percentage of the equity interests in a venture.
- To allow the exploration and development costs to “flow-through” to investors or partners in agreed ratios so that investors can offset the allowable costs against income from other sources in determining their tax liability. This type of arrangement applied to health innovation would provide an incentive for all categories of investors to participate in the sector.

There is strong resistance in some quarters to any tax incentives that favour any one sector, but health innovation is so crucial to the fabric of our country and the sustainability of our health care system, that it may deserve separate consideration. Profitable international and domestic corporations performing R&D in Canada already benefit from federal and provincial incentives (more recent in some provinces) that make our largest health innovation centres as tax-attractive as any in the world. 100% of scientific research and experimental development expenses are deductible in determining taxable income. A 20% tax credit is available to large taxable corporations. A 35% refundable tax credit is available even if there is no tax payable to those small Canadian controlled corporations that are often cash poor. Quebec has opened the model even further with a 40% refundable credit on the first \$2 million in wages, on R&D contracted to universities or incurred by a Technology Development Fund, a 20% refundable credit on wages over \$2 million, and an income tax holiday for investigators drawn from outside Canada. In addition most of the provinces provide for tax-attractive, labour-sponsored venture



capital funds allowing individuals to invest up to \$3,500 per year. What is missing in our tax models is:

- The inability to share risks, leverage capabilities and flow the tax credits through to diverse investors and partners – some of whom may not be in health innovation as their principal business;
- The inability to claim the costs for tax purposes of disease management studies, basic science research and other disease management or prevention studies that are not product specific.

A tax regime comparable to oil and gas exploration and development would open up the unlimited imagination and potential of the investment community to attract investments into Canadian health innovation. The challenge is to use peer review or clear criteria to avoid the abuses of the Scientific Research Tax Credits in the 1970's. Progress is unlikely without a clear national vision of why new models of investing in health innovation are being encouraged.

Canada's Research Based Pharmaceutical industry is ready to entertain significant investment commitments under certain conditions. On a level playing field with their international colleagues, Canadian pharmaceutical executives have the energy, passion and know-how to increase Canada's share of the industry's \$65 billion global R&D spending. If we work together to help them increase Canada's 2% R&D share to our 4% market share, this would represent net new investment of more than \$1 billion per year. The industry is more than ready to seek this level of new investment over 5 years if the provincial formularies and pricing controls are brought up to the levels used in Quebec. The question is the extent that public policy advisors, academic health researchers and health authorities are ready and willing to align their interests to support these industry executives in a "Team Canada" approach to international competition for R&D.

The net fiscal benefits to governments in Canada of adopting the Quebec model of regulation and ramping up pharmaceutical investments in Canada are projected to greatly exceed any costs to the public health care system. The Task Force on Health Research and Economic Development in Western Canada predicted that a cohesive strategy would provide net fiscal returns to every government. A more detailed study predicted that increasing industry's investment in Ontario over five years by \$2 billion, in return for the province agreeing to open up the formulary and pricing to the levels in Quebec, would provide a net return of about \$1.4 billion to the provincial government and about \$0.5 billion to the federal government, net of all drug price increases, cost avoidance in health care, and income and sales taxes from economic activity and new employment. The Western Canada Task Force on Health and Economic Development forecast similar significant positive net cash flows for each of the four western provinces. Many doubtful stakeholders will have to examine the economic analysis that has been performed before they would agree that it is a win-win scenario for other governments to adopting the Quebec model of pricing and formulary regulation.



Other benefits of attracting investment commitments of the pharmaceutical industry include:

- Access to more new drugs that research is showing improve outcomes for patients and lower the rate of growth of hospitalization costs in particular and health care costs in total;
- Access to clinical trials and promising therapies many years before they would be otherwise available in Canada, recognizing that patients in trials have better outcomes than patients not in trials even if they are receiving standard treatment, and the industry picks up a significant share of the treatment costs; and,
- A significant growth in activity in publicly administered, but industry financed, disease management studies to help the industry promote clinical best practice in Canada and abroad.

