Imagine a future where medical devices the size of a Tic Tac could regulate your heartbeat or a simple blood test could predict a serious health condition within seconds.

REMARKABLE INNOVATIONS TRANSFORMING PATIENT CARE
The quest to provide the highest quality of care is underway. The necessary measures focus on seamless communication and increased accessibility—for British Columbians and all Canadians.

Transformation of the system is necessary to move forward

Each of our six Health Authorities, the Ministry of Health, and private and public partnerships are driving changes in our healthcare system. The BC government and the BC Medical Association are at the forefront of change and have collaborated since 2006 to bring sustainable, affordable and beneficial programs directly to British Columbians.

An essential building block in the process is the use of technology. Key advances in technology and telecommunication have enabled us to provide care to patients in remote locations, improve efficiency and extend the reach of our health system.

It’s a very exciting time to be involved in medicine because of the advancements in technology and telecommunication. We are working towards and look forward to the day where local health care providers are able to provide care to patients in remote locations.

An important factor in the success of these initiatives is the willingness of all participants to change. Agreement on the need to change is only the start. Implementation is where we as leaders must navigate. It’s a very exciting time to be involved in medicine because of the advancements in technology and telecommunication.

Despite some patients having to manually adopt their new environment, the study showed that patient management was achieved by all participants.

This highlights the trend of challenges faced by the medical profession. The use of technology is essential in improving patient care and decreasing the number of patients that fail to follow through with their care.

The gap between what is desired and what can be delivered will only widen if changes do not occur. This is a challenging environment that government and health leaders must navigate.

The good news? Ricky lived to tell the story. The one-minute AIDS test has now been developed, and we are one step closer to eradicating this disease.

Innovation, leadership and collaboration have been driving changes in the way physicians deliver care to patients. We have thus far made improvements to the patient’s journey in our healthcare system. The BC government and the BC Medcial Association are at the forefront of change and have collaborated since 2006 to bring sustainable, affordable and beneficial programs directly to British Columbians.

Innovation comes in small packages

Chronic pain affects about 345,000 Canadians, but last year, 10 Saskatchewan patients were implanted with a device that senses changes in a patient’s body position, and massages the spinal cord with pain relief signals.

The challenge is to provide the highest quality of care. The necessary measures focus on seamless communication and increased accessibility—for British Columbians and all Canadians.
Your laboratory test results make up more than
3/4 of your medical record

For more than 10 years, Excelleris has been using the latest technology to get the majority of this
important information into the hands of your physician safely and as soon as it’s available.

We deliver more than 7 million laboratory results annually, directly to doctors like yours via our secure
portal, LaunchPad™, or via secure integration with any of the Electronic Medical Records systems in
active use in BC.

In February 2010, Excelleris launched my ehealth in response to the growing demand by patients for
secure, electronic access to their laboratory results. Today, more than 110,000 patients use the
my ehealth service to view and print this critical personal information. You too could be using this
service if you’ve recently visited either a BC Biomedical or LifeLabs community laboratory in BC.

For more information about Excelleris and our
Health Care Information Distribution and Access
service, visit www.excelleris.com

For more information about my ehealth
visit www.myehealth.ca

Beat Colorectal Cancer.
Get Screened. Get FIT

Colorectal cancer is the second leading cause of cancer-related deaths in Canada.
But, it is also one of the most preventable forms of cancer. If screened and caught
early - the chances of survival increase by 90%.

FIT Testing is an immunochemical fecal occult blood screening method that is highly
sensitive, requiring just one sample, reducing specimen collection time and providing
faster results to physicians and patients.

The Canadian Association of Gastroenterology
and the Canadian Digestive Health Foundation
recommend individuals aged 50 years and
older, who do not have a family history of
colorectal cancer, be screened at least every
2 years using a fecal occult blood test - the
preferred method.

LifeLabs provides results electronically to
physicians through Excelleris. Patients can
access FIT test results by registering for and
using my ehealth.

What are the benefits?
- Routine screening increases survival rates
  by detecting colorectal cancer early
- Ease of sample collection ensures patient
  compliance
- Patients can collect the sample with ease
  and no interruption to daily routine
- Only one sample is required
- There are no restrictions on diet or medicine

The best screening test is the one that gets done*
Biopsies are known to be an invasive procedure that can leave a patient feeling traumatized and increasingly vulnerable. A new procedure is employing the use of biomarkers to make treatment a kinder, gentler process.

