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the hospital floors. Researchers have created their own method of predicting the deterioration of patients, so that various nurses and physicians are warned before an all-out emergency occurs.
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SickKids and CHEO launch an Epic partnership

The Hospital for Sick Children recently celebrated the new 'patient-centric' Epic information system that will be installed. SickKids is partnering with Children's Hospital of Eastern Ontario to share patient records and make them available to families. Pictured are Dr. Karim Jessa and Dr. Sarah Muttitt of SickKids; Alex Munter (CHEO); parents and children; and Dr. Michael Apkon of SickKids. **SEE STORY ON PAGE 9.**

Ontario region devises gateway to mental health services

BY ROSIE LOMBARDI

One in five Canadians will be affected by mental illness in their lifetimes, but the hodge-podge of services the healthcare system offers is difficult to access and navigate. To tackle this, the Mississauga-Halton Local Health Integration Network (MH LHIN) has developed an innovative solution that integrates its one-Link initiative, led by Halton Healthcare, with a Novari e-referral system.

The two systems work in concert to weave together the triage and screening processes to ensure clients are sent to the right providers – psychiatrists, psychologists, behaviour and addiction therapists, peer mentors, supportive housing and employment programs – based on just one up-front session with a service coordinator.

Implemented about two years ago, one-Link is the MH LHIN's central intake initiative for coordinated access to services within

the 10 Mississauga Halton LHIN-funded addiction and mental health service providers.

Referrals from primary care providers, along with health and community service providers, are sent to one-Link as a single access point. Each referral is triaged and screened by a service coordinator to deter-

> **By directing mental health patients to the providers they really need, care is much faster.**

mine the right care at the right time and at the right place.

Part of the initiative yet to be activated is a self-referral mechanism to further simplify access.

The initiative tackles a fundamental problem in the healthcare system: Not all mental health clients have conditions severe enough to warrant a referral to a psychiatrist.

"We can divert those psychiatric referrals

to self-management programs, behavioral therapy, and other types of therapy that have really good, validated clinical outcomes that can be delivered sooner and at a lower cost," says Zoe Gordon, one-Link's manager.

But this complexity increases the burden on primary care providers who need to refer patients. Many doctors confess they're bewildered by the array of alternative mental health services available, says Gordon.

"One of the biggest barriers our physicians have identified is that they don't know where to send their patients. There are too many services, and they can't keep up with who does what. One-Link takes care of that work by screening out who needs to go where."

Referrers need only to describe their reason for a referral in the central intake's one-page form and fax it to one-Link, where it's converted electronically and uploaded into the Novari e-referral system.

An appointment with a one-Link service

Ontario region devises one-stop gateway to mental health services

coordinator is set up to complete a 30-minute session to determine the level of care and type of service needed. The outcome of the screening is then routed through Novari and the patient's information is transmitted to the selected specialist or service provider to schedule an appointment.

The system is set up to send alerts if a client isn't seen within 30 days or if other issues come up.

Wait times have gone down dramatically since the Novari system went live in June 2016. "Our wait times went down from a 37-day wait for screening in March 2016 to our current three-day wait," says Gordon, adding that one-Link refers to individuals seeking addiction and mental health services as 'clients' rather than 'patients'.

The one-Link team spent a year implementing the initiative and establishing standardized processes with its partners.

A Novari e-referral system, already utilized for managing referrals to diabetes services in the Mississauga Halton LHIN region, was later integrated for addiction and mental health services.

The solution enables the flow of referrals between the requesting provider, one-Link and the receiving programs. All parties are able to see the live status of the referral at any given point in the referral process. The technology reduces processing time by 300 percent compared with manual fax/paper processes.

In addition, the solution has also helped cut costs substantially, says Gordon. "In the past, every single patient who was referred from a primary care physician was sent to see a psychiatrist. These are the highest-cost providers in the mental health system, and they typically have very long waiting lists. Wait times were skewed in that many people wouldn't benefit, nor did they need that level of intervention."

One-Link also helps facilitate access to all the different levels of mental health support services that are available across the LHIN, and gives clients more options. "This is particularly helpful for individuals who may not be willing or ready to start taking medication but are ready to try a non-medication based intervention in their illness management."

Long-term, the solution will also pro-

Nala Sriharan and Zoe Gordon, project leaders

vide epidemiological insights that will help the LHIN improve management of mental health costs and outcomes.

"One-Link is breaking new ground by bringing to light accurate data about the true addiction and mental health needs and costs in our region," says Gordon. "Over the next few years, we can really build a case for increased funding around the services that work best."

The LHIN is planning to make improvements to the solution in the near future to boost its efficiency. In the next phase, the fax step will be eliminated, and doctors will be able to access the Novari eRequest sys-

tem directly to schedule a screening appointment when the referral is made.

"Right now, the referral is still faxed in and then uploaded into Novari, but that was deliberate," says Gordon. "We want to work with primary care providers over time to ensure they're working well with the technology."

Other LHINs are interested in Mississauga-Halton's holistic model designed around a single access point combined with an e-referral system, says Nala Sriharan, manager of the Central Intake program at Halton Healthcare. "The Central East LHIN has procured a Novari system to build 16 different pathways, and the Central West LHIN also has also procured the solution for at least three pathways."

The solution requires a great deal of co-operative effort to implement, says Sriharan. The Central Intake team spent over a year on co-design with Novari, refining the underlying processes before moving to an electronic platform.

"We worked hard with our 10 mental health services providers to develop the processes on paper and really get a handle on them through continuous quality improvement," says Sriharan.

Novari's developers were diligent in working with the one-Link team on system development, she adds. "Novari is at the forefront in understanding the human impact of the systems they design. We really co-built the technology."

Novari is recognized in the healthcare community for developing surgical wait time software, but the company has broadened its focus in recent years to develop new systems, says John Sinclair, president of Kingston-based Novari Health. "When we developed our e-referral system, what we really wanted to specialize in is what's generically called access to care: how patients get into the healthcare system and move through it."

To tackle this, the company conducted extensive research internationally – and concluded there was no standardization, says Sinclair. "There's so much variety everywhere in the way referrals are managed. How you do diabetes might be different from how you do addictions, which might be different from palliative care, and so on. So we decided what we needed to do was come up with a flexible workflow engine that could work in all medical areas."

