



The Promise of the Health Sciences in the 21st Century

There's a revolution taking place in the health sciences and it's forcing a different view of human health and healthcare in the 21st century.

The roots of this revolution can be found in the rapid and convergent advances in fields of research as diverse as genetics, chemistry, population health and computational science. The increasingly multidisciplinary nature of health research also stems from the full engagement of healthcare "consumers" – patients, the public, healthcare providers and policy-makers – in the health research enterprise. Taken together, these changes have transformed the nature and focus of health research, simultaneously opening the doors to profound complexity, but also holding the promise of comprehensive systems solutions to seemingly intractable problems, whether it's the mysteries of the human body or our health system.

These changes have also created a new imperative for healthcare. The health sciences revolution is pressuring governments and societies everywhere to rethink and re-engineer existing health institutions and research approaches. In this new universe, it is clear that science must inform the development of public policy. At the same time, public policy and the public interest will increasingly inform and guide the directions of research carried out with public funds. The recent creation of the Canadian Academies of Health Sciences is both timely and necessary; this organization will play a vital role as an advisor and partner, helping navigate the challenges and opportunities in the changing health sciences landscape.

Changes in this landscape had their origins in the colossal advances in deciphering the cellular and molecular basis of life. Deriving the sequence of the human genome and the Canadian discovery of stem cells did more than just advance our understanding of the human body. Virtually overnight, it transformed biology and medicine from a descriptive science to an information science, right in the middle of the revolution occurring in the information and communication technologies.

This revolution in genomics and its sister sciences is not the only scientific and technological revolution going on in the health sciences. Clinical and population epidemiology have had remarkable successes in teasing out the risk factors of disease. Most recently, the Interheart Study by Dr. Salim Yusuf at McMaster University, with his colleagues from around the world, identified dietary factors, exercise, obesity, excessive drinking and so on as risk factors for heart disease, diabetes and stroke. We no longer think of chronic diseases as the inevitable consequences of aging – they are all due to specific, attributable risk factors and they are not inevitable.

Each of these achievements has set the stage for further

advances that will reverberate well beyond the current century. The key to each of these and, indeed, of the revolution itself, is the convergence between different disciplines to create entirely new approaches to disease understanding, prevention, detection and treatment. For example, the fusion of engineering with nanotechnology, stem cell biology and genomics is creating a dramatically new science of bioengineering with entirely new approaches to the early detection of disease, drug development and delivery and organ repair.

As a consequence of this revolution, medicine is moving rapidly from a reactive to a proactive mode as the genetic, behavioural and socioeconomic risk factors for disease are identified. This transformation will lead to increased emphasis on prevention and health promotion and targeted medicine.

As noted earlier, individual Canadians are playing a central role in this revolution. An educated public, with interest in and immediate access to the very latest in medical and scientific advances via the Internet, will not say: "Whatever you say, doctor. You know best. What do I know?" Rather, they will ask, "Why aren't you offering herceptin like they are at Sloan-Kettering?"

There are numerous challenges and opportunities to be addressed in the midst of this changing health research environment. These include the changing nature of disease, the transformation in Canada's demographics, the high costs of new technologies and new drugs, the sustainability of our healthcare system and the growing health disparities between rich and poor countries.

The research community must respond confidently and boldly and across disciplines to these exciting opportunities. It must protect and nurture public confidence in the motivations driving research and in the ethical framework within which it is carried out.

There is also tension within the research community between those who argue that excellence remains the sole criterion for funding and those who no longer perceive a dichotomy between excellence and relevance. There is room for both positions if, together, we articulate a vision so compelling, so large, so exciting, so important and so essential to Canada's future that it becomes inevitable. The scientific opportunities are too exciting, the global stakes are too high and the pace is too rapid for the Canadian health research community not to soar above these tensions.

This is an exciting challenge for the entire Academy. The research community must open its doors to the public and provide an equal place at the table where research priorities are debated and decided. The emerging generation of scientists understands this integrative and inclusive vision for health research. Not surprisingly, young people see the future because, of course, they will create it.

