Drone delivers lungs for transplant

Page 36
Nursing is in crisis.

COVID-19 has pushed our health-care system over the edge. For patients, that means delayed surgeries, postponed tests, and undiagnosed illnesses. There’s been a nursing shortage in Ontario for decades. Now it’s a crisis that can’t be ignored. Overworked nurses are burning out and many are quitting the profession. Empty praise won’t solve this crisis.

WITHOUT NURSES, HEALTH CARE WILL FAIL.

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**Contents**

**IN THIS ISSUE:**

- **Cover story:** Drone delivers lungs for transplant  
  36

- **Special focus:** Medtech Canada  
  27

- **Concordia researchers** develop a new way to find cancer at the nanometre scale  
  5

- **Engineer invents** device to help patients with limited hand mobility paint and draw  
  10

- **Moral injury in** health care workers is focusing on functional brain changes  
  14

- **Supporting AI** Deployment with a Toolkit for Implementers  
  43

- **Addressing inequalities in** care  
  53

### COLUMNS

- Editor’s Note  ................. 4
- In brief  .......................... 6
- Evidence matters .......... 18
- Safe medication .......... 46
- Long term care .......... 48

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Special focus: Medtech Canada  

Engineer invents device to help patients with limited hand mobility paint and draw  

Concordia researchers develop a new way to find cancer at the nanometre scale  

Supporting AI Deployment with a Toolkit for Implementers  

Addressing inequalities in care  

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[Special focus: Medtech Canada]  

[Engineer invents device to help patients with limited hand mobility paint and draw]  

[Concordia researchers develop a new way to find cancer at the nanometre scale]  

[Supporting AI Deployment with a Toolkit for Implementers]  

[Addressing inequalities in care]
Spending more on health care does not guarantee better health outcomes

By Michael Wolfson

Canada’s federal election results had barely been counted when the Premiers resumed making their well-worn demands for more federal health care money. Instead of thanking Ottawa for the billions it has already provided for fighting COVID-19, or asking for short-term pandemic-related funding, the ritual chorus seeks ever-increasing amounts of money for decades to come.

Granted, the need for more money certainly feels urgent right now. Intensive care is on the brink of collapse in Alberta and Saskatchewan, with health officials preparing to make painful decisions around triaging patients as COVID-19 infections surge. A number of provinces are having difficulty even staffing their hospitals, after almost two years of burnout-inducing working conditions for front-line health care workers.

However, the premiers’ multibillion-dollar asks have been for unconditional long-term funding, well beyond the scope of the current crisis. But they have not been clear on how any new money would be used. It is entirely reasonable to ask them to explain themselves – especially since spending more on health care does not automatically mean better health outcomes.

In a recent study, CIBC economists Benjamin Tal and Andrew Grantham found that COVID-related hospitalizations per one million of the population were four times higher in the U.S. and five times higher in Britain than in Canada in early 2021. “Yet, as we all surely recall, the hospital system in Canada during the second wave was at its wits’ end,” they write. “Simply put, we reached capacity at levels that many other countries consider to be acceptable.” They conclude that Canada’s hospitals need more money.

But this is only part of the story. While the U.S. is well known for having much higher health care spending than any other country, both the U.K. and Israel spend significantly less than Canada – and yet neither came close to peaking on hospital capacity. The issue, then, cannot just be a lack of funding; how our health care dollars are being allocated must also be part of the conversation.

One reason provincial governments prefer hounding Ottawa, rather than focusing on more efficiently using the funding they do have, is that passing the buck is painless. As Canadian health economist Bob Evans says, “every health care cost is someone’s income” – that is, controlling or cutting health care costs means controlling or cutting the salaries of doctors and nurses, hospital budgets and pharmaceutical-firm profits. It is much easier politically for provinces to demand more funding than to get into conflicts with such concentrated and powerful interests.

Continued on page 6
Concordia researchers develop a new way to find cancer at the nanometre scale

Lab-on-a-chip technology uses magnetic particles to identify biomarkers of concern before a tumor even forms

By Patrick Lejtenyi

Diagnosing and treating cancer can be a race against time. By the time the disease is diagnosed in a patient, all too often it is advanced and able to spread throughout the body, decreasing chances of survival. Early diagnosis is key to stopping it.

In a new Concordia-led paper published in the journal Biosensors and Bioelectronics, researchers describe a new liquid biopsy method using lab-on-a-chip technology that they believe can detect cancer before a tumour is even formed.

Using magnetic particles coated in a specially designed bonding agent, the liquid biopsy chip attracts and captures particles containing cancer-causing biomarkers. A close analysis can identify the type of cancer they are carrying. This, the researchers say, can significantly improve cancer diagnosis and treatment.

TRAPPING THE MESSENGER

The chip targets extracellular vesicles (EVs), a type of particle that is released by most kinds of organic cells. EVs – sometimes called exosomes – are extremely small, usually measuring between 40 and 200 nanometres. But they contain a cargo of proteins, nucleic acids such as RNA, metabolites and other molecules from the parent cell, and they are taken up by other cells. If EVs contain biomarkers associated with cancer and other diseases, they will spread their toxic cargo from cell to cell.

To capture the cancer-carrying exosomes exclusively, the researchers developed a small microfluidic chip containing magnetic or gold nanoparticles coated with a synthetic polypeptide to act as a molecular bonding agent. When a droplet of organic liquid, be it blood, saliva, urine or any other, is run through the chip, the exosomes attach themselves to the treated nanoparticles. After the exosomes are trapped, the researchers then separate them from the nanoparticles and carry out proteomic and genomic analysis to determine the specific cancer type.

“This technique can provide a very early diagnosis of cancer that would help find therapeutic solutions and improve the lives of patients,” says the paper’s senior author Muthukumaran Packirisamy, a professor in the Department of Mechanical, Industrial and Aerospace Engineering and director of Concordia’s Optical Bio-Microsystems Laboratory.

ALTERNATIVES TO CONVENTIONAL CHEMO AND EXPLORATORY SURGERIES

“Liquid biopsies avoid the trauma of invasive biopsies, which involve exploratory surgery,” he adds. “We can get all the cancer markers and cancer prognoses just by examining any bodily fluid.”

Having detailed knowledge of a particular form of cancer’s genetic makeup will expose its weaknesses to treatment, notes Anirban Ghosh, a co-author and affiliate professor at Packirisamy’s laboratory. “Conventional chemotherapy targets all kinds of cells and results in significant and unpleasant side effects,” he says. “With the precision diagnostics afforded to us here, we can devise a treatment that only targets cancer cells.”

The paper’s lead author is PhD student Srinivas Bathini, whose academic background is in electrical engineering. He says the interdisciplinary approach to his current area of study has been challenging and rewarding and notes that the technology’s potential could revolutionize medical diagnostics. The researchers used breast cancer cells in this study but are looking at ways to expand their capabilities to include a wide range of disease testing. “Perhaps one day this product could be as readily available as other point-of-care devices, such as home pregnancy tests,” he speculates.

Patrick Lejtenyi is an Advisor, Public Affairs at Concordia University.
Outdated criteria for drug plan reimbursement obstruct evidence-based care

Why is clinical practice lagging evidence for using cost-effective medications in Canada? Drug reimbursement decisions are not routinely updated to reflect the latest evidence, which can be bad news for patients, write the authors of an editorial in CMAJ (Canadian Medical Association Journal).

“This leads some physicians to use the system to provide the best and safest treatment for their patients by saying their patients meet reimbursement criteria when they do not,” write Drs. Andreas Lapapa, senior deputy editor, CMAJ, and Ahmed Bayoumi, Centre for Urban Health Solutions, Unity Health Toronto.

Two related research articles looking at the use of new direct oral anticoagulants (DOACs) help to emphasize flaws in the approach taken to a funding decision taken by Canada’s public drug plans. The studies found that DOACs are effective drugs with a lower risk of bleeding than warfarin, an older anticoagulant, for certain groups, and one study showed that DOACs are also more cost-effective. Yet drug plans in Canada restrict prescribing of DOACs because decisions aren’t regularly updated. However, other countries, such as the United Kingdom, have updated their recommendations in line with new evidence.

“When reimbursement criteria for drugs are outdated, nobody benefits,” write the authors. “Physicians are forced into challenging choices between advocating for patients or upholding professional standards for honesty. Patients suffer because physicians who follow outdated government directives may offer suboptimal care. Health systems are seen as indifferent to high-quality evidence when making policy decisions and tolerating gaming of the system.”

The editorial writers suggest several changes to allow more updated drug formularies in Canada. These could include an automatic time for review or to update with new evidence; a process to allow groups to request a review; and regular audits by public drug plans to identify patterns showing large-scale nonadherence to restricted prescribing criteria to trigger a review.

“Regular review of drugs will increase the workload and resource requirements of drug reimbursement committees. However, a regularly updated formulary is essential to having a trusted, responsive and efficient public drug reimbursement plan,” they conclude.

*Outdated criteria for drug plan reimbursement obstruct evidence-based care* was published October 12, 2021.

Continued from page 4

Spending more on health care

But there is also a deeper reason. The provinces, and the federal government, simply may not have the data to evaluate their health care spending rigorously, even if they even wanted to. If they do have the data, they certainly keep their evaluations hidden.

This is not by accident. The savvy leaders among the key stakeholders have no interest in having such data exist, because they may fear it will lead to results that could embarrass them and turn public opinion against them, possibly in ways that would reduce their incomes or autonomy.

For decades, some of the most important data showing health care waste and inefficiency has looked at variations among small geographic areas – “postal code medicine.” These variations, which are the continuing subject of the Dartmouth Health Atlas, consistently show that while some parts of the U.S. spend two to three times as much on health care as others, key health indicators, such as primary care for diabetic patients and post-surgery complications, are not correlated.

One recent study by leading U.S. health economists concluded that these variations were not due to differences in patients’ needs; instead, they were most closely associated with physicians’ beliefs that were “unsupported by clinical evidence.” The specific examples they studied suggested that 12 to 35 per cent of this health care spending was unwarranted.

Canadians are rightly proud that our health care sector is nowhere near as expensive or inequitable as that of the U.S. But we are not immune. One decade-old study looked at heart attack treatments in Canada and found a threefold difference across health regions with no obvious difference in post-surgical 30-day mortality.

Sadly, no one has updated or extended this study, in part because the data needed are simply unavailable. We could get better value for our health care dollars if we knew more.

Before the federal government signs over any more multibillion-dollar cheques to the provinces with no strings attached, Canadians deserve to know why the additional investment is needed in the first place, how it will be spent – and whether, after all this time, our money has been well used.

Michael Wolfson, PhD, is a former assistant chief statistician at Statistics Canada and a member of the Centre for Health Law, Policy and Ethics at the University of Ottawa.

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Prescription for Northern Ontario

Prescription for Northern Ontario, released by the OMA, is an ambitious action plan containing 12 recommendations to address the unique health-care challenges in the north, including:

- The chronic shortage of doctors, especially in specialties such as family medicine, emergency medicine and anaesthesia
- The profound and disproportionate impact of the opioid crisis and mental health issues, including insufficient numbers of mental health and addiction care providers, especially those who help children
- The lack of high-speed internet and unreliable connectivity, which limits the availability of high-quality virtual health care
- Unsafe drinking water and inadequate health-care facilities and resources in Indigenous communities
- Prescription for Northern Ontario is part of a larger master plan, Prescription for Ontario: Doctors’ 5-Point Plan for Better Health Care, which provides 75 province-wide recommendations for implementation over the next four years. Both road maps are the result of the largest consultation in the OMA’s 140-year history, which involved 110 stakeholder groups, 1,600 physicians and almost 8,000 Ontarians from 600 communities.

“The OMA recognizes that the northern disparities in health care have existed for many years but the COVID-19 pandemic has made these gaps more visible and the need for solutions more urgent,” OMA President Dr. Adam Kassam said at a news conference today at the Northern Ontario School of Medicine.

Northern Ontario spans almost 90 per cent of the province’s geography but had only six per cent of the population. Its distance, weather and infrastructure including reliable internet present barriers to health-care services.

The health-care needs of northern Ontario are growing. A greater proportion of its population is over 65. There are more complex chronic illnesses and mental health and addictions than in other regions, and the average life expectancy is 2.5 years lower than in the rest of the province. At the same time, the number of doctors dropped from 1,715 in 2018 to 1,700 in 2019. Almost 100 generalist family physicians are needed in northern Ontario’s rural communities.
Pneumonia from inhaling natural oil-based sinus remedies

A case of persistent pneumonia illustrates the hazards of using oil-based decongestants, as physicians discovered in a 30-year-old patient who regularly gargled with flax seed oil and used a sesame oil nasal decongestant for chronic sinusitis. The practice article is published in CMAJ (Canadian Medical Association Journal).

The patient visited the emergency department for left-sided chest pain; he had been diagnosed with pneumonia in Poland about two weeks earlier and treated with a 14-day course of clarithromycin. His symptoms recurred repeatedly, and the pneumonia failed to resolve despite multiple courses of antibiotics. He was a lifelong non-smoker, rarely drank alcohol and did not use any recreational drugs or electronic cigarettes.

Upon investigation, a lung biopsy detected a foreign substance surrounded by inflammation.

The authors emphasize the importance of taking a full patient history in making an accurate diagnosis.

“This prompted us to take a detailed history of environmental exposures to vaping liquids, silica, asbestos, talc and numerous other organic and inorganic materials,” writes Dr. Matthew Stanbrook, deputy editor, CMAJ, with coauthors. “The patient denied all of these exposures. However, he disclosed that he had been swishing and spitting flax seed oil for the past 12 years to help with the symptoms of dry mouth that he had been experiencing since his tonsillectomy.”

He had also used a natural sesame oil decongestant for two years to help with sinusitis. Use of these substances caused him to inhale small oil droplets, which led to lung inflammation and pneumonia.

“Given this exposure history and consistency with the pathology results, we diagnosed exogenous lipoid pneumonia and counselled the patient to stop the antibiotics and oil products.”

The researchers have reported this adverse event linked to using a sesame oil nasal spray to the Natural Products Directorate of Health Canada.

“In addition to the well-known risks of inhaling oil products, there is no evidence that an oil-based decongestant is any more effective than salt-water products that are widely available.”

‘Without health workers, there is no health care’: Health care leaders call for urgent action at emergency COVID-19 summit

In many parts of Canada, hospitals are overwhelmed, vaccine rates are at a standstill and public health measures are being reinstated to contain rising COVID-19 cases. Amid a growing fourth wave, health care workers are burnt out, demoralized and exhausted as they care for patients. In addition, many Canadians are waiting for much-needed procedures that have been delayed due to increasing backlogs.

During the meeting, health care leaders identified both short-term and long-term actions to contain the fourth wave, lead an effective COVID-19 response and ensure Canada’s health system remains sustainable. These include:

• Taking decisive urgent and long-term actions to address staff shortages across Canada, examining issues including recruitment, retention, workload and safety, and bring immediate relief to workers in COVID-19 hot zones.

• Providing urgent and long-term mental health support for health workers who continue to work in dire conditions to care for patients and keep the health system afloat.

“Health workers across the country are past the point of exhaustion and they need to feel like there is a light at the end of this endless tunnel. We need to aggressively work to implement public health measures – even those unpopular ones – to regain control. We can no longer ask our health workers to carry the load,” says Dr. Katharine Smart, CMA president.

Throughout the summit we heard common concerns and themes being shared on how to immediately support health workers in this crisis. It is clear, that we need a multi-pronged intervention, one that addresses the critical short-term challenges and one that also looks at beyond the COVID-19 crisis. While improved data collection and national health human resource frameworks are necessary, they do not fix the immediate issues. For our health system to make it through the fourth wave, governments and health organizations need to urgently work together to support our health workers. Without health workers, there is no health care,” says Tim Guest, CNA president.

In response to this state of crisis, the Canadian Medical Association (CMA) and the Canadian Nurses Association (CNA) hosted an emergency summit. It brought together nearly 40 national and provincial health organizations, and included nurses, physicians, personal support workers, psychologists, educational institutions, and other health organizations.
As exciting as it is to commemorate the 100-year anniversary of the discovery of insulin in Canada, what’s even more exhilarating is what we’re doing today to making the next 100 even better. We Will.

COMMITTED TO THE NEXT 100 YEARS.
In North America, there are over 58 million people of all ages experiencing limited hand mobility, hand and arm weakness and difficulty grasping and controlling objects, because of a medical condition or injury. This includes people living with Cerebral Palsy, Multiple Sclerosis, Muscular Dystrophy and those recovering from spinal cord injuries and strokes. Performing daily activities like writing, drawing, painting, and accessing technology becomes very difficult or even impossible. As a result of the physical limitation, these individuals experience a loss of independence, self-expression, social exclusion and frustration.

McMaster University biomedical and mechanical engineering student Lianna Genovese was inspired to help solve this human problem, directing her energy to create a solution that supports people with limited hand mobility in their hobbies and passions.

At 18 years old, Lianna channelled her natural entrepreneurial spirit and engineering knowledge to develop Guided Hands™, a mechanical assistive device that enables anyone living with limited hand mobility to write, paint, draw and use a touch-screen device. This innovation has been awarded the national James Dyson Award, a design award that celebrates and inspires the next generation of engineers.