But Sinclair emphasizes the importance of Mississauga-Halton's one-Link solution. "It's a great model regardless of the technology. No one is doing central intake and improving access to care better than them. They're the best demonstration site not only for the technology but for their processes."
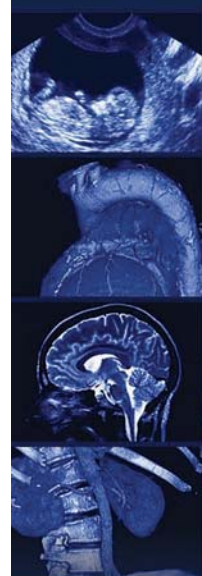
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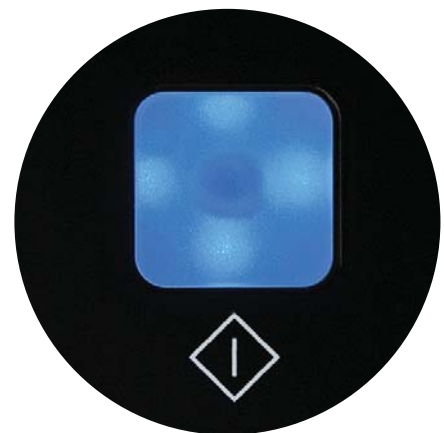
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1. Ryndock E, Robison R, Meyers C. Susceptibility of HPV16 and 18 to high level disinfectants indicated for semi-critical ultrasound probes. J Med Virol. 2016;88(6):1076-80..

Code Blues become a rare occurrence at Hamilton Health Sciences

BY JERRY ZEIDENBERG

HAMILTON, ONT. – Code Blues used to sound every day at Hamilton Health Sciences (HHS), but an early warning system that measures six vital signs has been used to dramatically reduce their incidence. Now, it can be days before one hears a Code Blue at most of the hospital's acute care sites.

The Hamilton Early Warning System (HEWS) was developed in 2010 by a team of clinicians at Hamilton General Hospital (HGH) led by Dr. Alison Fox-Robichaud, a critical care physician. By monitoring vital signs such as oxygen saturation, pulse and respiratory rate, the system can quickly determine if a patient is deteriorating to the point that the response team should be called for help.

In most cases, a cardiac or respiratory arrest can be prevented with appropriate intervention. HEWS is the system that triggers that early response from care teams and, so far, the impact has been significant.

By not alerting the team in a timely manner, patient lives can be lost. The situation has been dubbed "failure to rescue", and can also become a source of costly litigation between hospitals and patient families.

With HEWS, the vital signs are manually collected and entered and the electronic medical record calculates a score. Based on the number, the nurse is given an alert to

Laura Vanbomme, Dr. Alison Fox-Robichaud and Jim McDonald are on the rapid response team at HHS.

call the physician and/or the response team.

While the province of Ontario started funding resuscitation teams in 2006, the concept of a response team was foreign to staff and physicians. Rigorous education and training was implemented at HHS to foster uptake of this new change of practice. Today, the resuscitation – also known as "RACE" – teams are a vital resource.

Dr. Fox-Robichaud observed that with the use of HEWS, the volume of calls to the response team has risen, but the number of transfers to the intensive care unit (ICU) has dropped considerably.

"You do increase the workload, but at the same time, you decrease the transfers to the ICU," she says.

The original HEWS pilot project in 2010 showed an increased call volume to the critical care response team, but only a minor increase in the number of ICU admissions and a 50 per cent reduction in cardiac arrests on the pilot unit compared to the previous year.

In addition to vital signs, HEWS also scores delirium, which is monitored by nurses.

"It's a unique factor at Hamilton Health Sciences, and it helps recognize the evolution of sepsis," said Dr. Fox-Robichaud.

Sepsis is also a major cost for hospitals; in the United States alone, said Dr. Fox-Robichaud, the cost reaches $23 billion per year. She noted that HEWS scoring may be superior to traditional forms of monitoring for sepsis development.

Using the collected data, a score is tallied and the appropriate action can be taken. With a score of three, the charge nurse is informed; with a score of four, a call is made to the patient's most-responsible physician; with a score of five, the response team is called for an assessment; and for six, a very important intervention must be made. A score of seven will trigger a Code Blue alert.

The system integrates with the hospital's electronic patient record, which is supplied by Meditech. Currently nurses manually input the data into the system, where the analytics engine calculates scores.

A recent improvement has been the addition of smartphones, which make data collection easier and automates the alerting process.

"We're moving to mobile," said Chris Probst, director of HITS Informatics at HHS, who noted the mobile app was cre-

Portable screening tool for diabetic feet can prevent amputations

BY KELLY O'BRIEN

TORONTO – More than 3 million Canadians have diabetes, a number that has nearly doubled since 2002 and continues to grow. These patients have tools to manage their glucose levels, but no tools to help them manage foot wounds that often lead to infection and amputation.

That's where MIMOSA comes in.

MIMOSA (Multispectral Mobile Tissue Assessment Device) is an early-detection tool developed by Dr. Karen Cross, a surgeon scientist at St. Michael's Hospital in Toronto, and Dr. General Leung, a magnetic resonance physicist at St. Michael's.

The device detects poor blood circulation in the feet, which can lead to diabetic foot ulcers, by photographing the skin with near-infrared light, just beyond the range of human vision.

"It's just above the visible region, so it's safe, but also it has deep penetration into the skin, so it's going to get below that top layer," said Dr. Cross. "It can see things that we can't, so it can see whether the skin perfused, if it has an oxygen supply, if it's viable, and you can measure a lot of different types of molecules within this region."

Dr. Cross likened the near-infrared light MIMOSA uses to the technology used to discover that Leonardo da Vinci was the original artist behind The Ado-

ration of the Magi, the painting most often attributed to Filippino Lippi. The light allowed art historians to view the different layers of the painting without damaging it.

"We're doing the same thing," said Dr. Cross. "Before, to see how much hemoglobin you have, you've got to take blood. But that's a sample. You're damaging something by putting a needle in there. We can actually do it by not damaging anything."