A marked improvement in diagnosis

Gordon Allan, 58, was born with a congenital heart defect that deteriorated sharply in his 40s, requiring him to undergo both a heart and a kidney transplant about 10 years ago.

“However, it is not the surgeries that stand out in his mind as much as the numerous biopsies he had to endure, which he describes as ‘traumatic.’ “The procedures are invasive and made an already stressful situation even more stressful,” he says. Equally overwhelming for him was the specialized equipment set up and the number of healthcare professionals in the room for each biopsy.

While tissue biopsies may never be totally done away with, exciting new research is pointing the way to a gentler, more precise way of reading the body’s signals, according to doctors.

Biological signposts

Disease prediction or diagnosis often starts with a laboratory test that is usually applied to a blood, urine, saliva or tissue sample. “However, the challenge is assessing the sample so sensitively and specifically that it truly reflects the key workings of a patient’s health, explains Dr. Bruce McManus, director of the Centre of Excellence for Prevention of Organ Failure (PROOF Centre), based at St Paul’s Hospital.

This is where biomarkers come in. A biomarker is a biological indicator that can be measured reliably, sensitively and specifically to detect or monitor changes in patient health, says McManus. Examples of biomarkers are genes, protein or other molecules.

A staggering amount of research is going into identifying improved, clinically relevant biomarkers, and this has intensified in the last decade. In the research units of B.C. universities and hospitals alone, at least $50 million has been deployed to investigate biomarkers. This figure does not take into account research efforts in the private sector.

Not all transplants are problematic

Contrary to popular opinion, not everybody rejects transplanted organs and not everybody rejects severely.

The PROOF Centre has been tasked with identifying the individuals who are susceptible to, are living with, or responding to, organ shortages for heart, lung and kidney failure. It has already successfully identified immune rejection biomarkers in transplant patients. These biomarkers are so sensitive that they can differentiate sharply between acute, treatable rejection and its absence, says McManus.

Other markers can distinguish between those patients with longer term, unmanageable rejection and those without.

Such markers will be assessed for clinical value in B.C. beginning in January 2012.

The financial perspective

Allan is involved in the financing of investment of real estate and fund management services. He is also on the Translation Advisory Committee (TAC) to the PROOF Centre board of directors. The TAC reviews all proposals submitted to the PROOF Centre to assess if they can be commercialized and translated through the healthcare system.

If a simple blood procedure testing for certain markers can yield even more targeted information than a biopsy, then that is a no-brainer for Allan. Equally attractive for the businessman in Allan is that, for an overstretched health sector that spent 11.7 percent of the country’s GDP in 2010, blood tests are a lot cheaper than biopsies.

The ultimate goal

Ultimately, biomarkers will reduce the direct and indirect costs to patients and to society. “Multiplying this effort across a myriad of diseases over cross heart, lung and kidney failure and one gets an indication of how important this field of research is, not just in terms of savings, but also for the individual person and their health outcomes. We do stand on the promise of breaking through to a whole new level of understanding,” says McManus.

“The ultimate vision is to have the most cost-effective, widely available lab test that can give very personalized information on each patient. That’s the PROOF Centre’s dream, not just for Canadian medicine, but globally.”

WE ARE CULTIVATING HEALTH THROUGH BIOMARKER SCIENCE. JOIN US.

Our unique approach: Driven by clinical need, committed to clinical implementation

The PROOF (Prevention of Organ Failure) Centre of Excellence is a not-for-profit hub dedicated to finding new, clinically relevant tests for patients with heart, lung, or kidney failure.

By embracing a cross-disciplinary team of people and uniting organizations, we can speed up the development of new tests, applying them sooner to improve and save lives.

Learn more about our different programs related to ailments like COPS, heart failure, and chronic kidney disease at www.proofcentre.ca

healthier lives through discovery

Vancouver Coastal Health is proud to be a global leader in health research. By making discoveries here at home, we can:

• rapidly bring new, cutting-edge treatments to British Columbians
• recruit the best physicians, scientists, and health care professionals
• target health research that serves the needs of British Columbians and maximizes health resources

The PROOF Centre of Excellence for Commercialization and Research is supported by united organizations, we can speed up the development of new tests, applying them sooner to improve and save lives.