Other determinants of an integrated investment and regulatory climate that provide further opportunities to strengthen a national strategy include:

- Strengthening the processes that support the work of ethics review boards;
- Bringing intellectual property protection up to global levels;
- Expediting the regulatory reviews to take advantage of - international and federal-provincial agreements; greater reliance on regulatory surveillance activities; and building capacity of independent academic health centres to perform reviews on behalf of regulators.

CONCLUSIONS

The scope and scale of the opportunities to be examined may provide several billions of dollars of economic and health benefits needed to sustain our public health care system.

They would also create unprecedented career opportunities in the life sciences, and a domestic industry comparable in scope and scale to our resource and manufacturing sectors. Little will happen until the health and economic policy advisors in provincial and federal governments start to work together to develop a shared public policy agenda. Only then will governments be able to extract and/or attract the types of leverage from existing investments that is desirable and feasible. Political leaders will have to insist that health and economic ministries, health authorities, research leaders, and industry executives work together. Ultimately a common plan of action will have to be negotiated between the stakeholders.



An appendix of high level summaries (about 3 pages each) will be circulated in advance of the workshop:

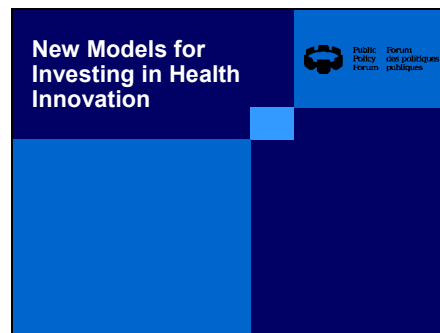
- A The Economic Impacts of Investments in Health Innovation
- B Trends in federal and provincial granting councils
- C Investment trends by Rx&D members
- D Investment trends by venture capital in the life sciences
- E Spending trends in Canada's largest academic health centres
- F Make up of the Canadian Capital Markets by sector
- G Canada's 100 largest Investment Funds
- H Research-innovation focused recommendations of provincial and federal commissions examining health care
- I Report leading to the formation of the Canada West Health Innovation Council
- J Report to Rx&D and the Government of Ontario on the health and economic implications of investments in the life sciences
- K Investment proposals of the planning committee to the Ontario Genomics Institute
- L Extracts of federal and provincial public policy papers dealing with life sciences, innovation and knowledge capacity
- M G-8 comparisons of private and public sector investments health innovation
- N The mechanics and impacts of tax policies for Exploration and Development and for Research and Development.
- O Examples of managed networks.



APPENDIX D

Power Point Presentations

Slide 1



Slide 2



Slide 3



Slide 4

Evolution of the Ideas

- Hon. Ron Duhamel's 2001 "Western Canadian Task Force on Health and Economic Development" chaired by Dr. Henry Friesen
- Formation of the Canada West Health Innovation Council chaired by Dr. Aubrey Tingle
- Work of the Investment Climate Committee of Rx&D and the Ontario Government.
- Romanow, Kirby, Fyke, Mazankowski, Rotman, Forget, Clair and other studies
- National Innovation Forum in November




Slide 5

Participants

- 30 academic health centres and research networks
- 30 industry, investors, economic ministries
- 30 health policy and funding agencies and policy advisors
- 10 facilitation and support

100



Slide 6

Agenda

- The opportunity and models proposed
- Roundtables focused on three specific proposals
- Lunch
- Feedback from roundtables
- Next steps



Slide 7

Address from Federal Ministers

- Hon. Alan Rock, Minister of Industry
- Hon. Rey Pagtakhan, Minister of Veterans Affairs, Secretary of State for Science and Technology