“I met a woman named Elissa who lives with Cerebral Palsy, and after hearing her story about losing her ability to paint – a talent and passion she had lost due to the progression of her condition – I knew I had to find a solution,” says Lianna. “I wanted to help give her back her passion and contribute to a better quality of life.”

Inspired by the mechanics of a 3D printer, Guided Hands™ uses a simple sliding system composed of linear shafts and ball bearings. The unique system promotes controlled and guided hand movements in all directions, as the user holds a handpiece custom to the size of their hand and level of hand impairment. The handpiece is connected to an arm attachment that holds various writing utensils, such as a paintbrush, pen, marker or stylus and is designed to use the patient’s gross motor skills in their shoulder to perform activities rather than relying on fine motor skills in the hand which are often compromised.

Over the past two years, Lianna has connected with over 150 patients of varying medical conditions, neurologists, and occupational therapists across Canada to help inform her design and perfect the device.

Lianna says, “It was important to me to test Guided Hands™ in real world scenarios and get in-person feedback. After meeting with a little girl named Bella, a child with Cerebral Palsy, and witnessing the smile on her face as she wrote, coloured, drew and played games on an iPad, I knew I had found my passion. I realized that what started off as a school project could become a real-world solution that could help change the lives of many people.”

Existing devices to assist with fine motor skills do not support controlled and guided hand movements, focusing instead on only allowing the user to hold a writing utensil or reduce tremors. The Guided Hands™ design is the only product that offers multiple ambidextrous handpieces and uses a unique sliding system to glide the hand seamlessly during an activity.

Today, at 21 years old, Lianna is the CEO & Founder of her own company called ImaginAble Solutions and has launched healthcare pilots for Guided Hands™ across North America to further test with patients and health professionals. Her company introduced Guided Hands into the market at the end of August 2021 making the device available to people across Canada and the USA. Additionally, as the Canadian National James Dyson Award winner, Lianna has received $3,500 to go towards her innovation and will progress to the international competition with a grand prize of $50,000.

The James Dyson Award International Winner will be announced on November 17, 2021. To follow Lianna’s journey to the international stage of the competition and to learn more about the foundation’s continued work to inspire and support young engineers visit the Foundation website.
Centering diabetes care around the patient, with support beyond medicine

By Sabina Steinkellner

The global burden of diabetes continues to rise at an alarming rate. Around half of all people with diabetes have uncontrolled high blood sugar, leading to further health complications and a continued strain on the healthcare system. In Canada, diabetes currently impacts 10 per cent of the population and is expected to grow to 12 per cent by 2030.

At Sanofi, we’re continuing to invest in reversing the course of chronic disease epidemics, such as diabetes. We need to shift our approach to focus on the whole patient in order to achieve the best possible health outcomes.

Treatment and care for diabetes has a long history of innovation and research. Canada played a significant role in this 100 years ago, when insulin was discovered by a group of research scientists at Connaught Laboratories, the predecessor of Sanofi Canada. It is one of our proudest moments and it continues to drive Sanofi Canada’s efforts in diabetes care to this day.

Building on this strong legacy in diabetes, Sanofi Canada’s mission is to deliver simple, meaningful solutions with an agile approach to our work. We always strive to simplify the treatment journey for insulin-dependent Canadians and be a trusted partner to their healthcare providers by understanding their needs and moving quickly.

Harnessing insightful data

We know that a chronic illness diagnosis, such as diabetes, often comes with high levels of uncertainty, lifestyle changes and new treatments. To learn more, we recently commissioned market research of over 1,000 Canadians living with diabetes to identify challenges and opportunities to improve care.

Building meaningful partnerships

Mental health is the first priority area we are exploring as we move towards treating the whole patient through comprehensive care beyond medicines.

With valuable data and insights, Sanofi Canada is committed to building meaningful relationships with patients and healthcare providers by listening and engaging in ongoing, data-driven conversations. We also recognize that the healthcare landscape and patients’ needs change. This has never been truer than during the ongoing COVID-19 pandemic, so we are working towards being agile and nimble to deliver on our promise of providing meaningful solutions.

Supporting clinical research

In addition to these patient-centric initiatives, we’re also continuing to invest in Canadian research and innovation. Recently, Sanofi Canada participated in the 81st Scientific Sessions hosted by the American Diabetes Association. We unveiled multiple studies and research projects as part of our scientific leadership and commitment to helping people living with diabetes achieve the best possible health outcomes.

Two Canadian-based research abstracts funded by Sanofi Canada were presented, highlighting the importance of partnership and collaboration with the Canadian medical community while providing a global lens on diabetes research to identify optimal therapies for sustained diabetes management and remission.

The world of diabetes is ever-changing and the way we work is more entrepreneurial than in years past. What hasn’t changed is Sanofi Canada’s commitment to Canadians living with diabetes and their healthcare providers.
New type of expanded dialysis is improving quality of life for patients

By Celine Zadorsky

Finding out he had chronic kidney disease came as a surprise to 80-year-old Robert Wahby. “I didn’t feel or have any symptoms so it was kind of a shock, especially when it got to the point that I needed dialysis.”

Wahby, who is a retired family doctor, had been undergoing dialysis at London Health Sciences Centre (LHSC) for close to five years when he decided to take part in a clinical trial through Lawson Health Research Institute, the research arm of LHSC and St. Joseph’s Health Care London. The study was testing an expanded type of dialysis.

“I was hoping that using this different dialyzer would reduce some of my symptoms from dialysis. My appetite was down, I was steadily losing weight and I was hoping it would also help me sleep better,” shares Wahby, who was one of 28 study participants.

Expanded is a new method that removes a broader range of toxins from the body which can improve the quality of life in chronic kidney disease patients who struggle with the side effects from traditional dialysis.

The research was led by Dr. Chris McIntyre, Nephrologist at LHSC and Scientist at Lawson, and examined a new form of dialyzer called THERANOVA. THERANOVA has precisely-made pores that allow larger sized toxic chemicals to be filtered from the blood while retaining essential molecules such as albumin. “The chemicals that can now be filtered out can cause inflammation, malnutrition and the buildup of waste,” explains Dr. McIntyre. “With traditional dialysis treatments, we haven’t been as successful at removing those chemicals and some patients experienced significant side effects.”

These larger molecules that the THERANOVA dialyzer is able to filter out are believed to be associated with inflammation, cardiovascular disease and chronic symptoms like fatigue.

Along with receiving the expanded dialysis treatment, the research participants were monitored through the London Evaluation of Illness (LEVIL) app, developed by Dr. McIntyre with the help of patient input.

“One of our big research challenges is measuring the quality of life on dialysis,” says Dr. McIntyre. “Conventional measures take time and may not be as accurate, so by asking questions through the app every day we were able to get a true idea of how patients were feeling.”

By using the LEVIL app, the team was able to determine that patients that had a poorer quality of life at the start of the study significantly improved in the areas of general well-being, energy and sleep after approximately four to eight weeks of expanded dialysis.

“It’s been incredible. People have been able to walk their dogs again. They have been able to play with their grandchildren when they didn’t have the energy before to do that,” adds Dr. McIntyre.

Wahby, who completed the clinical trial but still receives dialysis through THERANOVA, has been happy with the results he’s noticed so far. “I felt better, I was eating more and I had a better’s night sleep.”

His wife Marlene Wahby, has also noticed promising changes. “His sleeping patterns have gotten better and he feels better when he comes home. When he was on the traditional dialysis, he got very jumpy and didn’t feel well at all when he would come home from treatments.”

Now that the first phase of this study has been completed and published in Kidney Medicine, the next phase will include 60 dialysis patients for up to six months of treatments using the THERANOVA dialyzer. This second phase will be a multicaentered clinical study led by Lawson, University of Toronto and Humber College.
for many health care workers, the past year and a half of the COVID-19 pandemic has taken a toll on their mental health. Recognizing this is a growing concern, a London research team from Lawson Health Research Institute and Western University’s Schulich School of Medicine & Dentistry is examining moral injury amongst health care workers by imaging the effects on the brain.

“We are trying to look closely at what happens in the brain when a person recalls a moral injury event,” says Dr. Ruth Lanius, Associate Scientist at Lawson and Professor at Western’s Schulich School of Medicine & Dentistry. “By understanding the changes happening in the brain, we may be better able to treat individuals suffering from moral injury.”

Moral injury refers to an injury to an individual’s moral conscious which can produce profound emotional guilt and shame. During this ongoing pandemic, some health care workers have experienced emotionally difficult situations that resulted in moral injury.

“Those suffering from moral injury have a cognitive or thinking component which may include repeated thoughts that they didn’t provide the best care for example, or that they let their family down do to their intense work schedule or need to self-isolate,” explains Dr. Lanius, who is also a psychiatrist at London Health Sciences Centre (LHSC). “These thoughts are coupled with intense visceral distress, a gnawing sensation in the stomach or the feeling like one is being eaten up inside. I think once we help resolve the visceral distress, we will also see the negative thinking patterns settle down.”

The new study will involve around 60 health care workers. These research participants will undergo a functional MRI scan at the beginning of the study and have the option to receive eight weeks of treatment. Then, another MRI scan will be done to see if and how the moral injury changes and possibly resolves within the brain. “This can be very validating for the health care workers since brain scans can make the invisible wound of moral injury visible,” adds Dr. Lanius.

The research team’s goal is to better understand what networks of the brain are activated with moral injury. Dr. Lanius hopes this would help establish more neuroscientifically guided treatments. “We have to help our health care workers heal from the tremendous hardships they often endure.”

Health care workers are still being recruited for this study. Interested participants can contact Research Coordinator Suzy Southwell 519-685-8500 ext. 35186 or suzy.southwell@lhsc.on.ca.

Celine Zadorsky works in Communications & External Relations, Lawson Health Research Institute.
Today, an estimated 17% of Canadians will experience atopic dermatitis (AD) at some point in their lives. November marks Eczema Awareness Month, a timely opportunity to shed light on a chronic inflammatory condition known as atopic dermatitis or better known as eczema. Atopic dermatitis (AD) is often characterized as itchy and inflamed skin and is the most common form of eczema. AD is associated with atopic comorbidities, such as asthma, food allergies, atopic eye disease, and allergic contact dermatitis. People living with AD may experience as many as nine flare-ups per year, each lasting up to 15 days.

Leading dermatologist Dr. Irina Turchin discusses the impact of atopic dermatitis and the significance of new advancements in treatments to support AD disease management in Canada.

WHAT IMPACT CAN ATOPIC DERMATITIS HAVE ON QUALITY OF LIFE?
Atopic dermatitis is more than itchy skin. There are various ways that AD can have an impact on patients. Due to the significant itch that patients experience, it can result in a disruption of regular sleep, recurrent eczema flare-ups and a lack of disease control in moderate to severe AD. As AD is a visible skin condition, patients often experience anxiety, depression, low self-esteem, and psychosocial issues which can impact overall quality of life. Many patients will bring their treatments with them while traveling, as the eczema flare-ups can happen at any given time.

HAVE THERE BEEN RECENT RESEARCH INNOVATIONS?
We’ve had several clinical developments investigating topical, systemic and biologic therapies. Today, there are trials taking place to target different therapeutic pathways and indications, such as hand dermatitis that is commonly seen in atopic dermatitis patients. We’re fortunate to have many new effective treatments on the horizon to support better disease management. Particularly, what will be significant in the next year is the introduction of Janus kinase (JAK) inhibitors for the treatment of moderate to severe AD. JAK inhibitors turn off JAK-STAT signalling pathways important in AD pathogenesis limiting the transcription of cytokines that cause immune activation, inflammation, and itch. There are also other molecules targeting different disease mechanisms that are still in clinical trials. Research and innovation continue to take place so that we can continue to find effective solutions for managing AD. I believe that in the next two to five years, AD will be a completely different disease in terms of management.

WHAT ARE THE DIFFERENTIATING FACTORS OF JAK INHIBITORS FOR PATIENTS?
JAK inhibitors have been shown to have high efficacy, rapid treatment responses and rapid and substantial improvement in pruritus that we haven’t seen with traditional systemic and biologic agents. Due to their efficacy, JAK inhibitors have been shown to improve patients’ quality of life and well-being. Traditionally, we’ve used off-label systemic therapies to manage AD, most of which are associated with significant adverse events, health risks and tolerability issues. JAK inhibitors are usually well-tolerated and promise to have better risk benefit profile compared with traditional systemic therapies that are now used off label.

HOW CAN JAK INHIBITORS CONTRIBUTE TO AD DISEASE MANAGEMENT?
JAK inhibitors can be provided as an oral therapy which can offer convenience and ease of use for patients. With JAK inhibitors, patients will see a rapid and significant improvement in pruritus which in turn will improve their sleep. It will be interesting to see what happens once we diminish AD disease burden and observe how this impacts family life, social function and work productivity. I am looking forward to seeing the real-world experience of these impacts on patients in a positive way.

WHAT MESSAGE WOULD YOU LIKE TO SHARE?
As a dermatologist, it’s exciting to see the continued advancements in AD disease management. I have had the privilege of being involved in clinical trials and have seen first-hand, the impact of JAK inhibitors on disease management and quality of life for my patients. I’m looking forward to offering these treatments outside of clinical trials and essentially contributing to the broader impacts in the AD patient population. Awareness and understanding of AD remains crucial for both healthcare professionals and patients. With new advances in treatment, continued research and innovation, we aim for optimal AD management for every AD patient for years to come.

Dr. Irina Turchin is a dermatologist at Brunswick Dermatology Center in Fredericton, New Brunswick. Dr. Turchin has a Bachelor of Science degree from the University of Alberta. She did her medical training at the University of Calgary and completed Dermatology residency at McGill University. Dr. Turchin is board certified in Dermatology in both, Canada and United States and holds memberships with Canadian Dermatology Association, American Academy of Dermatology and European Academy of Dermatology. Dr. Turchin is interested in medical innovation and is involved in clinical trials.

With the onset of the COVID-19 pandemic, the global community – including health care providers – had to shift gears from providing in-person services to offering more remote options. Vancouver Coastal Health Research Institute clinician-scientist Dr. Kendall Ho was one of those leading the charge, spearheading the launch of the HealthLink BC Emergency iDoctor-in-assistance (HEiDi) service shortly after the start of the pandemic.

Now, new research from Ho shows that the virtual physician service successfully redirected 72.1 per cent of callers away from in-person emergency or clinic assessments and 15 per cent to emergency departments for urgent care.

RESEARCHERS FOUND THAT THE VIDEO-BASED SERVICE HELPED CALLERS RECEIVE MORE ACCURATE AND TIMELY CARE RECOMMENDATIONS

HEiDi builds on HealthLink BC’s 8-1-1 phone line, which connects British Columbians with registered nurses. Nurses use an online clinical assessment algorithm and their professional judgment to triage callers into four colour-coded categories of escalating concern:

- Green – home care treatment recommended
- Black – schedule an appointment with a care provider as soon as possible
- Yellow – see a care provider in person within 24 hours
- Red – go to an emergency care facility immediately

The HEiDi service started in April 2020 to connect callers in the ‘yellow’ category with a team of virtual physicians – it began connecting with ‘red’ category callers in November 2020. Confidential appointments take place through a phone or video conferencing platform, the latter of which provides physicians with a visual aid to assist with their assessment and patient care recommendations.

“Many callers who call 8-1-1 do not need to see a doctor urgently, which is why we focused on the patient population nurses identified as needing to visit a care provider within a day,” says Ho.

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Dr. Kendall Ho is the director of the eHealth Strategy Office in the Faculty of Medicine and a professor in the Department of Emergency Medicine at the University of British Columbia. He is a real-time support lead with the BC Emergency Medicine Network.
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Smoking cessation on hospital property:
Using evidence to clear the air on best practices

By Sheila Tucker

There’s no getting around it – hospitals can be stressful places, and stress can be a significant trigger for people who smoke. But smoking on hospital property creates issues for everyone. It exposes non-smokers to second-hand smoke; and the healthcare facility, which should represent health and healing to the broader community – is anything but that when the grounds are littered with cigarette butts and polluted air.

Smoking-free environments have been the norm in Canada for some time. All Canadian jurisdictions have legislation or by-laws concerning smoking and vaping in public spaces. The rationale for these laws and policies is to reduce exposure to second-hand smoke among patients, staff, and visitors; encourage smoking cessation; and allow health authorities to “lead by example” and project a healthy image in communities.

While there are many similarities in approaches to smoking cessation in health facilities, there is variation. Some jurisdictions have banned smoking entirely on facility property, while others allow smoking in designated areas on facility grounds. Despite these measures, smoking on hospital property continues to be a problem in many areas across Canada.

CADTH recently looked at the current evidence on best practices for implementing smoke-free policies on hospital grounds as well as enforcement frameworks used across Canada to reduce or eliminate smoking on hospital property. CADTH is an independent agency that finds, assesses, and summarizes the research on drugs, medical devices, tests, and procedures. The CADTH review identified a range of practices that support a smoking-free environment on hospital grounds. It found that the most effective policies are part of comprehensive smoking cessation programs that include cessation support for staff and patients; effective training, communications, and signage; and interventions such as public education campaigns aimed at “de-normalizing” smoking.