Learn more about our different programs related to ailments like COPS, heart failure, and chronic kidney disease at www.proofcentre.ca

The PROOF Centre of Excellence for Commercialization and Research is supported by united organizations, we can speed up the development of new tests, applying them sooner to improve and save lives.

Learn more about our different programs related to ailments like COPS, heart failure, and chronic kidney disease at www.proofcentre.ca
HIV/AIDS remains a major global health challenge, affecting 33 million globally. With traditional testing methods, it is common for people in less developed countries to travel far for an HIV test and then cool their heels for several days for the results.

But travelling time, the situation is not that different in Canada.

However, a BC-based firm, bioLytical Laboratories, has created a point-of-care HIV antibody test that delivers accurate results within 60 seconds. The test, approved for use in Canada in late 2005, received US FDA approval last November, says Dr. Christopher Shackleton, a bioLytical adviser.

People do want to know their HIV status—especially with the availability of effective treatment options to manage the disease, he says. “We have seen a paradigm shift in the fight against the HIV epidemic to one of routine testing and a seek-and-treat philosophy. Increasingly, patients want to know how to manage their situation and point-of-care rapid testing is a cornerstone of this approach.”

bioLytical is currently developing and expanding its point-of-care rapid-test technology to detect other infectious disease biomarkers, Shackleton said.
**PANEL OF EXPERTS**

**Dr. David Osmers**
President and Chief Executive Officer,
Vancouver Coastal Health

**Dr. Brett A. Skinner**
President & Director,
Health Policy at Fraser Institute

**Ida Goodreau**
Director of Strategy
UBC Centre for Health Care Management

---

**Question 1: With the federal-provincial health accord expiring in 2014, it’s time to think about the future of our healthcare system. What would be the components of an ideal healthcare system?**

The ideal system would allow healthcare consumers to be more involved. We need to put people first and give them opportunities and tools to make choices about the healthcare options available to them that are supported by medical evidence. Equally important is the fostering and support for innovation that leads to better quality care, especially where that improved quality can offset the increased demand for a service that isn’t vitally follow innovation. Our ideal system will also encourage more robust partnerships with physicians based on shared resource and quality incentives.

In Canada, government has a monopoly on medical insurance. Therefore, the allocation of medical goods and services is a political decision. User fees are unpopular so governments tend toward subsidizing 100 per cent of the costs, which leads to unsustainable cost growth. Governments react by rationing, which causes shortages when there are no options to pay privately. Ideally, we need a competitive market for healthcare that is minimally regulated to achieve universal access to necessary medical treatments, provides means-tested public subsidies, and exposes all consumers to prices. Netherlands and Switzerland are examples.

An ideal healthcare system is focused on three components: people, sustainability and innovation. First, the system must focus on helping people live longer and healthier lives. This requires access to excellent treatment, confidence that care is safe and compassionate, and an environment where individuals “own” their health. Sustainability necessitates that policy addresses the system’s funding now and for decades to come. Policy-makers must ask if taxpayers are receiving good value on investments and if long-term needs are being considered. Finally, the system should be permeated with a commitment to innovation in prevention, new technologies and greater self-care.

**Question 2: Finding solutions to Canada’s healthcare problems will require innovation and leadership. What should our priorities be?**

Innovation in service delivery needs to drive the innovation occurring in technology and drug development. We must innovate through service delivery. To do this, we must provide healthcare that is comprehensive, not episodic. We should help create strategies and solutions to keep people well and treat them effectively. We must also incentivize to meet targeted times for diagnosis, surgery and outcomes of care. This requires leaders who can innovate, learn from mistakes, and be accountable. Healthcare needs people with the vision to de-politicize the many challenging realities of our healthcare system to ensure the focus remains on people, quality and care.

The feds financially penalize provinces that allow users to pay private payment or insurance options—policies that would make the system financially sustainable. The feds should not increase provincial transfers after the 2014 accord expires. Instead they should announce that provinces experimenting with user fees and private payment or insurance will not be penalized. The provinces should adopt percentage-based user fees, private payment options and competitive delivery. These kinds of policies are common in other countries that achieve universal access without the shortfalls or wait times we see in Canada.

In the past 40 years, a major change has occurred in the profile of the “typical” patient, from someone with an acute illness to someone with one or more chronic diseases. General practitioners are now required who can shift the system toward community and home-based care, with patients more engaged in their own health. Patients will require an integrated approach that links hospitals, General Practitioners, clinics and homecare, as well as public and private services. This system needs to be coordinated around a comprehensive individual care plan, supported by technology, and enabled with appropriate funding and incentive models.