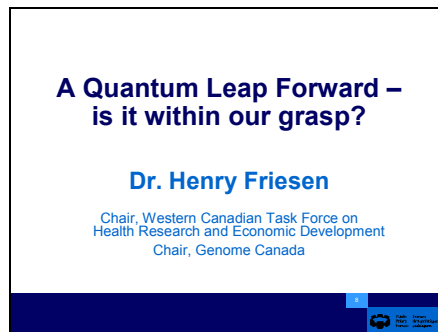


Slide 8

**A Quantum Leap Forward –
is it within our grasp?**

Dr. Henry Friesen

Chair, Western Canadian Task Force on
Health Research and Economic Development
Chair, Genome Canada

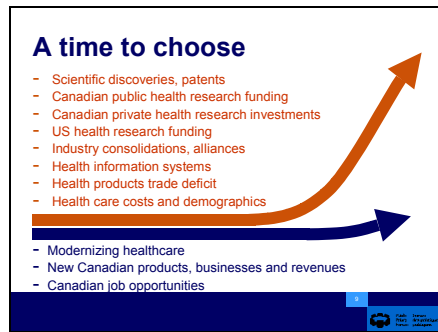


Slide 9

A time to choose

- Scientific discoveries, patents
- Canadian public health research funding
- Canadian private health research investments
- US health research funding
- Industry consolidations, alliances
- Health information systems
- Health products trade deficit
- Health care costs and demographics

- Modernizing healthcare
- New Canadian products, businesses and revenues
- Canadian job opportunities



Slide 10

A time to choose

Modernizing health care for all:

- Oblivious to the economic opportunities

OR


- Creating unique Canadian economic opportunities through innovation



Slide 11

What will it take?

- Shared vision
- Passionate and committed leadership
- Expertise, imagination and courage to compete globally
- Ability to adapt values, traditions and structures



Slide 12

A Vision for Canada

The health and health care sectors should be viewed not as a cost to be borne, but as an opportunity to be explored.

We must embrace a national vision to create the most innovative, high quality health care system possible, committed to continuous improvement.

This vision of the health care and health systems as an engine of economic growth can be a key enabler for a sustainable Canadian health care system.



Slide 13

Proposition #1

Align the health innovation and economic policy agendas and decision-making within governments and health authorities to help optimize health, patient care and economic development.



Slide 14

Challenges for the roundtables

- How do we develop a "Team Canada" approach?
- How do we bring our value systems together?
- How do we align decision-making?
- What economic returns are reasonable?
- How will innovation best support global excellence and continuous renewal?




Slide 15

Challenges for the roundtables

How to effectively align Health and Economic Agendas


- Governments and Agencies (Federal, Provincial, Municipal) (e.g. Regulation)
- Health and Education Institutions (e.g. Procurement policies)
- Industry and Investors
- Information and Service Industries
- The Public



Slide 16

**Managed Networks:
An Inclusive Strategy**

Dr. Aubrey Tingle
Chair, Steering Committee,
Canada West Health Innovation Council
President & CEO,
Michael Smith Foundation
for Health Research



Slide 17


CANADA WEST HEALTH INNOVATION COUNCIL


- Formed 18 months ago
- Mandate to develop the resolution of how best to capture economic opportunities arising out of health research and health system innovation
- Supported by
 - Western Economic Diversification
 - The Michael Smith Foundation for Health Research
- Process: extensive consultation with key stakeholders



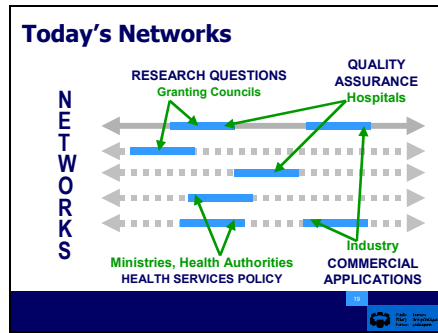
Slide 18

Proposition #2

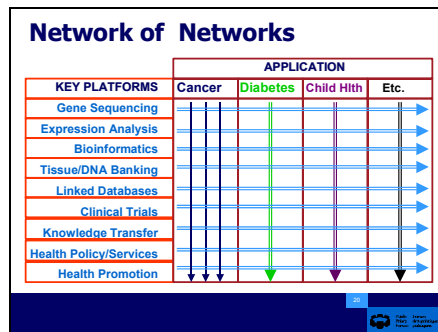
Invest in inclusive, integrated, well managed and powerful innovation networks for pace-setting critical mass in research linked to patient populations, innovation in care and initiatives for economic development.