Between 15 and 25 percent of people with diabetes will have a foot ulcer at some point. These ulcers often become infected and as a result, diabetics are 23 times more likely than the general population to have a lower limb amputation. Of those who have an amputation, 30 percent die within one year. After five years, the mortality rate jumps to 70 percent.

For people with diabetes, said Dr. Cross, access to this technology could have a huge impact on their health and peace of mind.

"If we tell patients we have this technology that will be able to provide surveillance for their feet, they look at us like, 'Where do I buy one?' Their feet are a big concern to them, and they really have no idea how to check properly."

The technology MIMOSA uses to monitor wounds isn't entirely new – it was originally developed as an early detector and triage tool for determining burn depth. But what has changed is the size – perhaps the most important part for patients.

"Because of the way the technology's changed, and because we have so much computing power in our pockets and our cell phones, we're able to shrink it down," said Dr. Leung. "So now it's evolved from being ten or twelve feet tall to being a little clip-on device."

The device is designed to work for all diabetics, no matter their age or level of mobility.

"This is something you could put on a selfie stick and put it down below and take a picture," said Dr. Cross.

Patients can use MIMOSA to take pictures of their feet on their cell phone, according to Dr. Leung. The photos are collected via e-MIMO, MIMOSA's e-mobile health component. They are sent to e-MIMO's secure

Surgeon Dr. Karen Cross with Dr. General Leung, a physicist.

cloud, and from there, the team can start processing the data and see how the patients are doing.

"We can build a data bank where we're going to be able to look at people as they're developing these wounds," said Dr. Leung.

The team has already seen success using MIMOSA to monitor wound development in a recently completed pilot study, and will soon begin work on a two-year, multicentre randomized controlled trial.

"We can give earlier warnings that these patients may have problems with their blood vessels and we can also do something about it through an operation, or through a dietary intervention, or change something about this patient's lifestyle to change how the problem is going to progress," said Dr. Leung. "We can figure out what tells us when people are starting to go downhill, and when they're stable and okay, giving us an alert system that may help us prevent these amputations."

It will also allow healthcare professionals to monitor their patients remotely, eliminating the need for biweekly hospital visits and providing access for patients in rural communities without a doctor, said Dr. Cross.

Kelly O'Brien is a communications advisor at St. Michael's Hospital, in Toronto.

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Montreal Children's Hospital surgeon develops My First Surgery app

BY SANDRA SCIANGULA

A few years ago, when his daughter had to undergo surgery, Dr. Robert Baird, a pediatric surgeon at the Montreal Children's Hospital, gained a whole new understanding of the importance of a communication tool to help ease parents' and patients' anxiety about the process.

"Even though my daughter was undergoing a minor surgery, and I have firsthand knowledge of what goes on in the OR, I felt anxious. I really believe that the better prepared you are, the better the procedure will go," says Dr. Baird.

So he came up with the idea of the My First Surgery app and partnered with Montreal-based digital development company Stradigi. Together, they addressed the growing need expressed by parents and patients to better prepare for their first time in the operating room.

The interactive app runs on iPads and breaks down each step by explaining what will happen before, during, and after the surgery in a way that children can understand. It also offers a special section for parents.

"We value patient and family-centered care at the Children's, and this app aligns with that philosophy by offering families a tool that provides a great deal of informa-tion about what their surgery experience will be like," says Dr. Baird. Placing greater focus on patient and family-centered care was also made a priority by Accreditation Canada in 2015.

The app is colourful and easy to use. It includes a "Child view" with five easy-to-use scenes featuring interactive characters and Operating Room (OR) equipment, as well as a personalized feature that lets parents embed their child's picture within the app.

The "Parent view" provides tips and information every parent should know prior to the surgery and videos featuring a pediatric surgeon that provide additional information about what to expect. "We know that in moments of stress, such as finding out your child has to undergo surgery, we forget to ask our doctors key questions, so the app tries to go over those questions for parents."

Dr. Baird believes that everyone should have the right to be informed about and prepare for surgery, so he wants to make the app available to as many people as possible.

He adds, "I'd like to see the app grow to become multilingual and eventually become available for iPhone and Android users too."

In October 2016, Ma première chirurgie, the French version of the app, was launched, and Stradigi sees many ways the app can

Dr. Baird was motivated to create the system by his own experiences.

continue to evolve. In addition to making it multi-lingual and multi-platform, Carolina Bessega, Chief Technology Officer at Stradigi has big dreams for the app.

"We want to integrate Artificial Intelligence into the app," she says. "For example, we can incorporate a chatbot with a sentiment detector, so that when parents and patients respond using speech, the app can detect how the user is feeling and respond accordingly."

Bessega also mentions the possibility of combining virtual reality and augmented reality so that users can learn about OR equipment and its usage

through an interactive and fun game for kids.

"The game can be played from anywhere, so long as the app has a live view," she explains. "Players will be asked to find an object, like a green square, and once it's found somewhere within their immediate environment, it's revealed as a tool or a piece of equipment used in the OR and in return, the player is rewarded with points and an explanation of what they found."

The app has been downloaded as far away as Australia. Dr. Damien Maxwell, a pediatric surgeon at the Charleston Area Medical Centre (CAMC) in West Virginia, is one of the app's users.

"The app is installed on iPads the patients play with in the preoperative waiting area at our hospital," explains Dr. Maxwell. "The feedback has been very positive and has reduced anxiety in patients just prior to surgery. I show patients and families the app maybe once a week but they often find it on their own and many of them play with it on a regular basis."

The app, available in English and French can be downloaded for free from Apple's App Store for iPad use. To find out more or to contribute to the development of the app, visit www.myfirstsurgery.com.

Sandra Sciangula is in the Public Relations and Communications Department at the Montreal Children's Hospital.

Code Blues at HHS become rare occurrence

ated in just ten weeks. The Android phones, which also have integrated bar code scanners to check wristband codes for patient safety, are now being used in the HEWS project.

The app prompts nurses to enter the necessary information about vital signs and delirium. Scoring is automatic, and notifications are sent immediately.

Hamilton Health Sciences is working on analyzing the numbers to determine how many patients have been prevented from ICU transfers since the rollout of the system in 2014. It also has a grad student assessing the selection of vital signs that are used, to determine if they are the best mix.