**Question 3: Health spending swallows as much as half of provincial government’s budget. How can we control healthcare costs without compromising quality?**

Healthcare costs are rising due to a number of factors that include an aging and growing population as well as costs of new technologies and drug therapies. We need to meet these financial demands by removing as many non-productive costs as possible. That means decreasing administrative costs to provide more direct, efficient hands-on care. As is required to improve the quality of care we provide, fewer medications and reduced risk of infection will make the patient journey better, less expensive and—ultimately—more satisfactory.

In BC, health spending will consume 50 percent of revenues by 2017. We must make health spending sustainable before it bankrupts the province. Federal funding and raising taxes are not solutions. The feds have already transferred billions more than needed to keep up with inflation or population growth. High and rising taxes discourage economic growth and reduce the long-term potential revenue base for governments. Fewer fees and private payment options would offset public cost pressures, encourage economic efficiency, and offer a sustainable source of additional resources: providing better healthcare, sustainable costs.

In Canada, health spending will consume 50 percent of revenues by 2017. We must make health spending sustainable before it bankrupts the province. Federal funding and raising taxes are not solutions. The feds have already transferred billions more than needed to keep up with inflation or population growth. High and rising taxes discourage economic growth and reduce the long-term potential revenue base for governments. Fewer fees and private payment options would offset public cost pressures, encourage economic efficiency, and offer a sustainable source of additional resources: providing better healthcare, sustainable costs.

**Innovation in service delivery needs to drive the innovation occurring in technology and drug development. We must innovate through service delivery. To do this, we must provide healthcare that is comprehensive, not episodic. We should help create strategies and solutions to keep people well and treat them effectively. We must also incentivize to meet targeted times for diagnosis, surgery and outcomes of care. This requires leaders who can innovate, learn from mistakes, and be accountable. Healthcare needs people with the vision to de-politicize the many challenging realities of our healthcare system to ensure the focus remains on people, quality and care.**

**The feds financially penalize provinces that allow users to pay private payment or insurance options—policies that would make the system financially sustainable. The feds should not increase provincial transfers after the 2014 accord expires. Instead they should announce that provinces experimenting with user fees and private payment or insurance will not be penalized. The provinces should adopt percentage-based user fees, private payment options and competitive delivery. These kinds of policies are common in other countries that achieve universal access without the shortfalls or wait times we see in Canada.**

**In the past 40 years, a major change has occurred in the profile of the “typical” patient, from someone with an acute illness to someone with one or more chronic diseases. General practitioners are now required who can shift the system toward community and home-based care, with patients more engaged in their own health. Patients will require an integrated approach that links hospitals, General Practitioners, clinics and homecare, as well as public and private services. This system needs to be coordinated around a comprehensive individual care plan, supported by technology, and enabled with appropriate funding and incentive models.**

---

**Remarkable Clinical Outcome**
I walked out and I thought, I have no pain at all anywhere. They performed a miracle.

- Verda, Kyphon® Balloon Kyphoplasty patient

**Smarter Technology, Greater Freedom**
I work shift work as a paramedic and my insulin pump with CGM has given me the confidence I need to perform at a heightened awareness level every day.

- Andrea wears the world’s first integrated Insulin Pump and Continuous Glucose Monitoring System™, the Paradigm® Veo

**Making Life Easier**
Because my ICD is remotely monitored through CareLink®, regardless of where I am, I have the peace of mind that my physician can be alerted to potential issues.

- Dylan, CareLink® patient who has an ICD to monitor and, if necessary, treat abnormal heart rhythm

**Empowering Tomorrow’s Patient Today**
Being able to have that MRI in the future isn’t something I was willing to give up.

- Melanie, Advisa MRI™ SureScan™ Pacemaker patient

Every 4 Seconds Someone is Helped by a Medtronic Technology.

*For the CGM system requires the use of the MiniLink™ transmitter and glucose sensors (sold separately).
Question: How is the digitization of medical record data improving communication about patients’ health?

Answer: It gives all doctors involved in a patient’s care easier and faster access to vital information.

Despite teething problems, more doctors are using technology to support disease diagnosis and management, according to experts.