Many smoke-free grounds policies create an expectation that all staff will play a role in ensuring compliance with the policies. But evidence suggests that staff may require additional training or educational resources about smoking cessation to optimally counsel patients and visitors. Additionally, enforcement staff may require tools and training resources to help them feel adequately equipped to approach individuals who are smoking, advise them of the policy, and achieve the desired outcome while avoiding confrontations.

Jurisdictions under provincial legislation have robust enforcement mechanisms, with the option to levy fines to both individuals or corporations found to be not complying with or not adequately working to ensure compliance with existing legislation. There is limited evidence that this approach is effective at supporting behaviour change or reducing how often fines are issued. Compliance models that rely too heavily on enforcement and do not adequately recognize nicotine dependence may be seen as needlessly punitive. However, creating an accountability mechanism whereby facility or health authority leaders are held responsible for non-compliance may help ensure that these organizations remain focused on smoke-free grounds initiatives. Having provincial legislation in place also allows the responsibility of enforcement to be extended to public health inspectors and peace officers. However, ensuring there is adequate capacity to conduct inspections and enforce the legislation consistently seems to be a challenge in many jurisdictions.

At in-patient psychiatric facilities, there can be unique considerations associated with implementing smoke-free policies, given the relationship between mental health and substance use issues and tobacco use. Psychiatric facilities have often been considered exceptions in the context of no-smoking legislation and policy. Despite perceptions, evidence suggests that individuals living with mental illness are often interested in quitting smoking and capable of doing so with proper supports, and that smoke-free policies improve the overall health and safety of patients. The Centre for Addiction and Mental Health (CAMH) has implemented tobacco-free policies across all its grounds using a holistic approach to remove tobacco-related triggers that could inhibit attempts to quit. A 2017 study found that the CAMH policy is feasible, resulted in more positive attitudes toward no-tobacco policies, and led to a statistically significant decrease in patient agitation.

In many jurisdictions, tobacco legislation provides exemptions for cultural reasons, including Indigenous ceremonies during which smoke is produced. Some healthcare facilities across Canada have created indoor spaces equipped with ventilation for Indigenous ceremonies involving smoke. There is a distinction between ceremonial tobacco, which is made from plants and considered sacred by many Indigenous communities, and commercial tobacco, which contains harmful chemicals and is highly addictive.

There are no simple solutions to resolving the issue of smoking on hospital property. However, resources have been produced by organizations in Canada and internationally that are designed to address this complex issue. CADTH’s report on best practices to facilitate smoke-free hospital grounds is freely available at cadth.ca/smoke-free-hospital-grounds. To learn more about CADTH, visit cadth.ca, follow us on Twitter @CADTH_ACMTS, or speak to a Liaison Officer in your region: cadth.ca/contact-us/ liaison-officers.

Cataract surgeries have been performed for centuries, but the most significant and rapid innovation in surgery advancements has occurred in the past 20 years with Alcon at the helm. Modern cataract surgery uses state-of-the-art technology at every step – from diagnostics and surgical instruments for delicate incisions to novel intraocular lens (IOL) materials – all to provide patients with the best possible outcomes.

“Every year there’s something new and exciting in cataract surgery innovation,” says ophthalmologist Dr. Kathy Cao. “When I was training, most of the lenses I use now weren’t available. Over the years, there have been improvements in the actual material of IOLs, multifocal technology and how the surgery is done.”

MORE LENS OPTIONS TO PROVIDE PATIENTS WITH EXCEPTIONAL CLARITY

Traditionally during cataract surgery, a monofocal lens is selected for patients. This allows them to see clearly at one – typically far – distance, but they generally need glasses to see clearly at all distances. Recent innovations in the precision edge design and material of monofocal IOLs, like the Clareon® monofocal IOL, have exceptional clarity while reducing visual disturbances. Advancements such as toric lenses can also correct astigmatism for the 71 per cent of cataract patients that are clinically appropriate for toric IOLs like the Clareon® Toric lens, which gives patients even more vision options.

“Toric monofocals open up more options for more patients,” says Dr. Cao. “I think that in this day and age, where patients want better vision after cataract surgery, correcting their astigmatism is key.”

EXTENDING VISION FOR PATIENTS

In recent years, new categories of multifocal intraocular lenses have been introduced that allow a surgeon to correct presbyopia as well as cataracts. More patients are choosing presbyopia-correcting IOL (PClOIL) lens options over traditional monofocal IOLs. These revolutionary lenses allow patients to see clearly at multiple distances with less dependence on glasses.

“A lot of people don’t realize how much of our everyday activity is done at an arm’s length,” says Dr. Cao. “If you choose a monofocal lens for distance so you can drive without glasses, the dashboard area in your intermediate vision will be blurry.”

Extended vision lenses, like the AcrySof® IQ Vivity® and Vivity® Toric lenses, provide an extended range of vision for distant and intermediate tasks, like driving or reading a smartphone, and offer functional near vision for tasks, like reading a menu or putting on makeup, with less reliance on glasses.

“Some people may need reading glasses when reading the fine print on a label, but extended range of vision lenses can provide a lot of freedom from wearing glasses every day,” explains Dr. Cao.

For those who want to see without glasses after surgery, that’s also a possibility. Trifocal lenses, like AcrySof® IQ PanOptix® and PanOptix® Toric provide clear vision at all distances. The PanOptix® IOL is designed to allow patients to perform daily activities such as reading a book or ordering from a menu without the need for glasses. This trifocal lens provides the ability to see clearly at 60 cm, the preferred distance for tasks like as working at a computer or reading from a tablet.

“The landscape of cataract surgery has changed dramatically in the past few years,” says Dr. Cao. “It’s important that patients and doctors work together to find their best lens option. Cataract surgery happens one time in your life – you want to make the right choice.”

Talk to your doctor to see if these intraocular lenses are right for you.
Putting clients and families first in pandemic policy making

By Elaine Widgett

Only four months into pandemic restrictions and deep uncertainty, families, staff and leaders at Toronto’s Holland Bloorview Kids Rehabilitation Hospital collectively relaunched one program that had been suspended – because it was too important for our young clients’ recovery.

The long-standing Weekend Pass initiative would send inpatients home and back to the hospital, a move contrary to the limited in-and-out privileges occurring at most health-care institutions. This bold move, in the early days of COVID, would prove to be the correct path to take.

In the spring of 2020, health-care organizations around the country enforced strict precautions to ensure the safety of on-site patients, staff and visitors. This was no different for us here at Canada’s largest children’s rehabilitation hospital.

There were, however, specific implications to certain specialties within the hospital, including the hospital’s Brain Injury Rehabilitation Team (BIRT) and Specialized Orthopedic and Development Rehab (SODR) team. Not only was it necessary to restrict onsite caregivers and visitors, but both teams also had to manage without the Weekend Pass program on which it relied to guide successful rehabilitation journeys.

In the program, inpatient clients return home at week’s end to practice therapies, medications and other support learned while admitted for rehab. At first, it was deemed too risky for clients to come and go. It didn’t take long, though, for the impact of these changes to come into sharp focus.

“Each child could have only two onsite caregivers, and the hardest part was that no siblings under 16 could come,” says Nicholas Joachimides, BIRT operations manager.

The emotional toll was particularly acute for some. One single-parent family lived a five-hour drive away from Holland Bloorview. The mother would stay at the child’s bedside while the father drove back and forth to see the sibling, now living with extended family.

“Families like these were forced to decide whether to finish rehab early in order to be discharged home, or stay and complete their care,” Nicholas says.

Beyond the increased isolation were the repercussions on the rehabilitation process itself. Staff could no longer ensure that new skills being learned would transfer home.

“Our therapists work on functional goals that are specific to individual families,” says Tess Bardikoff, BIRT social worker. “Practicing skills one-on-one with a therapist in our gym is not the same as practicing skills at home like navigating a staircase, toileting, bathing.”

This element is key to staff understanding where each child is at in their journey, and key to building confidence when discharged.

Working with families to reinstate the Weekend Pass

Holland Bloorview has always prioritized authentic and meaningful engagement of clients and their families. Listening to their needs despite a pandemic was no exception. In July 2020, staff and client families co-created a thoughtful approach that reinstated the Weekend Pass program – on the back of evidence-informed practices and a focus on client safety and family needs.

Cheryl Peters, a family leader and mother to a Holland Bloorview client, sits on the hospital’s pandemic steering committee to provide the parent perspective on policies and pandemic recovery efforts. “It’s so important for clients to be able to go home on weekends and get ready for life beyond the inpatient clinic. It’s vital for their successful rehabilitation journey and for helping families regroup and get back to a new ‘normal’.”

The development of a comprehensive checklist signaling client readiness, while providing parent and caregiver education regarding safety protocols, were key to successfully reinstating this program.

A MEANINGFUL DIFFERENCE

With weekend passes back in play, BIRT and SODR staff saw immediate positive changes in demeanor among the children, who seemed more engaged in therapy.

“Parents would describe important developments, like their child being able to use their left hand again while playing with their sister,” Tess says. “These kids can make dramatic improvements when they are at home with their siblings – improvements that are great jumping off points when they return to us to continue their efforts.”

After the program returned, Nicholas says the conversations reverted back to what they needed to be – focused on rehab and client goals.

“In fact, we were able to accelerate both admissions and discharges, allowing kids to return home and restart their lives sooner.”

Relaunching the Weekend Pass program was successful because it was a decision made by all stakeholders, including front-line staff and the families they care for.

“The ability to flexibly institute a program amidst the regulations and uncertainty is a testament to trusting families, and to working with them both within our walls and beyond them,” Nicholas says.

Elaine Widgett is senior director, inpatient rehabilitation and complex continuing care at Holland Bloorview Kids Rehabilitation Hospital.
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Aliyah Hoo Kim-Baker knew from an early age that she wanted to work in the community. At 16, she visited Ethiopia, and it was there she saw first-hand the impact nurses had providing HIV education in the community. It was also there she met a Toronto nurse who told her that nurses are advocates. “She assured me that I would be able to do all of that, while serving communities directly,” the RN recalls.

In 2013, Hoo Kim-Baker started the nursing program at Ryerson University. She would soon learn it wasn’t exactly as she’d envisioned it. “I remember feeling super outcasted,” she says about not relating to most students in her classroom. Unlike others, she didn’t come from a privileged background. She worked as a waitress to pay for her education. She also saw a lack of Black representation among her nursing professors. “It was a sea of white professors who seemed to come from very privileged backgrounds,” Hoo Kim-Baker says.

Adding to the pressure, Hoo Kim-Baker struggled with her mental health. Diagnosed with clinical depression, she felt unrelenting fatigue, a lack of motivation and no appetite. “I’m moving and working, but inside, I felt absolutely nothing,” she says. Reaching out for support at a Ryerson clinic, she couldn’t find a Black health professional who could truly understand what she was going through. Things began to change in her third year of study, when Hoo Kim-Baker met a professor who normalized what she was feeling and advocated for her by allowing deadline extensions on assignments and building a class/placement schedule that fit her needs. “She really worked hard for me to get the support I needed without judgment.” It was also during this time that she was referred to a health-care provider who was a person of colour and who provided different options for treatment, from psychotherapy to medication.

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“What I really liked about these placements was the communities that I was working with. I felt like I was getting the opportunity to give back,” she explains. “I felt like I had value and I had purpose.”

In 2017, Hoo Kim-Baker began to focus more on community health nursing in her final years of university. She did a placement at a shelter where she was able to help women feel safe and find housing. She also did a placement at St. Michael’s Hospital, where she worked directly with people living with addiction in the community, providing support on their journey to sobriety. “What I really liked about these placements was the communities that I was working with. I felt like I was getting the opportunity to give back,” she explains. “I felt like I had value and I had purpose.”

Graduating in 2017, Hoo Kim-Baker’s first job was with S.R.T. MedStaff. She worked with clients of Toronto Community Housing, helping individuals in neighbourhoods heavily hit by poverty and crime. She provided everything from wound care to end-of-life care to clients in their homes. She also made certain her clients’ living and social conditions were secure, ensuring they had access to food banks, a main source of income, and the Ontario Disability Support Program, if needed.

After three years of helping clients in marginalized communities, Hoo Kim-Baker decided to shift gears and start to focus on changing the culture of nurses in her organization. Often times, she would hear nurses talking about clients with intolerance and with no understanding of the oppressions that exist in the system today. When a position opened up for a clinical nurse educator in 2020, she knew this role would empower her to make that change happen.

She is now a clinical nurse educator who teaches health-care providers to provide care through an anti-oppression, trauma-informed framework. **Continued on page 24**
Does your team have the skills and knowledge needed to provide high-quality palliative care?

People living in Canada need health-care providers with the necessary skills and knowledge to address their palliative care needs – whenever and wherever palliative care services are required, be it in hospital, hospice or the home. However, access to early and integrated palliative or end-of-life care varies dramatically from large urban centres to rural and remote communities, and only 15% of people who want to die at home are supported to do so.

“High-quality palliative care provides the physical, psychosocial and spiritual support people and their families or caregivers need as they navigate some of their most challenging life events,” says Dr. Craig Earle, Chief Executive Officer of the Canadian Partnership Against Cancer (the Partnership).

“At present, there are not enough health professionals across Canada with the necessary skills and knowledge to deliver high-quality palliative care in all settings and jurisdictions.”

THE CANADIAN INTERDISCIPLINARY PALLIATIVE CARE COMPETENCY FRAMEWORK

The Canadian Interdisciplinary Palliative Care Competency Framework was developed by an extensive network of palliative care experts and stakeholders, Health Canada and the Partnership to help educators and health-care administrators build palliative care capacity and competency across Canada.

The framework builds on existing provincial frameworks and aims to inform national standards by setting competencies in essential skills, knowledge and abilities for palliative care practice across five disciplines – nursing, medicine, social work, personal support work and volunteering. Competencies are organized under 12 domains of practice and can be applied both for those who specialize in palliative care and those who wish to integrate its principles into their discipline.

The competencies have been written to ensure providers understand the importance of delivering culturally appropriate palliative care that respects the needs and priorities of Indigenous peoples. As palliative care may be carried out by family, caregivers and community members, engagement with First Nations, Inuit and Métis Elders, Knowledge Carriers and community members is underway to share approaches to palliative care and identify tools and practices that could be helpful for other communities and organizations. The engagement is also an opportunity to identify shared priorities for palliative care in communities.

To live well with cancer, individuals and families need support for the physical and emotional symptoms that can make the cancer experience so difficult. Adoption of this framework will help to establish equitable access to palliative and end-of-life care across Canada, advancing the Canadian Strategy for Cancer Control and integrating palliative care in all cancer care settings.

The framework will serve as the foundation on which national professional organizations and universities and colleges can build comprehensive palliative care programs for the professional communities they serve. It includes discipline-specific self-assessment tools and education resources to help care providers and policy-makers assess competencies, identify learning needs and monitor progress toward providing high-quality palliative care in multiple settings.

AT PRESENT, THERE ARE NOT ENOUGH HEALTH PROFESSIONALS ACROSS CANADA WITH THE NECESSARY SKILLS AND KNOWLEDGE TO DELIVER HIGH-QUALITY PALLIATIVE CARE IN ALL SETTINGS AND JURISDICTIONS.”

### THE FRAMEWORK WILL BENEFIT:
- Individuals, managers and human resources personnel who need to fill skills’ gaps and guide hiring practices.
- Educators who want to identify minimum standards for palliative care competencies, weave the development of essential skills into existing curricula or build new curricula to teach the competencies.
- National accreditation and regulatory agencies that are establishing minimum national standards in palliative care.

The competencies in this framework are by no means the end of Canada’s palliative care journey. While it is designed to serve as a high-level guide for all jurisdictions, the framework will evolve with the practice of palliative and end-of-life care to meet the needs of those who use it and those who would benefit from palliative care in Canada. For example, other discipline-specific competencies may be integrated into the framework in the future.


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The 2019-2029 Canadian Strategy for Cancer Control (the Strategy) is a 10-year road map to improve equity in the cancer system and cancer outcomes for all people in Canada. As steward of the Strategy, the Partnership and its partners are working to deliver information and supports for people living with cancer, families and caregivers by addressing the limited and unequal access to palliative and end-of-life care across the country.
Bringing a voice

She draws attention to the various programs and resources that the province offers to serve vulnerable clients and ensure they are getting the help they need. It may be as simple as helping to fill out a Toronto Community Housing application.

In 2020, Hoo Kim-Baker joined the Registered Nurses’ Association of Ontario (RNAO) Black Nurses Task Force in its mission to combat racism within the nursing profession. “I knew that most (task force members) would probably not be from a community health background, so I wanted to… give more diversity to the different roles that exist in the profession,” she says. She shares her personal experiences with racism as a former nursing student and community health nurse, and draws attention to the gaps in the sector that need to be addressed.

Hoo Kim-Baker started the NP program at the University of Toronto this fall and is hoping in the next three to five years to have her own hospice that specializes in culturally competent end-of-life care.

“In Ontario, we recognize that while palliative care is available, it’s actually the least utilized by Black patients…and very few Black patients have the opportunity to die with dignity and with support,” she says. It is with this in mind that she sees a clear path forward.

Radial access opens up a whole new pathway for neurovascular procedures

First-of-its-kind radial access catheter for neurointerventions

By Roxane Bélanger

or neurovascular patient Dilyse Bertrand, the technology that allowed for her quick release from hospital this summer was “a godsend.”