If we succeed in sustaining and growing this exciting revolu-

tion in health research, if we succeed in striking creative global partnerships that will shape and harness this new science to improve health and healthcare and if we succeed in diminishing the disparities between those that have access to this new science and those that do not, then we will pass on a better world to our children.

(Based on the keynote address delivered by Dr. Alan Bernstein, O.C., FRSC, President, Canadian Institutes of Health Research, at the historic, inaugural meeting of the Canadian Academies of Health Sciences, on September 21, 2005, Vancouver, BC.)

The Leadership Gap in Healthcare – The True Deficit

Three years ago Roy Romanow released his landmark report on Canada's national healthcare system. The report, embraced by politicians of all stripes, recommended sweeping changes to the Canadian healthcare system. And while governments have continued to throw money at the system, very few of Romanow's recommendations have actually been implemented. Why is it that after three years and billions more in spending our healthcare system still teeters on the precipice? Waiting times for treatment grow longer, emergency rooms are packed to overflowing and many Canadians do not have a primary physician. Clearly there is more to this crisis than dollars. The real deficit in our healthcare system is leadership.

Across all industries and sectors 70% of strategic initiatives and change fail to deliver on the outcomes expected. The bottom line is that it is relatively easy to analyze the situation and make recommendations about what needs to happen. It is significantly more challenging and takes leadership to actually create momentum for action to happen. The Romanow report provides ample proof of good analysis and recommendations followed by failure with regards to implementation.

For some reason we expect our leaders to go farther, be faster than a speeding bullet and have a plan that can scale tall buildings in a single quarter. Is it any wonder that 40% of leaders in new roles leave within a year? Historically the pronouncement of what needs to happen was followed by people scurrying to act for fear of their jobs. Now the fear of doing something wrong outweighs individual accountability. Fear, money, deals and other similar motivators do not work in changing the health system, which is made particularly complex because of all the powerful stakeholders. It is our experience that leaders are looking for effective approaches to implementing a plan – how to do it is the key to their success.

The fundamental requirement to motivate people to change is a shift in leadership style from “tell and sell” to “engage and

enable.” One of the recommendations from the Romanow report is to foster collaborative leadership. But it is more than collaborative leadership. Waving the flag and declaring a crisis is passé; people are too cynical and mistrusting of those who call out to rally the troops. Employees and stakeholders need to be actively involved in creating and implementing a vision that they own. They need to be listened to when the environmental and systemic barriers are standing in the way of success, and they need to be guided successfully through challenges to their thinking, interpersonal and values-based conflict and resistance. Good leadership means engaging the right people to create vision, workable strategies and concrete, practical action plans. More importantly good leaders are able to work with those who are on board, those who are skeptical and the full-on resisters, when it comes to implementation. Leaders must change the environment to enable professionals and managers to achieve the desired outcomes; otherwise bureaucratic inertia ensues and operational, managerial and financial outcomes will be thwarted.

Most urgently leaders must be willing to learn more than the technical details and rationale for the solution, and they must learn about leading a strategic process and adapt to work with groups in the various stages of change. And yes it is messy but it works. Top down direction, decision-making and delegation followed by expectations that it will happen without appropriate processes, environment, coaching and development of individuals and groups of people is unrealistic. The ensuing micro-management that typically follows when results are not forthcoming suffocates creative, capable people.

We believe there are several critical elements for healthcare leaders to focus on in decision-making and change:

- The health system primarily exists to prevent and preempt disease and to care for people with disease. Patient-focused processes crossing the silos of different professional disciplines will automatically create effectiveness and efficiencies. Patients create the focus of an organization, not buildings, equipment and structures.
- The system must be prioritized first on prevention, then diagnosis and lastly options such as drugs, surgery or other interventions.
- Information sharing must replace all the superfluous structures that are set up to plan and monitor. Accountability requires that the measures be integrated in the process and not be managed or enforced by third parties.
- All structures outside of primary health service delivery need to be reviewed to ensure they have a purpose in service of the patient health delivery system and are organized to deliver the service. Assume none are required until a simplified and effective patient service requires something.
- Political and executive leaders need to engage the system in