What is known is that the system has made a noticeable difference at Hamilton Health Sciences. "Code Blue is now rare, at least during the day," said Dr. Fox-Robichaud. "You can go for several days without hearing one, at least in the daytime. Now, we're working on the nighttime," she said, noting there are fewer nurses and other professionals working the evening shifts.

The team is also developing a set of indicators for pediatric care.

Dr. Fox-Robichaud said that other hospitals interested in starting an early warning system must put a premium on communication and training.

"You have to engage your front-line

staff," she said. "Without that, you won't have success."

She noted there is a cultural shift that goes along with the new system, as it flattens the hierarchy in the hospital. Nurses can't be overridden by senior nurses, residents or physicians. "Nurses shouldn't be prevented from contacting the team," she said. "It's not about saving face, it's about saving lives."

Recently, HHS has involved IBM Canada through a collaborative innovation partnership to bring advanced analytics to the project, and to explore opportu-

> **You can go for several days without hearing a Code Blue at Hamilton Health Sciences, at least during the daytime.**

nities to deploy HEWS to other hospitals across the healthcare system.

"This is a prime example of frontline-driven healthcare innovation that's having a significant impact on patients' lives," said Ted Scott, chief innovation officer at HHS.

"By infusing this unique, HHS-born innovation with the world-class technology and business insights of IBM, we'll be able to develop an effective, invaluable product that will continue to transform healthcare delivery, beyond Hamilton and, perhaps, around the world."

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Robotic surgery will see more international providers, lower prices

DAVID MCNALLY

By now, most of us are familiar with the term 'robotic surgery'. Robotic surgical devices enable surgeons to remotely guide and control surgical instruments placed through one or more incisions in a patient's body. The surgeons could be 500 kilometres away or located in the same operating theatre as the patient. The 'robotic' aspect of the surgery involves a computer system and display that serve as the interface between the surgeon and a precision electro-mechanical system close to the patient which is performing a surgical maneuver as directed by a surgeon user.

Benefits of the use of robotics in medical applications include the ability to filter unwanted motions, increased dexterity, high definition vision, increased ergonomics, reduced scarring, reduced blood loss and faster recovery times for patients.

Previous to the introduction of robotics, an historical move to laparoscopic procedures from open surgery resulted in less invasive procedures for patients.

However, that move also introduced certain disadvantages for surgeons, including reduced dexterity and decreased vision of the surgical field.

With high-definition, three-dimensional imaging and surgeon-friendly ergonomic performance, robotic surgery can provide the surgeon with what was lost with the move from open surgery to laparoscopic surgery, yet with the clinical advantages of laparoscopic surgery.

Although robotic surgery has many advantages, only one company, Intuitive Surgical of Sunnyvale, California has capitalized on the opportunity with its da Vinci Surgical System.

Founded in 1995, Intuitive Surgical has since developed several iterations of its da Vinci system, which was initially cleared by the FDA in 2000 for general laparoscopic surgery. Since that time, da Vinci systems have been used to perform more than 3 million surgical procedures, including urology (prostate, bladder and kidney cancer), gynecology (benign and cancerous hysterectomy; myomectomy), general surgery (colorectal; ventral and inguinal hernia repair), thoracic surgery (lobectomy; mediastinal mass) and cardiac surgery (mitral valve repair; pulmonary resections).

To date, Da Vinci procedures have been performed in 64 countries worldwide.

Notwithstanding the success that Intuitive Surgical has experienced, the global surgical robotics market opportunity is largely unpenetrated and is expected to grow substantially from approximately $3 billion in 2014 to over $20 billion by 2020. It is anticipated that robotics will remain a norm in the operating room in coming years along with more surgical specialties adopting the use of robotics.

In addition to Intuitive Surgical, several new entrants have emerged in the areas of general, spine, ophthalmic and neurosurgery. Some of these newer companies include Medtech SA of France with its ROSA device for neurological procedures (acquired by Zimmer Biomet), and Toronto-based Titan Medical Inc. Titan is developing the SPORT Surgical System, a single port robotic surgical system, to address the clinical, operational and financial limitations of existing robotic platforms, and the company aims to expand robotic surgery into areas that are currently underserved in general abdominal procedures.

Titan believes that SPORT will allow surgeons to perform minimally invasive procedures with precision in small to medium size surgical spaces.

Other companies in the process of commercializing systems for general abdominal procedures include TransEnterix with its Senhance Surgical Robotic System, Verb Surgical, a joint venture between Johnson & Johnson's Ethicon Endo Surgery division and Alphabet's Verily Life Sciences, and Virtual Incision Corporation.

David McNally is President and CEO, Titan Medical.

SickKids and CHEO partner to create integrated system of patient records

BY JUSTIN FAIOLA

TORONTO – The Hospital for Sick Children (SickKids) has begun a multi-year project to implement a fully integrated health information system using software from Epic, an industry leader in electronic health record software. In addition, SickKids and the Children's Hospital of Eastern Ontario (CHEO) have partnered to develop and implement the first integrated Canadian paediatric instance of Epic.

The project will fundamentally change the way SickKids provides care and will improve research by bringing all patient information and charting into one integrated electronic system.

"The evolution of patient care, not only at SickKids, but throughout the entire healthcare system, has become incredibly complex and fragmented," says Dr. Michael Apkon, President and CEO of SickKids. "We need to work towards creating a more coordinated system to improve care across the province; a system where a child's entire care team, including their family, can contribute their expertise and access their health information."

The Epic system also provides patients and their families with anytime access to their health information through an online portal called MyChart, a radical de-

Alex Munter and Dr. Michael Apkon sign contracts to make the partnership between CHEO and SickKids official.

parture from the limited access many patients and families currently have.

"Implementing Epic will help SickKids significantly improve hospital efficiencies, enhance patient safety and access to patient information, and overall create a more seamless care experience for children and their families," says Dr. Apkon.

To tackle this complex, transformative process, SickKids has assembled more than 100 project staff who will be dedicated to working on the project. In addition, hundreds of staff from across the hospital will work closely with the project team to shape the system into one that reflects the care delivered at SickKids.

"This investment we are making is not just an IT project," explains Dr. Sarah Muttitt, Vice-President and Chief Information Officer at SickKids. "There will be a mass amount of change that will also transform the way we do business and the way we operate clinically. It's exciting, but it's going to be a challenging process; one that will force us to re-imagine the way we do our work and deliver care to children and their families."