Bertrand was rushed to the hospital with a brain aneurysm a few years ago, and had coils inserted in her brain to close off the aneurysm via access through the groin, known as a transfemoral approach, or TFA. This year, at her annual MRI, it was clear that a procedure was required to adjust the coils. Instead of using the traditional femoral approach on Bertrand, Dr. Sachin Pandey, radiologist at the London Health Sciences Centre, opted to use a radial access catheter for the adjustment procedure, accessing the vasculature through the patient’s wrist rather than the groin.

When compared to the traditional femoral approach (TFA), transradial access (TRA) has been associated with significantly reduced access site complications when accessing the neurovasculature, according to a recent study published in the Journal of Neurointerventional Surgery. The study found that due to its superficial location, the radial artery is more easily compressible, leading to reduced risk of access site complications.

Licensed by Health Canada in July 2021, the RistTM Radial Access catheter from Medtronic is the only catheter currently indicated for neurovascular radial access in Canada.

“Rist represents the next step in the transformation of neurovascular procedures performed via the radial arterial approach,” says Dr. Pandey, who is also division head of Interventional and Diagnostic Neuroradiology and Chair of the Ontario Medical Association’s Section of Neuroradiology. “This is the first system designed from the ground up for use in the brain from wrist-access sites.”

In addition, the catheter is designed to go higher in the internal carotid artery to provide a stable platform and has a more flexible distal end, designed to navigate through tough acute bends in the radial pathway.

“Cardiac interventions have been treated through TRA techniques for many years due to lower access complication rates,” says Dr. Pandey. “In my experience, the radial approach is safer, more cost-effective, and more comfortable for many patients. Though each patient is a unique in terms of vasculature, I believe radial access will allow us to expand our ability to offer a safe and comfortable procedure for patients,” he adds.

As the first patient in Canada to undergo a procedure with the Rist Radial Access catheter, Dilyse Bertrand appreciated the benefits. “I wanted to be out as soon as possible, rather than staying a couple of days like the last time, and the hospital bed can go to someone else sooner. Technology really is a godsend.”

Victoria Alarcon is communications officer/writer for the Registered Nurses’ Association of Ontario (RNAO), the professional association representing registered nurses, nurse practitioners and nursing students in Ontario. Since 1925, RNAO has advocated for healthy public policy, promoted excellence in nursing practice, increased nurses’ contribution to shaping the health-care system, and influenced decisions that affect nurses and the public they serve. For more information about RNAO, visit RNAO.ca or follow us on Twitter, Facebook and Instagram.

Roxane Bélanger is an External Communications Specialist at Medtronic.
Building a better future with biosimilars

By Teva Canada

Biologic medicines have been crucial in the treatment and prevention of diseases for over half a century. Though the benefits of biologic medicines are clear, Canadian consumers still face the obstacle of finding treatment options that are easily accessible and affordable. Biosimilars address this gap and provide additional treatment alternatives to both healthcare professionals and patients.

COMMITTED TO A FUTURE IN BIOSIMILARS

“Biosimilars are a new chapter in the therapeutic oncology setting in Canada and represent a growing focus for Teva since they will allow us to increase access to important therapeutic options. Moreover, Teva’s biosimilars will have the potential to reduce costs by providing lower-cost treatment options for patients,” says Christine Poulin, Senior Vice President and General Manager of Teva Canada.

At Teva, we understand you have questions about the efficacy and quality of biosimilars. That is why we are investing considerable resources into building your confidence with the highest quality biosimilars, real world experience, support to patient organizations for the development and distribution of comprehensive patient educational tools, and state-of-the-art manufacturing facilities.

We are committed to growing our already expansive portfolio of over 1,800 medicines by investing in the future of biosimilars in Canada, with expertise, experience and dedication you can trust.

BIOLOGICS AND BIOSIMILARS

Biologics, sometimes referred to as large-molecule drugs, are protein-based therapeutics. Biologics are produced using unique cell lines and are manufactured from natural sources such as human and/or animal cells, yeast, and bacteria.

Some key defining features of biologics include:
- Being produced in living cell cultures
- Having high molecular weight
- Having complex, heterogeneous structure, and manufacturing process
- Being strongly process-dependent
- Being impossible to fully characterize molecular composition and heterogeneity
- Being unstable and sensitive to external conditions

Biosimilars are biologic medicines that are highly similar to their reference biologic drug, which has already been approved for sale. When producing biosimilars the main difference from the reference biologic is in the clinically inactive ingredients being used in the manufacturing process. There are no clinically meaningful differences in the safety, purity, and potency of biosimilars when compared to the reference biologic.

Biosimilars are approved by Health Canada based on a thorough comparison to a reference drug and may only enter the market after the expiry of the reference biologic drug patents and data protection.6,7

Generic drugs are chemical based, small molecule drugs that are generally easy to copy. VARYING APPROVAL PROCESSES FOR BIOLOGICS, BIOSIMILARS AND GENERICS

Health Canada has developed a robust, science-based regulatory framework for biosimilars that reflects many approaches adopted by other major drug regulatory agencies. Health Canada’s rigorous standards for authorization mean that patients and healthcare providers can have the same confidence in the quality, safety and efficacy of a biosimilar as any other biologic drug.

Biosimilar manufacturers must provide information to Health Canada comparing the biosimilar with the reference biologic drug.

Unlike generic drugs, biosimilars are not equivalent to the reference product because their chemical characteristics cannot be precisely duplicated during the manufacturing process.
- Health Canada reviews each biosimilar as if it were a new drug. It does not consider a biosimilar to be bioequivalent or interchangeable with the reference product.
- On the contrary, generic drugs must meet Health Canada’s standards for bioequivalence.

THE FUTURE OF BIOSIMILARS IN CANADA

The availability of biosimilars in Canada is expected to increase over coming years. This will have a profound and dynamic impact on the Canadian healthcare system.

Teva Canada understands that the Canadian healthcare market is changing. We want to be an active partner of this change. That’s why we are focusing our research and development efforts on innovative biologics and biosimilars while remaining dedicated to providing products that both consumers and providers can trust.

THE BENEFITS OF BIOSIMILARS IN THE CANADIAN MARKET

While biosimilars are still new in the Canadian landscape, they are quickly gaining notoriety. Pre-2017, only six biosimilars were approved in Canada; however, as of 2021, a total of 36 biosimilars have been approved, showing a growing rate in approval and acceptance for biosimilars in Canada. Biosimilars are predicted to contribute to the sustainability of the Canadian healthcare system via:
- Reduced cost: Biosimilars typically cost less than their reference biologics
- Increased competition: Biosimilars introduce competition, which in turn may also help reduce costs
- Improved drug accessibility: Savings from biosimilars could be put towards funding for other much-needed therapeutic areas

TEVA CANADA’S COMMITMENT

At Teva Canada, we are committed to the future of manufacturing and delivering high-quality biosimilars to all Canadians.

As an innovator in Canadian medicine, we focus on research and development and early-stage opportunities to secure our commitment to biosimilars.

We are looking forward to expanding our medicine cabinet to include a variety of state-of-the-art biosimilars and continuing to help Canadians.

When it comes to biosimilars, you can trust in Teva Canada as a key partner.
A new analysis by the Ontario Medical Association found the COVID-19 pandemic created a staggering backlog of almost 20 million health-care services, including doctors’ visits, diagnostic tests, treatments and surgeries.

This backlog is based on OHIP data from the start of the pandemic in March 2020 to September 2021. It will take years to clear, even if doctors and other health-care professionals worked even more days and longer hours and there were more ORs, hospital beds and other resources to support them.

It’s in addition to pre-pandemic wait times that were well above recommended timelines for many procedures. And it doesn’t address the other cracks in the health-care system that widened during the pandemic. It doesn’t include the looming mental health tsunami or the patients who were not diagnosed or treated during the pandemic and now are showing up sicker and requiring more aggressive treatment.

The OMA offers solutions for all these issues in a sweeping new report that aims to reverse the decline in Ontario’s health-care system over the next four years and make the province a national and global leader.

Prescription for Ontario: Doctors’ Five-Point Plan for Better Health Care is the result of the broadest consultation in the OMA’s 140-year history. More than 110 health-care organizations, social service agencies and community leaders provided input. Almost 8,000 Ontarians from 600 communities across the province shared their views through an online survey. Doctors representing a wide range of specialties and regions gave their expert advice.

Continued on page 53
MEDICAL TECHNOLOGY MAKING A DIFFERENCE
As the national association representing the medical technology (medtech) industry in Canada, we welcome this opportunity to be a part of the annual Hospital News Medical Technology supplement. This supplement provides an opportunity for medtech companies to showcase a few of the many contributions they’re making to the health care system and it provides a chance for our association to showcase some of the many areas that we’re working collaboratively with our health system and government partners to address (including technology solutions to address Canada’s medical services backlogs and supporting Alberta’s world-leading medical device traceability initiative).

On behalf of our association and our members, I’d also like to take this opportunity to express our profound gratitude to all the health care workers throughout Canada that have ensured Canadians have been able to receive high-quality care throughout the pandemic. Your resilience and compassion have been unparalleled and we are profoundly grateful for all you’ve done during these incredibly trying times.

We recognize the immense burden the pandemic has placed on Canadian health care workers and our health care system. The pandemic has shone a light on the limitations of our health system in its current state, but it has also expedited the adoption of innovative approaches to care, enabled by technology, which needs to continue. We were pleased host a variety of provider and industry thought leaders virtually at our association’s annual conference recently where this was a key topic of discussion. We’re very excited to work with our counterparts in the US, AdvaMed, as they bring North America’s largest medtech-focused conference to Canada for the first time in 2022.

In many cases the innovative new approaches to care that have been adopted during the pandemic include digital health elements. Medtech companies increasingly offer digital health solutions and connected device technologies that provide opportunities to enable more efficient care, higher quality care and empower patients to take greater control of their own health. While we have a long history of advocating for the adoption of to leading edge, innovative technology solutions that provide valuable outcomes, our association is also increasingly also working closely with a multitude of stakeholders with an interest in the digital health space to enable the adoption of these technologies and reduce barriers that act as impediments to their use.

Another area of key recent focus to our association is the area of ensuring Canada’s supply chain of medical devices and products. The pandemic has strained supply chains for these products and has exacerbated existing issues. We’re working closely with our member companies, our health care partners and government officials on issues relating to this critical issue. We will soon be releasing a White Paper on this topic and offer solutions on a variety of aspects relating to this issue, including enhancing the use of data and transforming procurement practices to have a greater focus on value and improved patient outcomes. We will continue to work closely with all our partners to ensure that clinicians and patients can continue to access needed products.

And while there are signs of promise in some jurisdictions in Canada with decreasing Covid-19 caseloads, we continue to advocate for an “all the tools in the toolbox” approach when it comes to Covid-19 testing. We have worked closely with governmental and health systems leaders on all aspects of testing throughout the pandemic, and while progress has been made, many clinicians have indicated that testing – including rapid antigen testing – continues to be an underutilized tool in the fight against this virus. Our association will continue to aid in these efforts in any way that we can.

These are just a few of the many areas of recent focus for our association. We pride ourselves on being an association that takes a collaborative approach to all the work that we do, and we truly value our engagement with our health system partners. If there are any issues or opportunities that you believe we can address together – please reach out to us.

More than ever, thank you for all that you do for Canadian patients.

Sincerely,

Brian Lewis, CEO, Medtech Canada
100 years ago, the discovery of insulin revolutionized healthcare.

We are proud of our role in delivering innovation for Type 1 diabetes, and we know there’s much more to do.

Join the conversation about the future of healthcare innovation by tuning into The Next 100, hosted by Neil Fraser.

Available on Apple, Spotify & Google Podcast apps.
Innovation adoption to address the medical services backlogs in Canada

Across Canada, Canadians are waiting longer than ever to receive priority medical services that can save lives, alleviate suffering, improve health outcomes and enhance quality of life. While wait times for medical services in Canada were problematic prior to COVID-19, the pandemic has exacerbated this issue, forcing many Canadians to live in pain or face delays for life-saving treatments.

As our federal and provincial governments and Canadian health system leaders look to rebuild healthcare systems across our country post-pandemic, it’s imperative to ensure that innovative technologies and solutions are utilized as a key element to address these challenges. Medtech Canada and the medical technology industry want to be a partner in the solution.

As Prime Minister Trudeau looks to implement his campaign commitments on healthcare – including $6 billion to address the backlog of surgeries and procedures – Medtech Canada would urge him to include innovation adoption as a part of these strategies. It’s also imperative that the Trudeau government follows through on its campaign commitment to, “provide $3.2 billion to the provinces and territories for the hiring of 7,500 new family doctors, nurses, and nurse practitioners”, as shortages of these critical health human resources are hindering Canadian health care’s ability to deliver care.

Canadians have entrusted Prime Minister Trudeau and his team to deliver meaningful and positive results to improve health care across our country, and his government’s commitments around addressing surgical and procedural wait times are much welcomed and highly necessary.

Provinces are beginning to recognize the potential for innovation to be a part of the solution, as exemplified by Ontario’s recently announced $30M Surgical Innovation Fund and Quebec’s call for medtech solutions to address this issue last year, but the federal government can play an important national role on this issue, particularly given its fiscal capabilities.

Canada can make meaningful, long-term impacts for patients and our health care systems across the country by facilitating innovation adoption as a part of these strategies. While the pandemic progressed some innovation adoption out of necessity, Canada continues to be a poor adopter of innovation in health care due to a lack of dedicated funding, short-sighted procurement practices and siloed health care budgets.

As the Trudeau government seeks to address surgical and procedural backlogs across the country, let’s take this opportunity to “Build Back Better” by ensuring that innovation is included as a part of the solution.

Some examples of the solutions available from medical technology companies in Canada to address medical services backlogs, reduce wait times and create health system efficiencies at this critical juncture in Canadian health care include:

• Utilizing technologies that enable clinicians to undertake minimally invasive surgical procedures that can reduce time spent in the operating room, enable improved patient outcomes and faster recoveries, while reducing post-surgical visits and complications.
• Providing the technologies, clinical expertise, clinical education and efficiency solutions to enable same-day orthopaedic procedures.
• Working with medtech companies to connect vital signs monitors to hospital health information systems, which can significantly reduce nursing hours spent dealing with administrative documentation.

Medtech Canada will soon be launching a new section of our microsite (medtechinnovation.ca) that will highlight stories about how medical technology companies can help address medical services backlogs and create health system efficiencies in Canada.

We look forward to continuing to work collaboratively with our government and health care partners to address these challenges together.
OBIO: Partnering on innovation to improve patient care

Canada has a strong reputation in health research and launching health science companies, but less so in successfully adopting innovative technologies across the healthcare system, let alone scaling these start-ups into globally competitive companies. But the Ontario Bioscience Innovation Organization (OBIO®), a not-for-profit organization dedicated to advancing health technology innovation and commercialization, sees these challenges as two sides of the same innovation coin and has developed a single platform to solve both with the Early Adopter Health Network (EAHN™).

Co-created with healthcare organizations and industry partners, the OBIO EAHN provides demand-side innovation solutions and furnishes Canadian companies the opportunity to introduce new technologies to the healthcare system, while removing the burden of technology and industry partner screening from the member health organizations. In this collaborative ecosystem, health technology companies and healthcare organizations work together to develop, test, refine, adopt, and disseminate novel technologies across the Canadian health system. This provides health science companies with a proven and repeatable path to early market access, and healthcare organizations with a pipeline of high impact innovative technologies. And, with access to local markets, companies are incentivized to stay and grow in Canada, providing more opportunities to develop additional solutions that address domestic health system needs.

How OBIO’s EAHN works

The EAHN matches Canadian companies that have innovative commercial-ready health technologies (from medical devices and diagnostics, to therapeutics and software platforms) with member health organizations, and supports these health organizations to:

- evaluate prospective health technologies;
- widely disseminate and adopt technologies that demonstrate a proven benefit to patients and result in efficiencies and cost savings to the health system; and
- become showcase sites for the effective adoption of technologies and to demonstrate Canadian technologies to a global market.

Health technology companies undergo a comprehensive vetting process before being paired with an EAHN member health organization. EAHN examines technology maturity; the clinical, social and economic impact of the technology relative to health system goals; and the organizational capability of health technology companies to commercialize and disseminate the technology at scale in the health system. Funding is provided to both the health organization members and selected health technology companies to cover the direct costs of evaluating the technology. Leveraging standard tools and processes, EAHN members engage with companies to conduct assessments of their prospective technology and make determinations of value and recommendations for procurement.

Early successes

Launched in 2019, EAHN continues to grow and now includes more than 20 healthcare organizations and 20 industry partners. The program has vetted more than 150 health technologies, supported 13 evaluation projects, and is contributing directly to building capacity and resilience of the Canadian healthcare system itself. The technologies currently undergoing evaluation and procurement projects—and many more that are waiting for EAHN funding—have the potential to support the healthcare system as it struggles with staffing shortages and procedure backlogs. From a solution that reduces the number of staff needed for patient transfers, and innovative x-ray plates that help assess lung injury from COVID-19, to smart CT scheduling and digital pathology management platforms to maximize patient throughput, EAHN member health organizations are keen to deploy these types of technologies in their facilities.