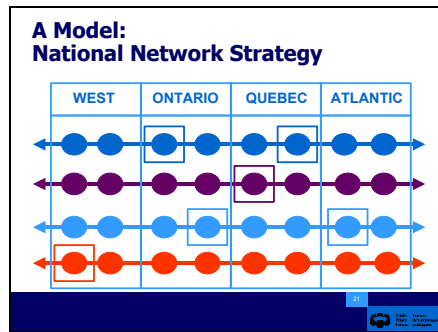
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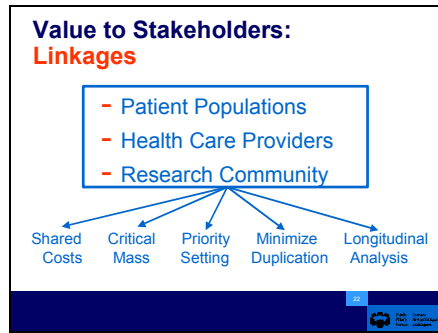
Slide 20



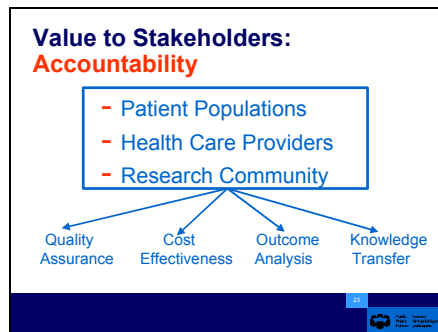
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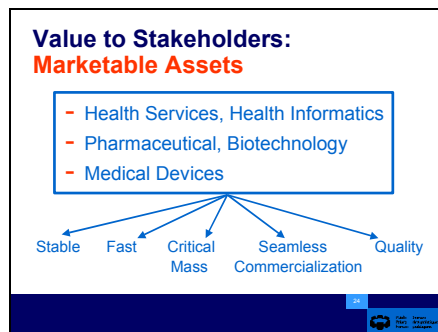
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Challenges for the roundtables

What are the processes to:

- Break down barriers to network formation
 - Ethical review, privacy guidelines
 - Intellectual Property ownership
 - Regional concerns
- Define and choose priority networks
- Fund priority networks
 - Develop a coordinated approach to attract global industry partners
 - Engage global industries, governments and institutional investors
 - Identify lead investors




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Dr. Michael Hayden

Founder and Scientific Director

- Canadian Genetic Diseases Network (NCE)
- Xenon Corporation

Professor, Medical Genetics, University of British Columbia



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**Integrated Investment, Taxation
and Regulatory Models**

Dr. Cal Stiller


Chair, Canadian Medical Discoveries Fund
Chair, Ontario Research and Development
Challenge Fund



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Proposition #3

Create an integrated investment and regulatory climate to attract new private sector investment into health research and infrastructure, to improve health services with cost savings to the Crown.




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The good news

- Research indicates that improved health care practices, new medicines and health promotion are helping to reduce health care costs
- Income tax rates and research costs are more attractive in Canada than in other leading jurisdictions for profitable companies whose principal business is health innovation


However ...



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A new regulatory environment

- Drug approval process is unacceptable
- Rethink provincial drug regulations
- Extended intellectual property protection and enforcement gives significant advantage to UK and USA
- A Canadian patient waits **seven months** longer than a US patient to access new medicines