In addition, the SickKids-CHEO part-

nership will inspire and facilitate innovations that will result in better, more consistent and more coordinated care, especially for patients with complex needs. It will also help set the provincial standard for paediatric care, scale up a mutual vision for clinical research, benchmark and re-

port on quality improvement practices across a broad range of paediatric service providers, and ensure a more efficient and sustainable future.

"As healthcare innovators, this is a significant opportunity and one of our best hopes for the future of high-quality, inte-

grated care for kids across Ontario," says Alex Munter, President and CEO of CHEO, which is already using Epic in its labs and outpatient clinics. "Our experience with Epic has truly been all about the transformation of our clinical care for children and their families."
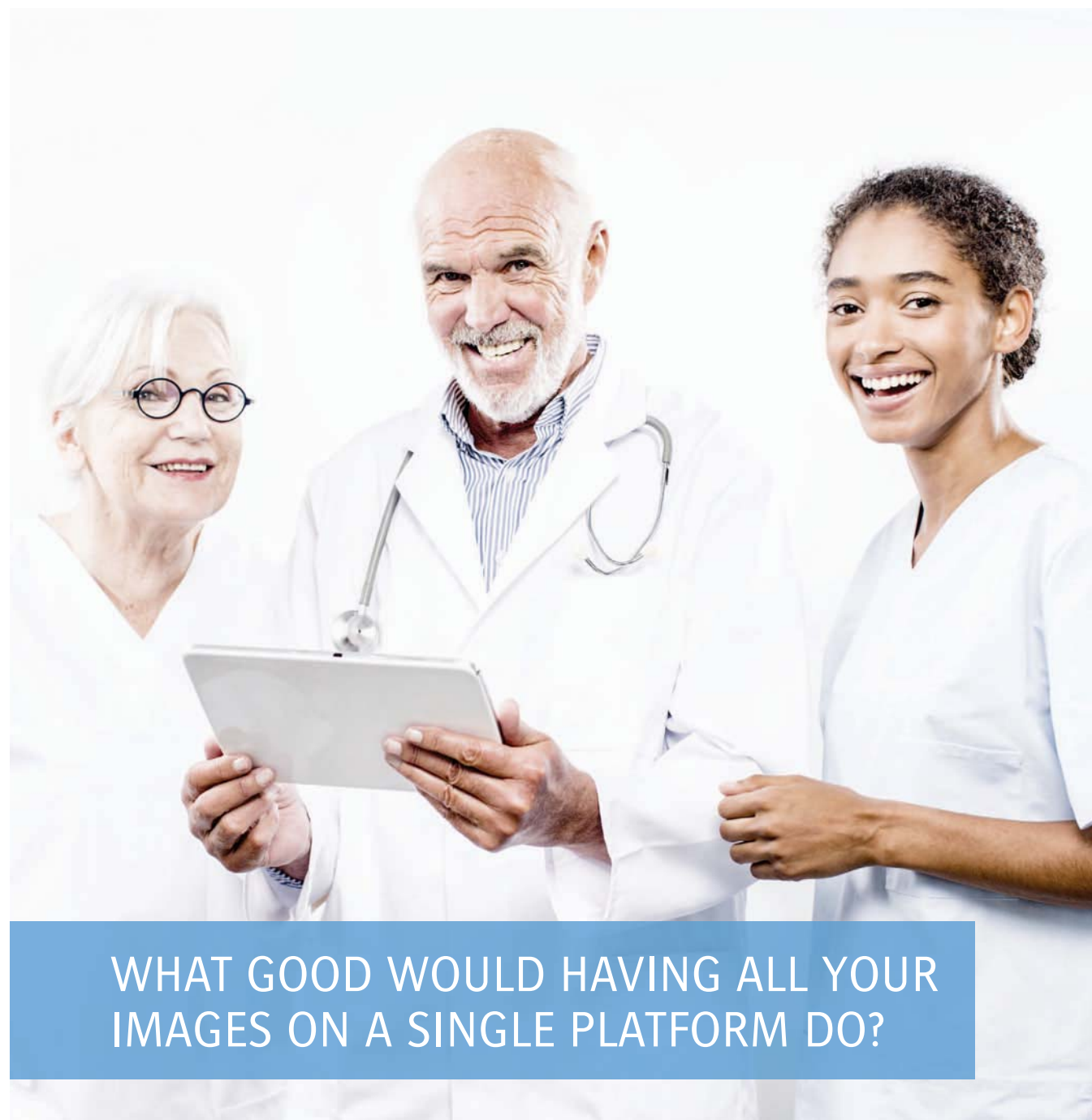
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3D imaging in the OR shown to improve outcomes for spine surgery

Surgeons conducted a study of 502 patients using O-arm assisted surgery or a C-arm.

VANCOUVER – Spinal deformities and spinal trauma are often treated with pedicle screw implants. Traditionally, surgeons insert the screws free-hand using 2D fluoroscopy, but a team of spine surgeons in Vancouver found computer-assisted surgery (CAS) with an intraoperative imaging device and 3D navigation system significantly improved clinical outcomes and resulted in cost-savings over time.

In the first study of its kind, spine surgeon Dr. John Street and colleagues at the Vancouver Spine Surgery Institute at Vancouver General Hospital (VGH) compared clinical outcomes for two groups of patients. The test group of 253 patients received computer-assisted surgery (CAS) with Medtronic's O-arm imaging device and StealthStation navigation system; and the historically matched control group of 249 patients received surgery with conventional fluoroscopy using a standard C-arm device.

The study found the accuracy rate for screw placement was 95.2 percent for the CAS group, significantly higher than 86.9 percent for the conventional treatment group.

"CAS technologies provide real-time, 3D images of the bony anatomy of the patient's spine. Adding that extra dimension makes a significant improvement in the accuracy of screw placement," says Dr. Street.

As a result of higher accuracy, only two patients in the CAS group required a repeat operation to address misplaced screws compared to 15 patients in the fluoroscopy group.

The O-arm and StealthStation technology also show distinct cost savings, a significant consideration in today's healthcare environment, where few new technologies have robust economic data and even fewer can claim a strong ICER with a conservative break-even point.