Early success is a direct result of EAHN’s unique program design. A comprehensive and exercised suite of agreements and project templates protect the interests of all parties and streamlines project launch and execution. Generous funding supports both the member health organization and the company, and project reimbursements are milestone-based, thus minimizing administrative overhead. Lastly, the EAHN program lives within the broader OBIO ecosystem of programs to further support healthcare organizations and companies.

The COVID-19 pandemic has demonstrated first-hand the important role that the health science industry plays in responding to a global health and economic crisis. Bioscience solutions (medical devices, diagnostics, therapeutics, vaccines, digital health, etc.) are not only needed to support the domestic healthcare system, but the companies that develop and commercialize these solutions contribute enormously to their respective domestic economies. We invite healthcare organizations from across Canada, from tertiary care to community hospitals, from primary care to long term organizations, to become an EAHN member and support the advancement of patient care and the growth of an exciting domestic health innovation ecosystem.

We acknowledge the financial support of the Government of Canada. For more information about OBIO’s EAHN, or if you are interested in being part of the EAHN network, please contact Dr. Jeff Aramini at jeffaramini@obio.ca.
Using technology to enhance patient experience

By Alyssa Alibaksh

As one of the hardest hit communities for COVID-19 in the province, William Osler Health System (Osler) is making the most of its technology expertise to continue delivering safe, compassionate care. An online Emergency Department (ED) pre-registration form, ED Wait Clocks, and a Digital Patient Engagement platform have all been instrumental in further enhancing the patient experience during one of the most challenging periods in Osler’s history.

ED ONLINE PRE-REGISTRATION FORM SUPPORTS TIMELY ACCESS TO CARE

Osler’s new Online Pre-Registration Form means shorter wait times for patients to see a physician by minimizing the time needed to register for emergency care at both Osler’s Brampton Civic Hospital and Etobicoke General Hospital. The pre-registration form option is available to all ED walk-in patients at the time of their visit via a QR code displayed throughout both EDs.

The online tool gives patients greater autonomy to fill out their confidential information electronically on their personal devices, eliminating the need to verbally share personal information in a public setting. Registration Clerks are available to help patients who require help with the online tool.

“Osler’s EDs continue to be among the busiest in the province,” said Kiki Ferrari, Osler’s Chief Operating Officer. “Implementing the Online Pre-Registration Form has allowed us to streamline and enhance the patient experience by improving the accuracy of collected patient information and the time to see a physician. This is ultimately supporting more efficient patient flow, ensuring Osler can continue to care for its community when and where needed.”

ED WAIT CLOCKS HELP INFORM DECISION-MAKING

Available on its website and in each site’s ED waiting rooms, Osler’s electronic ED Wait Clocks are helping patients to plan ahead, and make informed decisions about their care. The ED Wait Clocks let patients know how many patients are being treated, how many are waiting to be treated, and what the predicted wait time is over a 24-hour period in each ED. Wait times reflect the 90th percentile – meaning nine out of 10 patients are likely seen within this estimated time.

“One of the most frequent questions patients in our EDs ask is ‘How much longer will it take for me to see a doctor?’ and the ED Wait Clocks are another way to help keep people informed during what can be a very stressful time,” said Dr. Andrew Healey, Osler’s Chief of Emergency Medicine.

DIGITAL PATIENT ENGAGEMENT TECHNOLOGY SUPPORTS SURGICAL PATIENTS

Another piece of technology having a positive impact on the patient experience is Osler’s Digital Patient Engagement platform. Launched in August 2021, the platform is helping improve safety, quality and health care outcomes for surgical patients.

The patient engagement platform guides patients before and after their surgical procedures with education, progress tracking and symptom monitoring accessed via their personal devices (i.e. smartphone, tablet, or computer).

The platform offers customized dashboards that enable the Osler care team to monitor patient health throughout their journey. The platform enhances accessibility by supporting multiple languages that are prominent in Osler’s diverse communities including English, Punjabi, Urdu, Hindi, Portuguese, Italian and French.

As of September 2021, more than 3,400 patients have already benefited from the digital experience. One patient shared, “I felt less on my own after leaving the hospital.” Another patient shared that the digital experience was, “quick and easy and felt like someone was checking in on me each day.”

Building on these successes, Osler is continuing to innovate and advance new technologies like the online pre-registration form, ED Wait Clocks, and Digital Patient Engagement platform to further inspire patient confidence, improve access to care, and support positive patient outcomes.
Together with our customers, we are driven to make healthcare better. Through advanced digital healthcare, and innovative patient and caregiver safety solutions, we empower our customers to improve clinical, operational and financial outcomes.
Leading the way in product traceability

A tracking system for medical devices promises to transform the global healthcare supply chain, allowing for product traceability, with patient safety a strategic priority.

In Canada, we already have a role model in Alberta Health Services (AHS).

“We’re supportive of the work that AHS has done on this initiative,” says Brian Lewis, President and CEO of Medtech Canada. “AHS has proven that a system of tracking a medical device from the Unique Device Identification (UDI) barcode to procurement and Enterprise Resource Planning (ERP) through Clinical Information Systems (CIS), right to the patient’s electronic record, is possible by focusing on interoperable systems throughout the process.”

Setting up an interoperable tracking system, while desirable, is no easy task. It involves complex procedures, and extensive planning to ensure interoperability.

“It’s important to take a longer view of the value proposition within the supply chain, says Jitendra Prasad, Chief Program Officer, Contracting, Procurement & Supply Management, at AHS. “In Alberta, we have a consolidated ERP system that was implemented 11 years ago.”

AHS relies on an Oracle ERP system, and a common provincial CIS from Epic Systems Corporation. This in turns supports Connect Care, a provincial electronic medical record system. It will give healthcare providers at AHS and its partners a central access point for more complete, up-to-date patient information and best practices. Patients will have better access to their own information, and it will be easier for healthcare providers to communicate with patients and each other. The whole healthcare team, including patients, will have the best possible information throughout the care journey.

From a product perspective, the Alberta Product Item Registry (PIR) has facilitated the integration, as has the implementation of global master data standards, with items mapped at point-of-use for purchasing categories and clinical attributes. A system like this isn’t static: it involves ongoing processes, such as comprehensive data cleansing and standardized item nomenclature.

It’s a lot of work, but, if done right, the benefits are impressive. AHS took a well-thought-out, methodical approach to medical device integration.

When UDI is integrated, it enables the tracking and tracing of medical devices and implants through bedside scanning using manufacturer-generated barcodes,” says Prasad from AHS. “Patient information, data archives, and supply chain information can be integrated and managed better, and systems can be standardized with a common data dictionary to reduce duplication of effort, and to minimize errors.”

**IN SUPPORT OF DIGITAL TRANSFORMATION**

What AHS has accomplished functions as a clinically integrated supply chain (CISC) that enables a larger move toward digital transformation. For example, the province’s commitment to CISC includes the adoption of digital signatures, voice-recognition and transcription, and the tracking and management of patient beds.

At present, Alberta has a over three million unique medical technologies and supplies integrated into its PIR. Three implementation waves of the CISC have been completed at multiple sites, with another three waves anticipated to be completed over the next couple of years. All major acute care sites are expected to be fully implemented by 2024.

“We have over a 90 per cent success rate in scanning for all device identifiers, such as name, lot and serial number, expiry date, and manufacturer, among others,” says Prasad. “No product relabelling is permitted, and we’ve created a specialized clinically integrated supply team for trouble shooting.”

Interoperability between UDI, ERP and CIS systems also puts AHS in good stead when it comes to facing future challenges.

“As much as we are responding to the COVID-19 pandemic, from a supply chain perspective, we need to be prepared for the next event,” says Prasad. “How do we now make sure that procurement and supply chain connections can support us in the post-pandemic recovery phase. It’s a complex supply chain, and this digital transformation will help us face future challenges.”

**LEARNING FROM AHS**

AHS’s ambitious approach can be seen as a model for other jurisdictions, with important lessons learned. Scanning can be frustrating, and users require support – their feedback needs to be heard when items such as trays and implants are not individually labelled. There can also be issues with substitutes, backorders, and consignment.

“It’s important to make sure that there’s an understanding of the impact on organizational processes,” says Prasad. “Manufacturers also need to give us proper warning in advance of a change, given that we need complete
information on all items, which is then created in the registry and the ERP system."

It is important for healthcare organizations to have the funding, commitment, and capabilities to move forward with UDI. Vendors also need time to comply and provide the required data. This is especially true for smaller vendors, some of whom may not have the infrastructure to comply immediately.

Overall, it is anticipated that it will require several years to fully implement UDI in Canada. In the rest of the world, major jurisdictions such as the US, EU, and China are also implementing UDI over several years based on the International Medical Device Regulators Forum guidance. This makes sense: rushing the system may cause errors and possibly contribute to market confusion.

GETTING IT RIGHT FOR THE LONG HAUL

The next step is for Canada to develop a harmonized, government-controlled registry. To date, virtually all major jurisdictions that have either brought a system into place, or have published plans to do so, have indicated that their registry will be run by a government entity.

A national registry run by Health Canada would ensure that the system is sustainable over time, while reducing the risk of having private organizations introduce their own business needs. For Alberta – as well as for many other jurisdictions around the world, and ideally Canada at large – the recommended approach is the implementation of an open-source model which allows for linkages to multiple data sources, and minimal unique requirements.

At the end of the day, having a national system that is informed by the AHS experience will be well worth it. Canada’s healthcare system will have better financial controls, with information centralized, integrated, and more accessible to everyone concerned. With point-of-care scanning and analytical tools embedded into the clinical environment, product features will be tracked and linked to specific care procedures, and to patient records. Most importantly, these processes will then allow clinicians to validate the correct care, and to track and improve patient outcomes.

Baxter is investing in new digital health solutions across therapies and care settings.

Our team of more than 200 data scientists, engineers and medical experts are working on 30+ digital health projects that will help providers drive operational efficiencies and clinical outcomes in home dialysis, chronic kidney disease, fluid management, sepsis and inflammatory conditions, and clinical nutrition.

baxter.ca
In an exciting world-first, lungs intended for transplant were transported by an unmanned aerial drone from UHN’s Toronto Western Hospital to Toronto General Hospital. The few-minutes flight happened in late September and was led by the Toronto Lung Transplant Program in partnership with Quebec-based biotechnology aviation company Unither Bioélectronique, with support from Trillium Gift of Life Network (TGLN) – the organization in charge of organ and tissue donation in Ontario.

“This is an incredibly important milestone for our program, and for the medical field of transplantation,” says Dr. Shaf Keshavjee, Director of the Toronto Lung Transplant Program at UHN’s Ajmera Transplant Centre. As a proof of concept, this flight is a first step to revolutionize organ transportation systems. The use of drones and autonomous aircrafts have potential to make organ transportation faster, more cost-effective, greener and, most importantly, it will help save more lives.

“If we want to save more lives, part of the solution is to create new, more efficient ways to get lungs and other organs to patients who need them the most,” says Dr. Keshavjee. There is a chronic shortage of organs available for transplant. For lungs, around 20 per cent of patients in Canada die on the waitlist, and part of the issue is logistical barriers.

“Many times, we lose a life-saving organ because we can’t get to it in time, or we can’t get it back before the organ deteriorates and is no longer suitable for transplant,” explains Ajmera Transplant Centre’s Medical Director, Dr. Atul Humar.

“Having drones to transport lungs and other organs across the continent would help move them faster and more efficiently. In the long-term, this would also contribute to transporting them seamlessly to and from highly specialized organ repair centres like the Ajmera Transplant Centre in Toronto.”

MORE ORGANS AND IMPROVED ORGANS

A focus of the research conducted by the Ajmera Transplant Centre and the Toronto Lung Transplant Program is to improve both the number of or-
gans available for transplant, and their quality.

A leader in developing the Ex Vivo technology, the Centre collaborates with industry partners like Unither – a subsidiary of United Therapeutics Corporation – to develop cutting-edge solutions and lead innovations that will have a direct impact in patient care.

“Our company is dedicated to creating an unlimited supply of transplantable organs for everyone who needs it, and we are confident that drone transportation will play an important role in achieving this goal,” says Martine Rothblatt, CEO, United Therapeutics.

“We are very proud of this world-first in partnership with the Toronto Lung Transplant Program, at UHN, a world leader in lung transplantation where the first successful single and double-lung transplants were performed in the 1980s.”

This important achievement could not have happened without the critical support from Ontario Health’s Trillium Gift of Life Network (TGLN).

“The strong connections we have with hospitals across the province are critical to the success of Ontario’s organ donation and transplant system, which is recognized as one of the best in the world,” says Clare Payne, Vice-President, Clinical Transplant Systems at TGLN.

“We are excited to see advances in drone and automated aircraft transportation as it has potential to improve accessibility to donated organs. We are so grateful to donors and their families and welcome all opportunities that could improve access to their life-saving gifts.”

FLYING PRECIOUS CARGO IN AN URBAN SETTING

The Unither and UHN team created a special cooler to transport the lungs with the drone. This container made of light carbon fibre was rigorously tested to ensure the organ would be protected from vibration, changes in temperature, pressure or other environmental factors.

“We knew we would essentially be carrying a human life, so we needed to ensure the flight was safe for the organ, as well as for the thousands of people on the ground,” says Mikael Cardinal, Vice-President, Program Management – Organ Delivery Systems at Unither.

A major part of the project was to prove that it is possible to move an organ using a drone, and that it can be done safely in a densely populated area like downtown Toronto.

Under Transport Canada and Nav Canada oversight, UHN’s Surgility Program – a program within the Techna Technology Development Team that tackles technology challenges and innovation opportunities across UHN – worked with Unither through dozens of test flights prior to transporting the donor lungs. They developed take-off and landing protocols in each hospital, optimized processes and accounted for human and weather variables.

The teams also worked closely with UHN Security and Facilities to install landing pads on the rooftops of TGH and TWH, improve routes and access to the buildings, and create a clear, safe path to and from the operating rooms.

CONTRIBUTING TO MEDICAL ADVANCES

Patient Alain Hodak, who received the first lungs ever transported by a drone, was excited to be part of this project. A few days after his transplant, he was recovering well and proud to play a role in a world-first.

“It’s an honour to be a part of such an amazing leap in technology that will make organ transportation better and faster. As an engineer, I find it thrilling to be part of this major advance in science and medicine.”

Alain and his family are also incredibly grateful to the organ donor and their family.

“They gave us the biggest gift our family could ever receive, giving Alain a second chance at life,” says the patient’s wife, Suzanne Côté-Hodak.

All partners on this historic project gratefully acknowledge the generosity of all organ donors and their families.

*Exact date of transplant is not being published to protect organ donor confidentiality.

Ana Fernandes is a Senior Public Affairs Advisor at University Health Network.

Top: Drone landing at Toronto General Hospital’s rooftop, minutes before being taken to the operating room where patient Alain Hodak was prepared for surgery.

Middle: Alain Hodak and his wife Suzanne Côté-Hodak say they were excited to play a role in this world-first.

Bottom: Dr. Shaf Keshavjee holds container made of light carbon fibre, which was rigorously tested to ensure the organ would be protected during the flight.
Harnessing the power of smart technology to enhance patient experience

By Vaso Charitsis

After a long workday, John, 60, begins to feel unwell while exercising. He is dizzy, has trouble speaking and calls an ambulance. The first responders notice signs of a stroke and transport him to the hospital. At the hospital, John is admitted and is placed in a smart bed. The bed’s weighing and monitoring functions are activated, and the information is transmitted to his electronic health record (EHR). His care team now has accurate data to determine the precise dosage for the life-saving medication he needs. Administering the right dosage as quickly as possible increases his chance of recovery.

After he is stabilized, John is moved to the integrated stroke unit where he can call for assistance from his care team using the speaker on his smart bed. The bed’s weighing and monitoring functions are activated, and calls an ambulance. The first responders notice signs of a stroke and transport him to the hospital. At the hospital, John is admitted and is placed in a smart bed. The bed’s weighing and monitoring functions are activated, and the information is transmitted to his electronic health record (EHR). His care team now has accurate data to determine the precise dosage for the life-saving medication he needs. Administering the right dosage as quickly as possible increases his chance of recovery.

As John begins his recovery journey, his physician and health care team create a personalized treatment plan that includes educational videos and medications that can be viewed on his MyCare tablet. For the first time in a month, John begins to feel much better and feels he’s ready to go to the bathroom on his own. He tries to get up from his bed, but an alarm goes off alerting “please do not exit your bed,” as he can be at risk of falling. His health care team is automatically alerted through their smart mobile devices and because John’s wristband tracks his location, staff and physicians know exactly where he is. Ultimately, the team can support and prevent him from having a potential fall.

Once John returns home and attends an appointment with his primary care physician, he can log in to his MyChart account from his mobile device to view details of his hospital stay. This includes test results and prescribed medications, and John can share those details with his family doctor for his follow-up visits.

John’s story is just one example of how smart technology can improve patient experience and outcomes. At both of Mackenzie Health’s hospitals, Mackenzie Richmond Hill Hospital and Cortellucci Vaughan Hospital, Canada’s first fully smart hospital, these smart technologies have been integrated to anticipate the needs of patients and health care providers. Smart technology improves patient health and wellbeing, gives patients control of their health needs and allows the care team to spend more time with patients. Smart technology enables seamless access to patient health records, enhanced quality of patient care and improved flow of information across departments and hospital sites.