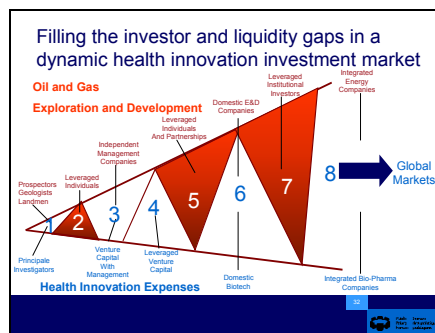


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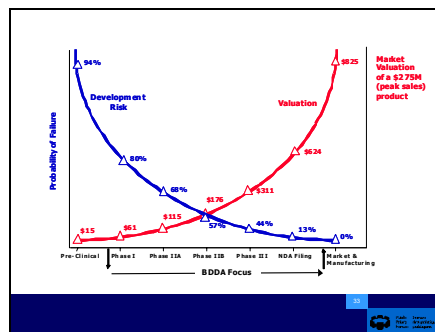
Incentives are needed for investors to participate in health innovation

- Individuals get tax benefits from personal investments in high risk long-term energy exploration that are not available for health innovation investments
- Energy exploration resembles health innovation
 - High priority for Canadians
 - High risk
 - "Farming in" / "Farming out"
- Energy enjoys tax provisions such as "Flow through shares"; "Limited partnerships"; and unique definitions and approvals of "Exploration Expenses"

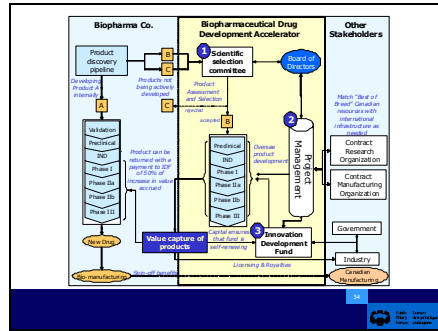
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Practical ways to invest in health innovation

- Barriers to investments must be addressed
- The top 100 pension funds alone have assets of approximately \$600 billion
 - Each 1% invested in Canadian health innovation equals \$6 billion
- Well managed "Blind funds" would enable participation of pension plans and other institutional investors in health innovation
 - "Blind funds" can be organized by Managed Network, or by subject to meet investor requirements

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What is possible by 2010


- Better health and health care for all Canadians
- Ten managed networks commanding worldwide attention for researchers, investors, partners and spin-offs
- 100,000 new jobs
- New space and infrastructure: Largely privately financed



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What is possible by 2010

- Companies and most promising investigators funded at internationally competitive levels (often 5-10X today's funding)
- Canadian-based global bio-pharma, health informatics, devices and services industries
- On track to reverse \$8 to \$10 billion trade deficit in health goods and services
- Net annual fiscal return to federal and provincial governments of \$3 to \$6 billion towards sustainability of health care system
- Canada will move from 15th to 5th in R&D investments



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Challenges for the roundtables

- Can our healthcare system set the highest global standards of patient care, service and efficiency?

AND

- Can networks become a magnet for industry, institutional partners and investors?
- Can investors be drawn into high risk health innovation initiatives without new or enhanced tax incentives?
- Is growth in health innovation achievable (from about \$3 billion per year to \$10 billion per year)?

AND HOW?




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As Canada's healthcare system is modernized, one should always ask:

1. What is the global economic opportunity created?
2. Who will lead and promote this opportunity as part of our Canadian advantage?
3. What incentives or rewards will encourage the transformation?
4. Who will measure progress toward the objectives?


Indeed, no new investment should be contemplated without addressing these 4 questions/criteria.



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**Lessons Learned
and Applied**

Terry Matthews
KI, OBE, PEng, FIEE, FR Eng
Chairman and CEO, March Networks



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**Join in Shaping
the Vision**


Pat Lafferty
Associate (Retired Partner)
PricewaterhouseCoopers



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Questions for breakout groups


1. What is **your reaction (benefits and challenges)** to the general proposition that health innovation can be an engine of economic growth?
2. How would you want to design, shape, influence or support the **specific proposal** that your discussion group is asked to explore?
3. **Who has to do what to make this happen?** (responsibilities, actions, structures, investments)
4. How will **success be measured?**



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Logistics of breakout groups

- Rooms
- Chairs
- Rapporteurs
- Resource personnel
- Lunch



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Extra Slides



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