In this study, the surgeons calculated an Incremental Cost

Effectiveness Ratio of C$15,961 per reoperation avoided for the CAS group, a figure that falls well within the $20,000 or lower threshold many health systems use to indicate significant value.

Based on an estimated reoperation cost of C$12,618, the study concluded that the O-arm and StealthStation are cost-effective for sites performing more than 254 pedicle screw implant procedures per year over a period of seven years.

VGH performs between 500 and 600 surgeries per year, and across Canada, and there are about 17 sites that perform at least 300 surgeries per year, according to Dr. Street. The break-even analysis was very conservative, including only the purchase and maintenance costs of the O-arm and StealthStation, and the cost to reoperate.

Further, the study authors collected the data during their first four years of experience with the technology, suggesting a learning curve may have contributed to some of the surgical outcomes.

CAS provides additional benefits over conventional fluoroscopy. "The radiation exposure for the surgical team is zero, as they are out of the room when the O-arm takes an image of the patient at the beginning of the procedure," says Dr. Street. "That's a vast improvement from cumulative exposure over time even while wearing heavy lead aprons during five- to seven-hour surgeries."

Population health management is the next big challenge

At Cerner, we believe it is time to go beyond the traditional focus on electronic patient health records and evolve into the proactive health-management of populations.

Through EHR adoption and interoperability tools, care providers have an increasing amount of clinical information about a person available at their fingertips, but this information can only be effective if providers can use it to better help the person.

Population health management focuses on shifting from reactive care to proactive health. By gathering data and meaningfully using it to engage a community and exchange information between care providers, we can ultimately drive better outcomes for individuals. This shift in perspective will shape the future of healthcare – one driven by accountability, transparency and value.

Moreover, transitioning from a system focused on acute facilities to one more focused on integrated primary and community-based care requires a complete, comprehensive view of a person that can be shared across venues of care. It also requires the ability to meaningfully use that data to engage individuals at the right time.

Improving health and care will require a comprehensive strategy in which everyone is informed, connected and accountable. Our vision for population health management is focused on creating a proactive community that places the person at the centre, with their family and care-team acting as a support system.

We believe the best way to manage the health of a population is one person at a time. Whether you're associated with an employer, health organization, provider or community organization, a programmable suite of solutions and services must enable you to:

• **Know and predict what will happen within a population:** If care-team members are to improve health and care, data must flow freely across venues and the community. When combined, this data creates a comprehensive view of each person's or population's health and care experiences. This view helps inform the care team, enabling them to make the best health and care decisions based on all available data.

• **Engage the person, their family and care team to take action:** Healthcare is personal. Consistent, connected engagement tailored to each person's unique needs and dri-

vers is essential. This level of engagement empowers people to be active participants in their health and care while being supported by people in their daily lives.

• **Manage outcomes to improve health and care:** To improve and maintain outcomes at a person, population, clinician and organization level, you must continually identify areas of opportunity and measure and monitor performance through

> **Population health management focuses on shifting from reactive care to proactive health.**

data-driven analytics and real-time intelligence.

Care providers and stakeholders need to know what happens beyond the data captured in the EHR. They need an organized, coherent view of a person's health and care story, while leveraging their existing IT investment, including clinical and financial systems.

Capturing data that spans the health continuum is challenging. There are a variety of file formats, proprietary barriers, and data to

process and host. To overcome these challenges, we created HealtheIntent, a programmable, scalable, system-agnostic platform.

Aggregating data is a great start, but no matter the amount of data aggregated, it will only be meaningful if it is put into a consumable format. HealtheIntent cleanses raw data to identify discrepancies, normalizes similar data into groups and standardizes the data to match industry terminology.

Each person's data (regardless of the source system, including EHRs, claims, HIEs, provincial repositories, and other transactional systems) is linked to form a comprehensive picture of a person's health and care story.

The longitudinal record is the backbone for all HealtheIntent-powered solutions and enables organizations to gain transparency to person- and population-level information from across the community within a single system in near real-time.

Solutions that leverage the platform can be securely accessed from any web-enabled device, anywhere, anytime. The solutions that leverage the platform feed knowledge and decision support into the clinician workflow.

The correct identification of clients: Essential patient safety practice

BY MARG BACHLE

There has always been an emphasis on the safety of patients in hospitals. However, attention to patient safety was significantly enhanced at the beginning of this century with the release of reports in the United States outlining the number of errors which occurred while patients were in hospitals.

Several highly publicized patient errors further brought attention to errors occurring in hospital, and similar results were found in Canadian hospitals.

This enhanced focus on patient safety in hospitals continues. Goals to improve patient safety are found in the accreditation programs in both the United States and Canada today. The Canadian accreditation program, QMENTUM, has developed 31 Required Organizational Practices, including the accurate identification of patients, which is necessary to ensure patients receive the care and treatments planned for them.

In this article, specific processes required to ensure correct identification of patients using patient specific identifiers (PSIs) are discussed. These processes define how to identify patients, as well as when, and which staff must apply the process to accurately identify patients before services or procedures are provided to them.

The focus on patient safety increased significantly with the release of the U.S. Institute of Medicine reports, "To Err Is Human," in 2000, and "Crossing the Quality Chasm: A New Health System for the 21st Century," in 2001. In Canada, "The Canadian Adverse Events Study," led by Baker and Norton and released in 2004, gained a great amount of attention.

Despite efforts to improve, recent evidence still shows that one in three hospitalized patients experience an error or an adverse event, according to a 2013 article entitled, "Update on Safety Culture," by Frankel and Leonard.

In 6 percent of these cases, the adverse event prolonged the patient's hospital stay and may have left the patient with some degree of disability. Some of these errors resulted from mistaken identification.

As a result of the enhanced attention to patient safety, the American accreditation body, The Joint Commission, and Accreditation Canada developed patient safety goals related to accurate identification of patients.

For example, in the 2016 version of The Joint Commission's Hospital National Patient Safety Goals, the first of its 15 goals is to identify patients correctly.

The elements contained within this goal include: "Use at least two patient identifiers when administering medications, blood, or blood components; when collecting blood samples and other specimens for clinical testing; and when providing treatments or procedures. The patient's room number or physical location is not used as an identifier."

Moreover, "containers used for blood and other specimens must be labelled in the presence of the patient."