“As above all, the investments we have made in smart technologies at Mackenzie Health is all part of the quadruple aim of improving the patient experience, the provider experience, improving clinical outcomes and reducing overall costs,” says Altat Stationwala, President and CEO, Mackenzie Health. “Leveraging smart innovative technological systems and medical devices that can speak to each other means staff and physicians have more time to spend taking care of patients.”

Continued on page 40

Vaso Charitsis is a Senior Communications Consultant at Mackenzie Health.
At Siemens Healthineers, our purpose is to enable healthcare providers to increase value by empowering them on their journey towards expanding precision medicine, transforming care delivery, and improving patient experience, all enabled by digitalizing healthcare.

Every day, an estimated five million patients globally, and 85,000 Canadians, benefit from our innovative technologies and services in the areas of diagnostic and therapeutic imaging, laboratory diagnostics and molecular medicine, as well as digital health and enterprise services.

We are a leading medical technology company with over 120 years of experience and 18,000 patents globally. Through the dedication of more than 66,000 colleagues in over 70 countries, we will continue to innovate and shape the future of healthcare.
North America’s largest medtech conference coming to Canada for the first time ever

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he Advanced Medical Technology Association (AdvaMed), Medtech Canada’s counterpart association in the United States, is bringing its annual MedTech Conference to the Metro Toronto Convention Centre in the Fall of 2022. With this decision, organizers have chosen Canada to be the first host country for the conference outside the United States. The conference was originally scheduled to come to Toronto in the Fall of 2020, but the pandemic forced organizers to postpone its arrival on Canadian soil.

The MedTech Conference, which is the largest medical technology-focused conference in North America, typically attracts more than 3,000 attendees from around the world each year for three days of educational programming, patient stories, technology showcases, networking opportunities and more.

AdvaMed’s decision to bring the conference to Canada was based on multiple factors, but a significant impetus is Canada’s strong medical technology innovation environment.

The 2021 edition of the conference, which was a hybrid event, took place in Washington, D.C., Minneapolis, Minn., and online, attracting nearly 1,500 attendees from 40 countries. The Conference gathers the world’s top medtech executives and innovators to network and share insights in an engaging environment. With nearly 90 sessions featuring more than 250 speakers, the Conference brought together medtech professionals to engage on the important issues facing the industry, including addressing health disparities and responding to COVID-19.

Prior to the pandemic, the 2019 edition of the conference took place in Boston, and with over 300 participants, the Canadian delegation was the largest of all in attendance—building tremendous momentum for the conference’s arrival in Toronto in 2022. The delegation included dignitaries such as Pierre Fitzgibbon, Quebec’s Minister of the Economy and Innovation; Nina Tangri, Ontario’s Associate Minister of Small Business and Red Tape Reduction; Michael Thompson, Deputy Mayor of Toronto; and Patrick Brown, Mayor of Brampton.

“Bringing the Medtech Conference to Toronto presents an opportunity for all of us and also all of you—clinicians, medical researchers, research scientists, business leaders, entrepreneurs, academics—all to come together and have important conversations about the future of medical science and how to advance this sector,” said Toronto Mayor John Tory in a video address to 2019 conference attendees.

Continued from page 38

Harnessing the power of smart technology

While digital technology has existed for some time, smart technology takes digitization one step further. “Ultimately, smart technology becomes a virtual member of the care team, helping the clinical team foresee what comes next in a patient’s health care journey,” says Dr. Aviv Gladman, Chief Information Officer, Chief Medical Information Officer and ICU physician. “Our patients, staff and physicians interact with technology every day, creating what we refer to as digital moments of health. For patients, it means more control, increased convenience and better outcomes. For the health care team, it means spending less time doing non-value-added tasks such as filling out paperwork, locating equipment and gathering information from multiple places.”

The digital moment of health is a key component of Mackenzie Health’s smart vision. “By capitalizing on the flow of information, we create intelligent digital interactions that enrich the patient’s experience and improve patient safety and quality of care,” says Gladman. “When we link smart technologies, we create an Internet of Healthcare Things (IOHT) with boundless opportunities.”

As part of Mackenzie Health’s innovation journey, the organization also established the Mackenzie Innovation Institute (Mi²) in 2015, to help guide the organization’s transformation journey for innovative health care delivery. Over the subsequent years, strategic partnerships with industry leaders such as Philips, Sodexo, Hillrom, CenTrak as well as academic institutions such as York University have been established.

“What makes Mi² unique is our approach to private-public partnership models with industry leaders who are equally driven to co-develop and implement first-of-kind smart solutions that will provide the best care and patient experience at Mackenzie Health,” says Stationwala. “The long-term objective is that the projects started at Mi² and evaluated at Mackenzie Health can become a blueprint for other health care providers.”

With a mission to relentlessly improve care to create healthier communities, Makenzie Health is determined to continue to identify innovative smart technologies that can more effectively solve health care problems in Ontario and beyond.
125 years as a family-owned company has shaped a culture of going beyond the product.

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How to keep patients interested in virtual care post-pandemic

By: Dr. Richard Tytus

When the COVID-19 global pandemic began to surge, healthcare professionals and patients alike found themselves in a predicament. Patients, who needed non-COVID-19-related treatment, were often unable to easily see their family doctor in-person. Some of these doctors, meanwhile, had to either rev-up their virtual medicine services, or implement one on the fly.

Prior to the arrival of COVID-19, virtual medicine solutions were readily available for medical clinics to use. Unfortunately, for a multitude of reasons, not all clinics were ready to adapt. However, once the pandemic forced doctors and patients to adjust how they regularly visit with one another, the usage of virtual medicine solutions rose incredibly.

Personally, I conduct virtual appointments with many of my patients on a regular basis. I find it to be a safe, easy and stress-free way to ensure my patients’ health is being properly monitored during a time in which some individuals are hesitant about visiting a brick-and-mortar medical facility.

Even when COVID-19 subsides, I will continue to offer my patients virtual appointments. I trust this technology, and believe it’ll positively evolve over time. The trick for doctors with the same mindset as myself is to find ways to keep patients interested in virtual care post-pandemic.

According to findings from Medical Economics, 83 per cent of patients plan to still use virtual medicine services once the pandemic concludes. This represents its needs, as well as those of its patients. Is it easy for the clinic to manage? Perhaps more importantly, is it easy for patients to navigate and understand?

Beyond ease of use, security is key. Doctors and patients want to know that any information disclosed during a virtual appointment remains private, and inaccessible to third-parties. Thus, I recommend a solution that is both HIPAA/PHIPA compliant, and features end-to-end encryption.

According to findings from Medical Economics, 83 per cent of patients plan to still use virtual medicine services once the pandemic concludes.

Choose the best virtual medicine solution

There are plenty of virtual medicine solutions available to those in the healthcare industry, which tells us the demand for such technology remains high.

While each virtual medicine solution is different in its own way, what a clinic needs to do is find one that best represents its needs, as well as those of its patients. Is it easy for the clinic to manage? Perhaps more importantly, is it easy for patients to navigate and understand?

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Embrace future virtual medicine innovations

As noted earlier, I expect virtual medicine solutions to continually evolve in a positive direction. However, improvements and advancements made in the virtual medicine space will not just fall into your lap – you have to keep an eye out for them.

By following closely, you will discover new service options or solution providers that could add a whole new dimension to your practice’s virtual care prowess. If you don’t follow along, you could find yourself continually embracing outdated technology that’ll eventually frustrate clinical staff and patients alike.

If you expect those you work with and treat to remain interested in using a virtual medicine solution, you have to stay in-touch with the current trends.

Always keep your clinical team up to speed

As such innovations emerge and become part of a clinic’s way of handling virtual appointments, it is important that everyone on the staff be flexible. The faster a doctor and their team can adapt to new technology that’s introduced, the better the experience patients will receive.

If patients always have access to the latest and greatest virtual medicine services and solutions available to them, the more encouraged they will be to participate in video calls with doctors.

Focus on expanding your reach

One of the best ways to see that virtual medicine services remain top-of-mind for patients is to broadly market them at clinics. This can be done using in-house posters and brochures, as well as through a clinic’s website, email list and social media accounts.

Additionally, it never hurts for the doctor or clinical staff to discuss the overwhelming benefits of virtual medicine when seeing a patient in-person. Sometimes, a quick, yet informative conversation can motivate an individual to adjust their medical appointment routine.

Final thoughts

Virtual medicine plays a vital role in our lives today, but in order for it to remain that way, medical clinics need to do their part. By clinics constantly embracing and promoting this evolving technology, patients will always have the option of seeing their doctor virtually.

While COVID-19 may have brought virtual medicine into a much brighter spotlight, it is the responsibility of healthcare professionals to keep it there.

Richard H. Tytus, BSc.Phm, MD, CCFP, FCFP is an Associate Clinical Professor, McMaster University, District 4 OMA Chair, Past Board Director, OMA & CMA and Co-Founder of Telemedicine Solution, Banty Inc.
Supporting AI Deployment with a Toolkit for Implementers

By Mario Voltolina

From Neuromancer, to HAL 9000, to Rosey the Robot, artificial intelligence (AI) has long captured the human imagination. But this fast-growing field has already made the leap from science fiction to computing reality. Not only is AI already impacting health care, its usage is growing – prompting many health care organizations to wonder how they can plan for, leverage and implement AI. With the right tools, these organizations can take the first steps on their AI journey.

AI has been defined as, “any current or future machine learning approach to predictive analytics, decision-support systems and/or automated decision making.” That is, AI is computer technology that can mimic and support human intelligence. While the AI capabilities imagined by science fiction remain beyond our reach for now, its current realities have made the leap from science fiction to computing reality. Not only is AI already impacting health care organizations, but its usage is growing – prompting many health care organizations to wonder how they can plan for, leverage and implement AI.

With the right tools, these organizations can take the first steps on their AI journey. The AI4H Task Force in 2020, through the Canadian Institute for Advanced Research (CIFAR); CIFAR subsequently initiated the AI for Health (AI4H) Task Force in 2020, publishing a report calling for action in the AI4H space in several key areas:

- Establishing an AI4H “infrastructure” to enable secure and responsible access to data
- Accelerating the development and deployment of safe AI4H applications
- Developing an AI4H strategy

Moreover, 20 years of electronic medical record (EMR) adoption and consolidated health data sets in certain jurisdictions have contributed to good quality and comprehensive Canadian health data. These robust datasets mean that AI algorithms can produce more relevant, accurate and reliable outputs.

While Canada is well-positioned to act as a global leader in AI, lack of familiarity and comfort with AI in the health sector can lead to a “watch and wait” approach with respect to AI training, experimentation and operationalization. Small to medium-sized health care delivery organizations in particular may feel their enthusiasm outpaced by uncertainty about AI best practices.

After all, new opportunities bring new considerations. Health care delivery organizations need to understand and manage the new concerns that AI brings with it, such as issues of transparency, explainability and bias. For newcomers to the space, the path to AI deployment can feel daunting.

To help address these barriers and accelerate the adoption of AI enabled technologies, Canada Health Infoway (Infoway) has developed the “Toolkit for Implementers of Artificial Intelligence in Health Care.” Created in collaboration with INQ Law, a leading law firm and data consultancy with deep expertise in AI risk management, this toolkit serves as a “nuts and bolts” primer for health care delivery organizations just beginning to implement AI. It is intended for a range of roles and professionals, including AI project leads, CXOs, clinicians and other SMEs, IT leads and those involved with legal, privacy, security and compliance services.

Six modules – downloadable as one document or individually – cover key themes for health care delivery organizations to consider when beginning work with AI, from identifying strategic opportunities, to understanding emerging AI regulations, to guidance on AI governance. Checklists, best practices and case studies explore common AI considerations such as explainability, transparency and bias, and additional resources can be found throughout the toolkit’s bibliography and annexes.

Learn more and sign up to receive the toolkit. Webinars held throughout the winter of 2021/2022 will explore the toolkit in further detail. AI implementers can also contribute their suggestions to refine future editions of the toolkit and contribute additional Canadian AI case studies and use cases.

With its strong AI talent and knowledge, and the opportunities afforded by our single-payer health system, Canada can take its place as a global leader in AI for health care. As a country, we’ve laid the right groundwork – with the right tools and the right roadmap, Canadian health care organizations can begin their journey towards an AI future.

Mario Voltolina is CTO and Executive Vice President, Innovative Technologies, at Canada Health Infoway.

Breast cancer biopsy system could make biopsies less uncomfortable

By Jennifer Stranges

It's no secret that mammograms are uncomfortable. To detect early signs of breast cancer, a machine firmly compresses a patient's breast between two plastic plates to flatten and hold the breast still as the X-ray image is taken. The process is longer when the breast needs to be biopsied.

During a breast biopsy, a technologist compresses a patient's breast in the mammogram machine, a radiologist takes a sample of breast tissue with a needle, the technologist then brings that sample into a separate room for imaging to confirm the right spot of the breast has been biopsied — all while the patient's breast remains compressed. If the radiologist determines a greater sample is needed, more tissue must be taken from the patient to be imaged before being sent to a pathologist for testing.

Now a new system being trialed at St. Michael’s Hospital of Unity Health Toronto could improve the patient experience.

The Breast Imaging team has begun a six month trial of a breast biopsy system that streamlines the biopsy process. With one system, radiologists can acquire the tissue sample from the patient, image the sample as it’s being taken, verify the sample was taken and consent properly. If the biopsy system can’t salvage the tissue, the patient is sent back to the radiologist, who then sends them back to the mammogram machine. This system is expected to make biopsies less uncomfortable. The Breast Imaging team is testing if this system can make biopsies more comfortable and if it will make biopsies faster. The study is being done at St. Michael’s Hospital of Unity Health Toronto.

Detecting early cognitive impairment with the Baycrest-developed Cogniciti Brain Health Assessment

By Dr. Angela Troyer

Early and accessible detection of cognitive impairment is critical in order to provide clients and their families with information, resources, and support, and direct them to pharmacological and non-pharmacological treatments for Alzheimer’s and related dementias. The Baycrest-developed Cogniciti Brain Health Assessment, which is self-administered and available online, helps to address this need.

According to a recent study, the Brain Health Assessment performs as well as, and in certain areas even better than, the widely used Montreal Cognitive Assessment (MoCA). The assessment accurately identifies problems with memory and attention and can detect very subtle cognitive decline and impairment. As well, the Brain Health Assessment performs better than, the widely used Montreal Cognitive Assessment, as well as, and in certain areas even better than, the widely used Montreal Cognitive Assessment.

The Brain Health Assessment, which was developed with a team of Baycrest clinicians and scientists, takes around 20 minutes to complete and consists of a background questionnaire and four cognitive tasks assessing memory and attention. It was specifically designed for older adults and includes tasks sensitive to changes in the brain associated with aging and age-related cognitive disorders.

With the assessment, we can more quickly identify patients who have a high probability of having mild cognitive impairment, a preclinical stage of dementia. Clinicians in the Sum and Ida Ross Memory Clinic at Baycrest use the tool’s results, combined with other information, to refer patients to specialty programs to improve healthy lifestyle behaviours and better manage their memory.

As a publicly available instrument that produces a personalized report for each user to access, the Brain Health Assessment has been taken over 115,000 times on cogniciti.com. However, in our recent study, we were interested in a different use of this tool: by clinicians as part of a broader assessment of patients’ cognition.

To investigate this, ninety-one older adults took a full diagnostic 3-4 hour neuropsychological assessment with a trained examiner to see if they met criteria for mild cognitive impairment. All participants also completed both the at-home Brain Health Assessment and the clinician-administered MoCA. Our team then looked at the results of the Brain Health Assessment and the MoCA, using the results of the full diagnostic neuropsychological assessment as the benchmark.

When combined with additional clinical information, we found that the Baycrest Health Assessment was effective at providing a reassuring normal result in the case of normal cognitive function, reducing the need for further testing. The Brain Health Assessment detected mild cognitive impairment as accurately as the clinician-administered MoCA did, but the Brain Health Assessment was superior in detecting normal cognitive function, with 23 per cent of the sample correctly identified as normal, versus 8 per cent for the MoCA.

These results, published in The Journals of Gerontology, suggest that the Brain Health Assessment can be a useful tool in the clinical assessment of memory and thinking, and help direct clients and their families to resources and support to manage their memory.

Our team is currently validating a French version of the Brain Health Assessment, with plans to eventually extend it to other languages as well, in order to increase the reach of this tool.

This study was supported by funding from the Centre for Aging + Brain Health Innovation (CABHI), powered by Baycrest, as well as the Saul A. Silverman Family Foundation and the Morris Keverner Memorial Fund.

Dr. Angela Troyer, Program Director of Neuropsychology and Cognitive Health, and Professional Practice Chief of Psychology at Baycrest
from the right spot, and separate samples so they can be transferred to a pathologist with minimal handling. The system saves an average of 10 minutes per procedure, according to the manufacturer.

“The advantage of this machine is that it X-rays the biopsy specimens as soon as they are obtained from the patient so that we can potentially do less biopsy samples,” said Dr. Derek Muradali, radiologist at St. Michael’s, who led the efforts to secure the machine at St. Michael’s.