Electronic medical records (EMR), though promising to revolutionize medicine, still do not have a robust following in Canada. Unlike New Zealand, where almost 100 percent of doctors are electronically connected, only a third of Canadian doctors use EMR. However, the figure is higher in BC—almost 40 percent have at least 70 percent of their practices with at least six doctors have EMR, according to Jeremy Smith, program director at the Physician Information Technology Office (PITO), a $26 million partnership between the provincial government and the BC Medical Association to implement and support IT planning.

Cost has been an issue. Dr. Jeff Harms, of Pavilion in the foothills Okanagan Valley, says that despite the B.C. government funding 70 percent of parts of the EMR bill, it still costs his physicians practice is about $20,000 after the rebates.

It took six months for the system to be integrated into the workflow, during which time patient volume fell by a quarter, despite doctors working longer hours. "We lost about $75,000 in revenue. The stress was massive," recalls Harms.

Furthermore, laboratories, imaging clinics and hospitals need to be included in the electronic network as well. Hospitals have been notoriously slow to change their systems, preferring the less expensive option of sending paper reports to external doctors, according to Diamas.

The art of e-medicine

Despite the initial set up issues in EMR, great strides have been made in electronic medicine. E-health is a very dynamic field, according to experts. E-health is not new—B.C emergency rooms used it to manage injuries and customizing healthcare and life sciences division.

Telehealth points the way

St Pauls hospital is testing two web-based programs targeting heart patients in less urban settings. Each web program costs about $100,000 to develop, a boon to a financially stretched health system.

According to Dr. Scott Leas, chair of cardiovascular prevention research at St Pauls hospital, heart rehabilitation programs are usually based in large, urban hospitals. In 2004-05, St Pauls decided to deploy three computer programs to reduce hospital readmissions and help patients with progressive heart failure.

Both are presided over by a nurse and the patients are connected with other health professionals like dieticians and exercise specialists.

"The general practitioner remains thelynchpin in the patient’s care plan, stresses Leas. If patients results have been encouraging."

Philosophical musings aside (are machines really smarter than humans?), Watsons technology comes into its own in the healthcare arena, where 2,000 new medical papers are published every day (760,000 a year), and physicians are struggling to keep up, according to Adley Smith, IBM business development manager, healthcare and life sciences division.

The power of large-scale computing

IBM is developing a program to help doctors access the most relevant, timely information on their smartphones or computers. The application will be ready in 24 months.

Watsons children, metaphorically speaking, will emerge as savvy physicians assistants on smartphones applications or as a drop down box in a physicians clinical support system.

"Using the brute force of large scale computing, the program will sort through relevant articles to create a list of statistically probable medical diagnosis and diagnosis to support physicians’ decisions," says Betts. Watsons technology will back up the glamour of television cameras, but there will probably be a list of grateful patients and doctors.

Better decision-making for doctors

The University of British Columbia’s Faculty of Medicine is also studying better decision making processes. Together with the Ministry of Health and BC Medical Association, we have developed new guidelines into an iPhone application for general practitioners," says Dr. Kendall Ho, health strategy office director.

Within five clicks and 10 seconds, clinicians can find the required information. Work on delivering the electronic format of those guidelines began in 2006, even though the iPhone application was only completed last June.

UBC is also researching electronic communication strategies through social media to support patient-controlled care. Its team is investigating how health professionals can use social media, technology, coordinate their advice to benefit the patient, rather than having it dilute itself.

The patient as king

Treating the patient as king makes compelling economic sense. “Quality and customizing healthcare and appropriate treatment options [at the outset] are cheaper than fixing more issues later,” argues Betts.

A strong patient focus, underpinned by cutting-edge technology, can markedly improve diagnosis and lead to better targeted treatment. Using this approach results in reduced patient suffering and cost to the state. Ultimately, patients are kept out of the hospital, he continues. "Watson, finally, is a goal worth aspiring to."
Need a reason to donate your organs?

1. You have the potential to save seven lives.
2. There’s a greater chance that you will one day need an organ transplant than there is of you ever being an organ donor.
3. Survival rates of transplant patients continue to improve, providing recipients with an extended and high quality of life.
4. It takes seconds to register your decision online at transplant.bc.ca
5. You want to make a difference.

There are more than 350 British Columbians currently waiting for a second chance. Stop the wait. Registering for organ donation takes seconds at transplant.bc.ca