In Accreditation Canada's QMENTUM accreditation program there are six patient safety goals identified. The correct identification of patients is included under the goal of "communication." As well, in partnership with clients and families, at least two person-specific identifiers should be used to confirm that clients receive the service or procedure intended for them.

In 2005, Accreditation Canada introduced the concept of a Required Organizational Practice (ROP) into its accreditation program. An ROP is an evidence-informed practice that mitigates risk and contributes to improving quality and safety of health services.

In 2008, the use of two client identifiers to correctly identify patients was introduced. Each ROP has one or more tests for compliance and each test must be fulfilled before the ROP is considered to be met.

As such, ROPs have more importance than the other standards as failure to fully

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Creating
healthier
stories

Enhanced Recovery After Surgery spreads through Canada

The system relies on questioning surgical protocols from the past and closely observing patient recovery.

BY DIANNE DANIEL

Canadians recovering from surgery are leaving hospitals sooner with improved outcomes thanks to a growing push to implement Enhanced Recovery After Surgery (ERAS) – evidence-based protocols that require compliance by both clinicians and patients.

Provincial results are so encouraging, proponents are now pushing for a national network so that tools and best practices for implementing ERAS can be more widely disseminated.

"We have to change the culture," says Dr. Claude Laflamme, Medical Director of Quality and Patient Safety in the Department of Anesthesia at Toronto's Sunnybrook Health Sciences Centre. "People think if I have an operation tomorrow I cannot eat or drink after midnight because that's what we've been saying for years. But the guidelines have changed," he says.

The movement is based on ideas initially put forth in the 1990s and in its simplest form aims to change tradition to best practice. Though it started with a set of guidelines directed at colorectal surgery, it is now being applied across several disciplines, thanks in part to the work of the international ERAS Society and its many national arms, including Canada.

As Chair of the Canadian Anesthesiologists' Society (CAS) Patient Safety Committee, Dr. Laflamme is currently working with key clinical leaders and associations to enhance the adoption of ERAS across Canada and build on early successes in Quebec, Ontario, B.C. and Alberta.

"Basically what we're creating at the Canadian Patient Safety Institute (CPSI) is a network for dissemination of knowledge and implementation tools. As well, we're working to find an audit system that will allow us to measure the impact of ERAS," he explains. "We call it ERAS for all Canadians."

In simple terms, ERAS introduces new ways of managing care before, during and after surgery that have been shown to help patients heal and get back to normal everyday functions as soon as possible. Following ERAS protocols also helps to standardize processes related to surgical care so that everyone is working from the same information, from surgeons, nurses and anesthesiologists to dietitians, administrators and patients themselves.

Implementing ERAS requires significant cultural change because many of the protocols – also referred to as guidelines, pathways or care processes – turn convention on its head.

For example, instead of fasting, patients are allowed to drink up to two hours before their procedure and in some cases, special carbohydrate-loaded liquids are prescribed; they are also encouraged to get up and walk, and return to solid foods sooner. The number and complexity of protocols per surgery depends on the procedure and can include everything from fluid and pain management to whether or not to use a Foley catheter. Patient education is always the starting point.

"The ultimate goal is to speed up patient recovery by minimizing complications. By doing these steps you lower the risk of complication for your patients and then they can heal faster," sums up Angie Chan,

former Project Manager, Surgical Improvement, for B.C.'s Specialist Services Committee (SSC).

From November 2014 to January 2016, 11 surgical sites across B.C. worked together as the B.C. Enhanced Recovery Collaborative to implement ERAS evidence-based pathways. Their approach focused on quality improvement and involved careful monitoring of every elective colorectal surgery to measure compliance with 22 protocols, from pre-admission counselling to post-op care.

According to the final report, from January to December 2015 the complication rate fell from 32 per cent to 22 per cent and hospital length of stay fell from seven days to five. Since then, the number of B.C. hospitals participating in ERAS has grown to 22 and pathways are being applied to additional areas, such as breast reconstruction, urology and vascular surgeries.

Data collection and auditing is vital to an ERAS implementation, explains Chan. The majority of

ILLUSTRATION: LINDA WEISS

larger sites in B.C. use the National Surgical Quality Improvement Program (NSQIP) software from the American College of Surgeons to collect process and outcome data, while smaller sites rely on Microsoft Excel spreadsheets.

When the colorectal ERAS pilot ended and SSC provided a bridge fund to support ongoing implementation efforts, 20 of the 22 sites asked for data support. "Data is an important engagement tool, especially when we see results," she said.

Vancouver General Hospital was one of the first in B.C. to introduce ERAS as a quality improvement project and now monitors as many as 50 process-measures for colorectal, radical cystectomy, gynecology/oncology and major hepatobiliary oncology surgeries.

In addition to using NSQIP, it developed its own database and document management system to facilitate data collection, adding an extra level of detail in many cases in order to gather a more robust set of data.

Whereas the standard data definition related to giving solid food to a patient simply measures whether or not it was given, for example, Vancouver General records whether or not the food was consumed. Similarly, when looking at "goal-directed fluid therapy" as an ERAS step, the hospital records which monitor was used and the exact amount of fluid delivered.

"Some of the definitions around these things have been a little bit loose, not only within NSQIP but even within the ERAS Society," says Vancouver General Anesthesiologist Dr. Kelly Mayson, noting that the overall goal is to make information much clearer. "If you're trying to move change along, and you want to see if there's increased compliance or if certain patients are doing better than others, then you need to know exactly what combination of drugs and fluids they actually got."

For the moment, data collection remains a manual process at Vancouver General, relying on nurses or administrators to pull data from patient charts and enter it into the ERAS database manually. Patients have a checklist at bedside to track their post-op activity and that information is updated to the patient chart by nurses. If any variances from what is directed in the protocol are detected, they are investigated immediately. Reports are also generated to keep clinicians informed about outcomes as well as compliance.

"On a monthly basis we can go back to the surgeons and say out of all the process measures we have, here's where we're at with compliance," says Andrea Bisaillon, Operations Director at Vancouver General Hospital. "The data is the proof in the pudding around whether you're actually doing it or not."