Since the imaging happens instantaneously, radiologists can know in real-time if they’ve collected adequate sample, instead of taking time to evaluate the image and going back to the patient to remove more breast tissue for testing if needed.

“What’s great about having this technology is the precision,” said Carolyn Trottier, Operations Leader of Breast Imaging at St. Michael’s. “As soon as you take a sample, you can X-ray it so we can see in real-time if we have what we need or not. The biopsy can be stopped sooner if the radiologist feels they have adequate tissues.”

The system, called the Brevera Breast Biopsy System, has an install base of over 560 units across the United States, but St. Michael’s is the first Canadian site to use the system.

Dr. Muradali estimates that over 300 breast biopsies are conducted at St. Michael’s each year.

Dr. Adena Scheer, surgical oncologist at St. Michael’s, describes looking for calcifications on an X-ray – patterns that may indicate breast cancer – like “looking for specks of dust.” Before the introduction of the new system, patients were left with their breast compressed while radiologists left the room to evaluate the X-rays for those specks of dust.

“Patients couldn’t tolerate being in the mammogram machine for the biopsy for that long of a time,” she said. “Now the biopsy will be shorter. From a patient experience perspective, this is fantastic.”

Jennifer Stranges is a senior communications advisor at Unity Health Toronto.
Post-surgery opioid use and pain management

By Nashita Tabassum, Maaria Arif, Vikrant Raina, Rami Al Khouri, and Certina Ho

Tehmina is a 65-year-old woman who underwent total knee replacement four weeks ago. She was discharged with a pain prescription of oxycodone 5 mg (immediate-release tablet) every 6 hours as needed for seven days. When she needed more medication for pain, her family doctor extended the oxycodone prescription, which she has been using for 21 days since. Today, when she decides she wants to stop using the pain medication, she starts feeling quite ill, and to manage this, she decides to continue taking the oxycodone tablets.

BENEFITS AND RISKS OF OPIOIDS

Prescription opioids (also known as narcotics) are commonly used to treat moderate-to-severe pain. Opioids belong to a class of medications that have structural similarities to the natural alkaloids found in the opium plant. When used short-term, opioids are generally safe and effective in managing pain in post-surgery and cancer patients, when compared to placebo. The Institute for Safe Medication Practices Canada (ISMP Canada) has developed a one-pager (double-sided) handout to further explain “Opioids for Short-Term Pain” (https://www.ismp-canada.org/download/Opioid-Stewardship/Opioids-ShortTerm-Pain-EN.pdf).

When using opioids long-term, our brain gradually becomes less responsive to the opioid stimulation. As a result, more opioids are needed to achieve the same degree of pain relief. Potential risks associated with opioid use include the side effects of drowsiness and constipation; more serious safety concerns may include sleep disorders, dependence, addiction, abuse, misuse, withdrawal, overdose, respiratory depression, or even severe harm psychologically and neurologically, such as, permanent brain damage, coma, and death. Readers can refer to the ISMP Canada summary on “Opioid Pain Medicines: Information for Patients and Families” on ISMP Canada’s website for further information.

POST-OPERATIVE PAIN MANAGEMENT

Post-operative pain refers to pain after surgery. Post-operative pain management is one of the most common indications for opioids. In the above scenario, the patient has likely developed some dependence to her opioid medication (i.e., oxycodone) and is experiencing signs of withdrawal. Without proper monitoring of post-operative pain management, patients may develop tolerance and dependence on opioid medications, leading to long-term health implications. In general, pain management (with or without the use of opioids) should be well planned, discussed, and communicated with the patient before and after surgery, together with ongoing monitoring. The Canadian Journal of General Internal Medicine has recently published a review on “Postoperative Pain Management” and readers are encouraged to consult this for further information. For answers to frequently asked questions on “Opioids for Pain after Surgery”, refer to the ISMP Canada resource.

OPIOID STEWARDSHIP

Research indicates that Canada is the world’s second largest consumer of opioids (https://www.ismp-canada.org/opioid_stewardship/). There has also been an increase in opioid-related harm and mortality associated with medication incidents. Therefore, it is important to practice opioid stewardship (which refers to “coordinated interventions designed to improve, monitor, and evaluate the use of opioids in order to support and protect human health” (https://www.ismp-canada.org/opioid_stewardship/) and increase practitioner and patient awareness and education on appropriate opioid prescribing and safe medication use, respectively.

HARM REDUCTION STRATEGIES IN POST-OPERATIVE OPIOID USE AND PAIN MANAGEMENT

The following are some examples of harm reduction strategies to manage post-operative pain in surgical patients.

• Conduct a comprehensive medication review with patient, which includes asking patient about any current/previous dependence or tolerance to opioids, and/or substance use disorder.
• Consider a multi-modal approach to pain management (e.g., opioid prescription is not the only option for pain control; use the lowest effective dose of opioids for pain control, for the shortest possible duration, and with an appropriate plan for tapering; taper opioid dose to reduce the risk of withdrawal and/or dependence, etc.)
• Educate patients (and their family) on the benefits and potential risks of opioid use for pain management (e.g., when pain is under control, consider tapering the dose; follow up with primary care provider if experiencing further pain or signs of withdrawal, etc.).

• Educating and communicating with patients and family members on benefits and potential risks associated with different options and approaches to pain management.

ISMP Canada has prepared a website on opioid stewardship (https://www.ismp-canada.org/opioid_stewardship/) where readers can find dedicated information pertaining to patients and families, prescribers, healthcare providers, opioids, and safe storage and disposal of medications.

Nashita Tabassum, Maaria Arif, Vikrant Raina, and Rami Al Khouri are PharmD Students at the Leslie Dan Faculty of Pharmacy, University of Toronto; and Certina Ho is an Assistant Professor at the Department of Psychiatry and Leslie Dan Faculty of Pharmacy, University of Toronto.
Safe delivery of an antibody therapy across the blood-brain barrier using MRI-guided focused ultrasound

The research team captured world-first images of the antibody therapy drug, Trastuzumab, precisely targeting tumours which spread to the brain from breast cancer, across the blood-brain barrier.

Antibody therapies can help the immune system fight cancer cells and are often used with radiation and chemotherapy treatment. The blood-brain barrier is made up of a thin layer of cells that protect the brain from toxins and other viruses and bacteria, but also blocks helpful therapies, such as Trastuzumab, from reaching the brain.

MRI-guided focused ultrasound technology uses ultrasound waves to non-invasively and temporarily open the blood-brain barrier enabling therapeutics to reach specified areas of the brain.

The study is published in Science Translational Medicine.

“This is the first visual confirmation that focused ultrasound can improve the delivery of targeted antibody therapy across the blood-brain barrier,” says Dr. Nir Lipsman, the study’s principal investigator and director of the Harquall Centre for Neuromodulation at Sunnybrook. “These are preliminary, but very promising, results that with continued research have implications well beyond brain cancer and to other neurological conditions, including Parkinson’s disease and Alzheimer’s, where the blood-brain barrier poses a challenge to drug delivery.”

The findings are the culmination of nearly 20 years of research initiated by focused ultrasound innovator and pioneer, Dr. Kullervo Hynynen, Vice President Innovation, Sunnybrook Research Institute.

“This is a breakthrough moment in the field of focused ultrasound. It is the result of incredible collaboration among various teams over the past two decades, including oncology, surgery, pharmacy, nuclear medicine, neurology, medical physics and more,” explains Dr. Hynynen.

“It is a great story of preclinical to clinical research and the dedication of investigators to find innovative ways to personalize treatment for patients in the future.”

Metastatic breast cancer, also known as Stage IV breast cancer, starts in the breast and spreads to other areas which can include the bone, liver or other organs, and brain. It’s estimated that brain metastases in patients with Her2-positive breast cancer are increasing in prevalence by approximately 30 per cent and are associated with greater morbidity and mortality despite therapeutic advances. Currently, breast cancer brain metastases are treated with a combination of open neurosurgery, radiation and chemotherapy. However, depending on the location and number of brain metastases, options for surgery and radiation may be limited and it can be difficult for therapy to penetrate tumours in the brain.

“The early data in this study suggests delivery of antibody therapy directly to tumours using focused ultrasound may impact treatment efficacy, with tumours slightly decreasing in size, with varying results for patients between seven to 31 per cent during the study, on average to 21 per cent,” says Dr. Rossanna Pezo, medical oncologist in the Odette Cancer Centre at Sunnybrook. “The reduction in tumour size is promising but should be interpreted with caution as further research on a larger scale is needed.”

A helmet-like focused ultrasound device, developed by InSightec, was used in conjunction with MRI guidance in four patients in this world-first phase I trial to direct ultrasound waves precisely to areas of the brain where tumours were clearly visualized. While in the MRI machine, participants received Trastuzumab, a compound that is 100 times larger than the typical compound that can enter the brain across the blood-brain barrier. Focused ultrasound was used to temporarily open the blood-brain barrier to allow the passage of the antibody therapy, into the tumor tissue.

Researchers used an innovative approach to confirm the drug’s delivery on brain scans. Trastuzumab was radio-labelled, meaning the antibody therapy was ‘tagged’ with a special compound that could be easily visualized using single photon emission computed tomography (SPECT) imaging. Scans were performed before the procedure as well as after, and showed significantly increased uptake of antibody therapy after focused ultrasound.

Patients went home the same day and were observed after 24 hours, one month, three months and one year. Researchers determined the procedure to be safe and well-tolerated by patients.

These results set the stage for the possibility of delivering a host of both established and novel therapies to numerous brain conditions, that otherwise cannot gain access to the brain.

The radiopharmaceutical drug was developed by Professor Raymond Reilly and his team at the Centre for Pharmaceutical Oncology at the Leslie Dan Faculty of Pharmacy at the University of Toronto.

Sunnybrook is a Centre of Excellence in Focused Ultrasound – the only Canadian site to be recognized as such by the Focused Ultrasound Foundation.

“The multidisciplinary team at Sunnybrook are pioneers in the use of focused ultrasound to treat a variety of brain disorders,” says Neal F. Kassell, MD, chairman of the Focused Ultrasound Foundation. “This study demonstrating the effectiveness of focused ultrasound to open the blood-brain barrier for facilitating delivery of antibodies to the brain is an important milestone in the development of new approaches for treating brain tumors and other neurological disorders. We are pleased to be partnering with this esteemed group.”

www.hospitalnews.com

This article was submitted by Sunnybrook Health Sciences Centre.
Tech literacy program helps older adults stay healthy and engaged

By Arielle Ricketts

Blanche Morris admits that she didn’t always understand computers. But since participating in Tech Coaches’ Digital Literacy workshop offered through the Centre for Aging + Brain Health Innovation (CABHI), she’s confident in her abilities to independently navigate the web, send emails, and join a Zoom call.

“If I want to go on Amazon and shop, I can,” shares Morris. “I can also connect with my church family more. Now I log on to Zoom through my tablet and turn on my camera, when all I could do before was dial in on my phone.”

Over the last two years, technology has become a major aspect of everyday life for Morris and the Smart & Savvy Seniors (SSS) Community she’s a member of. The group is made up of older adults from Grace Life Center Church in Scarborough, Ontario, where they meet regularly to volunteer, connect with each other, and, most importantly, learn how to maintain their physical and cognitive health as they age.

When province-wide lockdown measures called for the suspension of large public gatherings, the SSS community stopped their in-person meetings. Soon after, the group was connected to CABHI and the team at Tech Coaches to learn about digital literacy so they could hold meetings virtually. Since then, the program has grown, connecting SSS to more workshops on a wider range of topics, including hearing loss, nutrition, brain health, and the importance of physical exercise.

“The workshops are very interactive and informative and allow the seniors to share their lived experience,” says SSS program coordinator Sharon Daley.

Daley started the Smart & Savvy Seniors program in 2018 as a way to engage the older adults in her church. As a nurse and primary caregiver for her elderly parents, she knows how important it is for older adults to keep their minds and bodies active as they age.

“The goal is to help seniors age gracefully,” Daley says about the SSS and CABHI partnership. “Increasing their awareness and access to innovative programs, products, services in aging and brain health and learning things, like how to prevent or live with vision and hearing loss, means they don’t have to miss out on living their best life as they age.”

The SSS and CABHI partnership is just one example of how tech literacy can improve older adults’ quality of life. As the longevity market continues to experience a boom in agetech products, tech-savvy older adults will be better equipped to access solutions that can help them lead healthier, more robust lives at home or in a

What is Home Care?

Home care is about trust. It is feeling comfortable with a provider coming into your home and, possibly, assisting you with the most intimate care.

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1.877.289.3997
clientservice@bayshore.ca
long-term care facility. Understanding technology can also help older adults avoid financial fraud and false health information online.

“I’m learning a lot of new things from the workshops, like how you can protect your joints from arthritis by using a rubber glove to open a bottle,” says SSS member Juliet East.

But for many of the members, learning how to use technology is simply a stepping stone for what they value the most: community.

“There’s more togetherness,” explains Roslyn Patterson. “If I miss a session, someone from the group will call and check up on me. It makes me feel less alone.”

For the next phase of the program, SSS will join CABHI’s Leap – an online community of older adults and caregivers interested in learning more about aging and brain health and sharing their lived experiences with innovators. “Leap offers communities like SSS the opportunity to be actively involved in co-designing agtech solutions that are relevant, affordable and accessible to older adults like themselves,” says Bianca Stern, Executive Director, Health Innovations at CABHI.

It’s a natural next step for the members of the Smart & Savvy Seniors community, who continue to learn, connect, and boldly embark on their aging journeys through the power of technology.

Visit cabhi.com to learn more.

Arielle Ricketts is the Marketing & Communications Content Specialist, Centre for Aging + Brain Health Innovation.
Pelvic health therapy device wins Canada-wide competition

By Sean Mallen

A device designed for the one-in-three women worldwide who will have pelvic health problems has won the 2021 AGE-WELL National Impact Challenge.

In making her winning pitch, the product's inventor, Rachel Bartholomew, CEO of Hyivy Health, spoke about her own personal health challenges.

Bartholomew had already dealt with a series of pelvic issues in her life when she was diagnosed with cervical cancer in 2019 at age 28. As she was recovering from surgery and radiation, she connected with other women facing similar challenges with cancer aftercare, including the reality that pelvic problems would have a long-term impact on their health. It inspired Bartholomew to launch Hyivy Health and create a new form of pelvic rehabilitation.

An estimated 50 million women in North America alone are dealing with problems such as pelvic organ prolapse or scar tissue after cancer surgery, conditions that often also lead to incontinence and other symptoms that have a serious and long-lasting impact on quality of life. The risk of pelvic floor complications increases with age.

Bartholomew said static dilators are the only option currently available for home treatment of pelvic health problems, a device which she described as ineffective, painful and not substantially updated since 1938. “Women deserve better,” she told a panel of expert judges.

Her startup’s solution is an ‘intelligent’ multi-purpose vaginal wand that has multiple sensors and could not only provide therapy at home, but also deliver ongoing data for both the woman and her health care providers, allowing clinicians to monitor the progress of the treatment and also detect other looming complications.

In testing to date, Bartholomew said that the treatment program decreases vaginal dryness, pelvic pain and vaginal scarring, while improving symptoms of incontinence.

The Hamilton, Ontario-based startup has a growing waiting list of more than 400 women who have expressed an interest in the product. A clinical study at McMaster University involving women with endometriosis is set to begin in the spring of 2022.

“Our goal is to have an end to end integrated health solution that empowers doctors with data and allows patients to continue therapy outside of the therapist’s office,” said Bartholomew, who won $25,000 in cash plus in-kind prizes.

Winning the AGE WELL National Impact Challenge means that Hyivy Health will now be able to expedite its research and trials on menopausal women and the effects of aging on their pelvic health, Bartholomew said after the competition.

“Our goal is to provide a unique solution partnered with detailed research to help women overcome these complications and the impact they have on their quality of life as they age.”

Six finalists took part in the AGE-WELL National Impact Challenge, held virtually on October 7, describing how their technology-based solutions could positively impact older Canadians or their caregivers.

The runner-up prize went to ImaginAble Solutions, led by Lianna Genovese, a McMaster University student. Her pitch was for a device called Guided Hands™, which assists people living with limited mobility to write, paint, draw and use a touch-screen device. Genovese’s startup won a cash prize of $10,000. ImaginAble Solutions also received an intellectual property services prize from Bereskin & Parr.

“All six of the finalists had tremendous pitches and they were drawn from the largest number of submissions we’ve ever received for the AGE-WELL National Impact Challenge,” said Dr. Alex Mihailidis, Scientific Director and CEO of AGE-WELL, Canada’s technology and aging network. “It shows the vibrancy of the Canadian AgeTech sector, which is growing and offering solutions that support healthy aging, while bringing economic benefits.”

AGE-WELL thanks the key sponsors of the 2021 AGE-WELL National Impact Challenge: the Ontario Brain Institute (OBI) and the Centre for Aging + Brain Health Innovation (CABHI), and Bereskin & Parr for its sponsorship and for the intellectual property services prize.

The AGE-WELL National Impact Challenge is an annual competition that recognizes top startups and supports entrepreneurship in Canada’s technology and aging sector. It is open to any entrepreneur or startup with a technology-based solution that can support the health and quality of life of older adults or their caregivers. For more information about the finalists and this year’s competition, visit: https://agetechnovationweek.com/national-impact-challenge/

To learn more about Hyivy Health, visit: https://hyivy.com

Sean Mallen is a Toronto-based writer and communications consultant. AGE-WELL is a federally funded Network of Centres of Excellence. The pan-Canadian network brings together researchers, older adults, caregivers, partner organizations and future leaders to accelerate the delivery of technology-based solutions for healthy aging. https://agewell-nce.ca/
Green Scorecard program expands to long-term care and retirement homes

By Kent Waddington

The Canadian Coalition for Green Health Care (the Coalition, https://greenhealthcare.ca/) is launching a new environmental performance scorecard for the long-term care (LTC) and retirement homes (RH) sectors. Premised upon the Coalition’s successful Green Hospital Scorecard (GHS, https://greenhealthcare.ca/ghs/), the expanded scorecard will enable the LTC and RH sectors to track their own environmental performance over time and compare it to their peers. The technology platform for the scorecard will also be enhanced, with standardized data collection and a real-time reporting dashboard that will enable better decision making.

With Save on Energy (https://www.saveonenergy.ca/) funding from Ontario’s Independent Electricity System Operator (IESO, https://www.ieso.ca/), and project funding from ECO Canada (https://eco.ca/) and other corporate sponsors, the project is expected to be completed by late 2022 with participants starting to use it by early in 2023.

“Building on the Coalition’s existing Green Hospital Scorecard, the new scorecard platform will recognize LTC and RH operators’ efforts to improve environmental performance,” says Neil Ritchie, Executive Director of the Coalition. “It will also provide them with access to an evaluation tool to both measure their internal environmental performance and allow them to see where they stand relative to peer organisations.”

Originally developed in concert with the Ontario Hospital Association, and systematically refined over the years by the Coalition and its advisory council, the Scorecard is the only comprehensive environmental health care benchmarking tool in Canada. With the recent data call for the 2020 GHS, the program is entering its ninth year of operation.

The Coalition plans on collaborating with LTCs and RHs to pilot and refine the LTC/RH dashboards before officially launching it in 2023. To participate in the LTC/RH scorecard pilot and stay informed on the project, please reach out to Krishna Akella at krishna@greenhealthcare.ca.

Visit https://greenhealthcare.ca/ltc-scorecard to learn more and follow the LTC scorecard project.

Kent Waddington is the Communications Director, Canadian Coalition for Green Health Care.
November is Fall Prevention Month

By Marguerite Oberle Thomas

Wondering about resources to inform your practice to avoid falls and fall related injuries for older adults? Looking for fall prevention contact persons in your area and professional development opportunities? Why not join Loop, the bilingual Fall Prevention Community of Practice, www.fallsloop.com to get all the evidence-based information that you need! While you’re at it, consider raising awareness of the November 2021 Fall Prevention Month campaign www.fallpreventionmonth.ca, which marks the seventh year of the annual campaign.

LOOP: FALL PREVENTION ALL YEAR ROUND!

Now sponsored by Parachute www.parachute.ca, the online communication platform provides multiple resources for year-round fall prevention activities. Loop is a no-cost communication platform that enables its members, the intermediaries who work with adults, older adults, and/or caregivers, to innovate, learn, share, and implement evidence-informed interventions. Loop offers:

• Webinars: New knowledge and ongoing education opportunities on fall prevention research, policy and practice. Loop offers ongoing and archived webinars.
• Discussion Forums: Where members can ask questions; gain practical, how-to advice; share information to inform their fall prevention practice and research.
• Event Calendar: Where members can feature their own fall prevention events, find out about Loop webinars and conferences.
• Knowledge Centre: Where members can access evidence-based information through existing knowledge products or literature search consultations with the Loop Knowledge Broker.
• Private Groups: Where members can collaborate in private on specific fall prevention projects and initiatives.
• Networking Opportunities: Where members can develop lasting relationships with other members across disciplines, sectors and Canada.
• Biweekly Newsletters: Where members can receive ‘heads up’ on the latest Loop activities.
• Tutorial Videos on Loop Features: Where members can learn how to use Loop services and functions efficiently.

FALL PREVENTION MONTH CAMPAIGN IN NOVEMBER!

The vision of Fall Prevention Month is that all Canadians play a role in preventing falls. The mission is to equip practitioners and service providers, business, government and academia with the evidence-informed resources to raise awareness and engage their communities in preventing falls and fall-related injuries.

Downloadable resources include branded media packages, a fact bank, virtual and in person activities and information for both older adults, their caregivers, and practitioners, education opportunities, statistics and infographics. There are numerous no cost articles available for editors of senior’s magazines or newsletters to use as is or adapt. Check out the two newest articles on the use of gait aids for older adults and for caregivers of older adults with dementia. If your media space is more limited, consider the postcard.

Please take advantage of these no cost, evidence-based resources and play your role in preventing falls this November.

Contact mthomas@parachute.ca for further information.

Why we need Fall Prevention Month:

Falls are the leading cause of injury-related hospitalizations among Canadian older adults (20-30 per cent of older adults fall each year). Falls are the leading cause for hospital admissions from injuries for children ages 0 to 14.

Fall Prevention Month encourages organizations to coordinate their efforts for a larger impact

Partners are non-profit organizations, public health units and regional health authorities, professional associations, research and academic institutes, governments, and expert volunteers who attend monthly partner meetings and actively contribute and participate in the development and promotion of FPM resources and activities.
Addressing inequalities in care

Despite new, more equitable approaches for allocating donor livers to patients, women are at a disadvantage and are more likely to die waiting for a transplant than men. A recent study in JAMA Surgery identified a strategy to address this disparity.

The study was led by Dr. Mamatha Bhat of UHN’s Ajmera Transplant Centre and the Toronto General Research Hospital Institute (TGHRI) Transplant Hepatology, and first author and fellow Dr. Ravikiran Karnam.

“We explored whether access to living donation could improve women’s chances of receiving a donor organ,” says Dr. Bhat.

Liver transplantation is the only treatment available for patients with end-stage liver disease. Because the demand for donor livers is greater than the supply, medical professionals select the patients who are most in need. To do this, a test, known as the Model for End-stage Liver Diseases (MELD), is used.

Although MELD has helped to improve how donor organs are allocated to those in need, inequalities remain. Because of a number of factors like a person’s height, the amount of muscle mass or the size of the liver, women’s MELD values are lower than men’s for the same severity of liver disease. A previous study suggests that this reduces women’s chances of receiving a liver by half.

To address this issue, Dr. Bhat led a clinical study to see whether access to living donation could improve women’s chances of receiving a transplant. The study included 1,289 adult patients on the waiting list for a liver transplant at UHN in Toronto and living donations were received from the Living Donor Liver Program led by Drs. Mark Cattral and Dr. Nazia Selzner.

When patients had access to deceased donors, the chances of receiving a transplant were higher in men than in women. However, when patients had access to a living donor, the chances of receiving an organ were equal between men and women.

“Our findings suggest that expanding access to living donor liver transplantation across transplant programs could help overcome the multifaceted problems of access to organs from deceased donors,” clarifies Dr. Bhat.

While access to living donation benefits both men and women, this approach has the potential to particularly help women, who are at a disadvantage for deceased donor organs on the waiting list,” comments Dr. Bhat.

“What we show here is that, by performing living donor liver transplants, our program is able to alleviate sex disparity on the waiting list.

“Our work also highlights the need to refine current clinical tests such as MELD to ensure that the process of organ allocation is truly unbiased.”

This article was submitted by UHN News.

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Five-point plan for better health care

“The urgent need to focus on solutions to improve patient care is a top priority for the profession,” said OMA President Dr. Adam Kassan. “Physicians have a prescription for the future of health care and a roadmap to transformation for Ontario.”

Fixing Ontario’s health-care system will not be quick or easy, said OMA CEO Allan O’Dette, and neither doctors nor the provincial government can do it alone.

“It requires collaboration among health providers, support from the public, and political will, including significant investment from the federal government, including increased spending through the Canada Health Transfer to the provinces to cover 35 per cent of all health-care costs, up from the current 22 per cent,” O’Dette said.

The new analysis of 20 million backlogged health-care services is the first time the OMA has reported on the full impact of the pandemic from its official start in March 2020 until September.

The backlog and estimated time to catch up on five of the most common medical procedures — assuming doctors worked 120 per cent more hours than they did before the pandemic is as follows:

- 30 months for knee replacements (52,492 people waiting)
- 25 months for cataract surgeries (108,736)
- 19 months for hip replacements (22,308)
- 14 months for heart bypass surgery (4,296)
- 11 months for MRIs (502,476)

Compounding the backlog is the fact that Ontario spends less on health care per capita than any other province in Canada except British Columbia, according to data from the Canadian Institute for Health Information. This is a situation that has been 30 years in the making, due to a decrease in per capita spending in the 1990s, flat spending between 2012 and 2016 and spending below the minimum required to keep pace with demand in other years. Ontario’s per capita health-care spending is about 8 per cent lower than the average of other provinces, according to CIHI.

The province also needs more doctors, personal support workers and other health-care professionals at a time when many are retiring or leaving the profession because of burnout exacerbated by working on the front lines of the pandemic.

Ontario ranks seventh among Canadian provinces in number of family doctors per 100,000 patients (2.3) and, if it were a country, would have one of the lowest doctor-to-population rankings among OECD countries (29 out of 33). The shortage is especially acute in northern and rural areas.

The OMA, which represents Ontario’s 43,000 physicians, has developed recommendations in five key areas to fix the gap in the health-care system:

- Reduce the backlog of services and reduce wait times
- Expand mental health and addiction programs in the community
- Improve and expand home care and other community care
- Strengthen public health and pandemic preparedness
- Give every patient a team of health-care providers, and link them digitally.

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www.hospitalnews.com
Buzzworthy project boosts mental health, mindfulness

By Christine Harris

A buzzworthy new initiative has come to Alberta Hospital Edmonton (AHE) with the introduction of beekeeping to its on-site horticulture program.

It’s a sweet idea, called YEG Honeycomb, and it’s part of an urban beekeeping pilot to bring colonies and beekeeping to six historic sites across the Edmonton area.

As well as receiving treatment for their mental health issues, AHE patients also participate in horticulture programs as part of their therapy and care. YEG Honeycomb gives them the opportunity to gain first-hand knowledge of the art of beekeeping, beginning with the basics and eventually helping to manage the hives.

“Our larger mission within Addiction and Mental Health is client-centred care,” says Darren Crawford, program manager, Allied Health and Patient Experience at AHE. “We look at an individual’s interests, goals and what will help them sustain a healthy, positive life as they leave hospital and engage in community opportunities.

“Creating opportunities to see patients engaged, harvesting the honeycomb and supporting that process will help them with their mental health and attaining goals to move forward and transition out of the facility and into the community.”

Increasingly, clinicians are coming to understand how practising mindfulness – the act of being engaged in the present moment – can benefit patients living with mental health issues. Spending time outdoors, being in green spaces and caring for living creatures are a few of the reasons that beekeeping is viewed as a way to promote mindfulness and support their care and well-being.

The pilot was introduced to AHE earlier this summer and will continue to develop at the hospital over the coming years.

“I feel extremely privileged to be working with Alberta Hospital Edmonton,” says Enessa Habib, beekeeping expert and owner of the YEG Honeycomb. “We have an amazing team that wants to bring these programs and services to patients.

“Sometimes we’re inclined to start looking after something that is smaller or more fragile than we are. I think that can really reflect back on us – and help us with what we need to do to take care of ourselves.”

Christine Harris works in communications at Alberta Health Services.

Clinicians and researchers call for genome sequencing to be standard-of-care diagnostic test

As technological advances have increased the feasibility of sequencing a patient’s entire genome, the potential of using genome sequencing as a diagnostic test is becoming more promising, argue a group of clinicians and researchers at The Hospital for Sick Children (SickKids). The authors discuss key points about genomic sequencing in a CMAJ (Canadian Medical Association Journal) practice article.

DNA sequencing is becoming less expensive because of technological advances, although it still costs a few thousand dollars. It can be used to diagnose rare genetic conditions. Diagnosis is an essential first step towards personalized care, targeted treatments and better outcomes. Genome sequencing is being integrated into health care systems internationally, including in the United Kingdom.

“Appropriate adoption of genome sequencing as a diagnostic test in Canada would be facilitated by a highly coordinated national strategy for genomic medicine that couples basic and clinical research, as exists in the United Kingdom and Australia,” says Dr. Gregory Costain, pediatric clinical geneticist and scientist-track investigator in the Genetics & Genome Biology program at SickKids and an assistant professor in the Department of Paediatrics at the University of Toronto.

Although genome sequencing is safe and usually lessens the number of diagnostic tests, leading to a faster diagnosis, the authors list some potential harms. Possible negative consequences are mostly tied to how results are interpreted and disclosed, and the complexity of data generated.

“[G]enome sequencing can be misconstrued as a diagnostic panacea,” the authors caution.

Family history is important to interpreting results, and positive or negative results may not be definitive. As some ethnic groups are underrepresented in the reference databases, misdiagnosis could occur. “Some of the diagnoses made using this advanced genetic test are also so rare that there may be little known yet about potential treatments or long-term consequences for those patients, underscoring the need for genetic counselling to support patients and families,” says Dr. Costain.

In addition to more research on clinical and economic impacts, training of staff, such as medical geneticists, clinical laboratory geneticists and genetic counsellors, is required, as well as ensuring equitable access to care in large countries like Canada.

“Genome sequencing as a diagnostic test” was published October 25, 2021.
In Canada, the rising costs of delivering tertiary care health services and an aging population have prompted a shift towards optimizing primary care and outpatient-based services. Pharmacists have traditionally played a large role in providing care in community pharmacy practices. Today, pharmacists are increasingly expanding and innovating practices in other outpatient settings, including the home.

Given that many older adults in Canada would like to remain in their own homes for as long as they can, home-based care is a desirable and convenient option for many patients. Patients who utilize home care services are often seniors with multiple medical conditions and complex medication regimens, placing them at risk of adverse medication-related events. Thus, pharmacists have a vital role in optimizing medication therapy for these patients. With a continuously expanding scope of practice, pharmacists can provide a wide array of outpatient clinical services. In Alberta, for instance, pharmacists are able to administer drugs by injection, prescribe medications, and order laboratory tests. Home care pharmacists in Alberta are therefore uniquely positioned to address concerns about multiple medications and other health issues.

While there are various iterations of in-home pharmacy services that have been described in the literature, there is limited information about the role of pharmacists working as part of interdisciplinary home care teams. Thus, our research team sought to describe the type of clinical activities performed by home care pharmacists in Edmonton, Alberta over a one-year timeframe. Determining the utilization and scope of clinical services provided by home care pharmacists may help direct practice and maximize benefits to patients.

To provide context, the Edmonton Zone home care program has integrated pharmacy services into the program for over two decades. Along with other allied healthcare professionals, pharmacists provide consultative services and receive referrals from case managers for medication-related concerns. As consultants, home care pharmacists in the Edmonton Zone collaboratively work with other home care health professionals in order to make recommendations and initiate services to manage medication therapy.

Based on data from initial consultations and home visits, our study’s results showed that pharmacists provided a variety of clinical services, including ordering lab tests, prescribing and deprescribing medications, and facilitating seamless care as patients transitioned between inpatient to outpatient settings. Additionally, pharmacists were heavily involved in providing patient education, collaborating with other healthcare professionals, and arranging referrals to other consultants when needed. Particularly of note was our data showing that home care pharmacists played a greater role in optimizing therapy for older patients, female patients, and patients taking multiple medications.

Engaging with the patient in their home enables pharmacists to assess the patient’s use of compliance aids and evaluate how their medication is stored. In the patient’s home, pharmacists can help prevent medication errors by identifying unlabeled products and packing expired or unused medications for disposal. Moreover, home care pharmacists serve a critical role as liaisons at transitions of care between hospital and community settings. For patients recently discharged from the hospital, home care pharmacists can reinforce medication teaching, evaluate changes to medication therapy in the context of the patient’s clinical condition at home, and identify if there is a need for compliance packaging, which can be arranged in collaboration with the patient’s community pharmacist.

Home care pharmacists are also involved in ordering in-home lab collections, which facilitate timely monitoring of medication therapy for patients who may be home-bound or otherwise unable to access laboratory services. The results of our study underscore the broad range of clinical services provided by home care pharmacists, particularly for older patients and those taking multiple medications. The results also illustrate pharmacists’ substantial role in addressing the ongoing need for patient education. Home care pharmacists bring valuable expertise to the interdisciplinary health care team. Integration into home care teams allows pharmacists to be involved in the care of medically complex patients who would benefit from evaluation of their medication therapies. Furthermore, connections to multiple home health care professionals facilitates collaborative care and ensures patients have access to appropriate services.

Optimizing the care of community-dwelling patients has been recognized as an approach to mitigate unnecessary hospital admissions and healthcare costs. In light of the COVID-19 pandemic, the role of home care services and home pharmacy services will likely continue to evolve in the future. We hope that more regions will consider this innovative model of care, with pharmacists integrated into the home care team.
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