"You can't do the quality improvement without the data," notes Chan. "If you don't know how your changes are materializing, it's impossible to identify the areas where you need to improve."
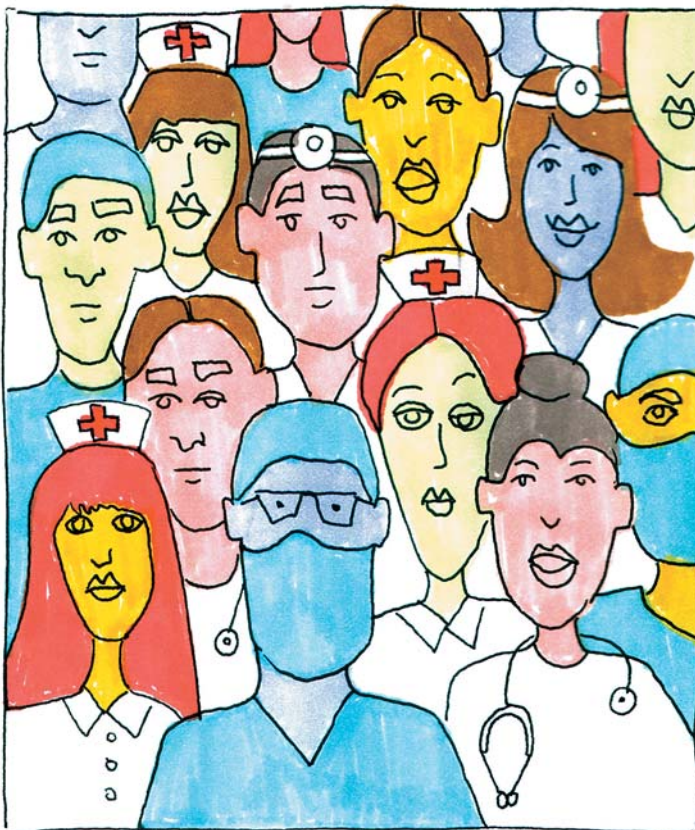
Since implementing ERAS for colorectal surgeries, Vancouver General Hospital has reduced length of stay by two days and reduced most complications by 15.5 per cent. "In a 28-month period, that's about 57 cases that didn't end up with pneumonia, a urinary tract infection or surgical site infection. Those are big opportunities and changes," says Bisaillon.

Alberta Health Services (AHS) is reporting similar success from its ERAS strategy. From August 2013 to May 2014, six sites implemented ERAS for colorectal surgery. Not only did patients report that they felt better sooner, but the average length of stay in hospital was also decreased by more than three days and the province calculated that for every dollar invested in ERAS implementation, approximately three dollars were saved.

"ERAS is an opportunity to transform surgical care," says Tracy Wasylak, Senior Program Officer, Strategic Clinical Networks, at AHS. "Our vision is to be able to offer ERAS protocols and principles to anybody who's having surgery."

AHS is currently implementing ERAS for colorectal surgery at three additional sites, bringing the total to nine. It has also received a Partnership for Research and Innovation in Health Systems (PRIHS)

research grant from Alberta Innovates to investigate the benefit of implementing more than one set of protocols simultaneously. Right now, the province is working to introduce ERAS pathways for gynecology/oncology, major head and neck, breast reconstruction and pancreatic cystectomy surgeries at the province's two major tertiary academic teaching centres.

Alberta is the first Canadian province to use the ERAS Interactive Audit System (EIAS), a web-based interactive software tool to facilitate implementation and monitor compliance with evidence-based protocols. EIAS was developed by Encare AB of Stockholm, Sweden, a company established in 2009 to facilitate implementation of ERAS protocols on a global basis.

"We want clinicians to get meaningful real-time data to drive their practice because that's what we believe helps with compliance," says Wasylak, noting that AHS compares EIAS data to its discharge abstract database to get a clearer picture of outcomes. When clinicians open the EIAS dashboard, they see information recorded for each component of an ERAS protocol, such as when patients were admitted, what surgery they had, what was done pre-operatively, how much fluid they were given in the operating room, how many opioids they received or when they walked.

"The golden rule is we should be doing the same thing 80 percent of the time and allowing for variation where it makes sense," she says.

Alberta is also working to develop a patient smartphone app to replace the log book currently used to record patient post-op steps and experiences, and is taking a lead position to develop new ERAS protocols, including the guidelines for Gynecologic/Oncology Surgery which were led by Dr. Gregg Nelson, Chair of the Provincial Gynecologic Oncology Tumour Team. This past January, Dr. Nelson was appointed Secretary of the international ERAS Society's Executive Committee.

"Canada is a leader in moving this model forward," says Joshua Liu, CEO of Toronto-based SeamlessMD, a company designing software that enables hospitals to launch, optimize and expand integrated care pathways for surgery, including ERAS. "We're one of the partners of healthcare organizations who are writing this new narrative around, 'How do you take what we've done manually for 20 years and make it digital and more efficient,'" says Liu.

The Seamless MD cloud-based solution is a good fit for ERAS, he adds, because it can be used as a platform to improve patient adherence to protocols and automate data collection. Hospitals can choose from the company's existing ERAS templates or design their own pathways.

"We guide the patient on their smartphone, tablet or desktop computer through the entire pathway so they get reminders about what they do and when, they can track their progress, record their symptoms and issues, and get feedback along the way," explains Liu. The software engages patients from pre-operative preparation through their hospital stay to their at-home recovery, allowing them to check off milestones as they complete them.

In 2015, SeamlessMD partnered with McGill University Health Centre to study SeamlessMD's effectiveness as a patient app to improve adherence and data collection for patient-focused ERAS protocols. The app was given to 45 patients undergoing colorectal surgery and 89 per cent said it helped them to achieve their daily recovery goals.

An added advantage is the SeamlessMD will alert clinicians if a patient falls off track. "Let's say the patient is now going home a day earlier than they used to. As long as they're checking in with our solution and recording their progress, the team knows whether things are going well or not," says Liu. "I think what you're going to see within the next five years is people won't be calling it ERAS anymore because it's going to become standard care paths. It's just going to be what you do."

In January 2017, the AHS's Surgery Strategic Clinical Network hosted a symposium to facilitate local, national and international ERAS best practices. Information sharing was key as participants also examined ways to further enhance ERAS adoption across Canada, including the development of a pan-Canadian network.
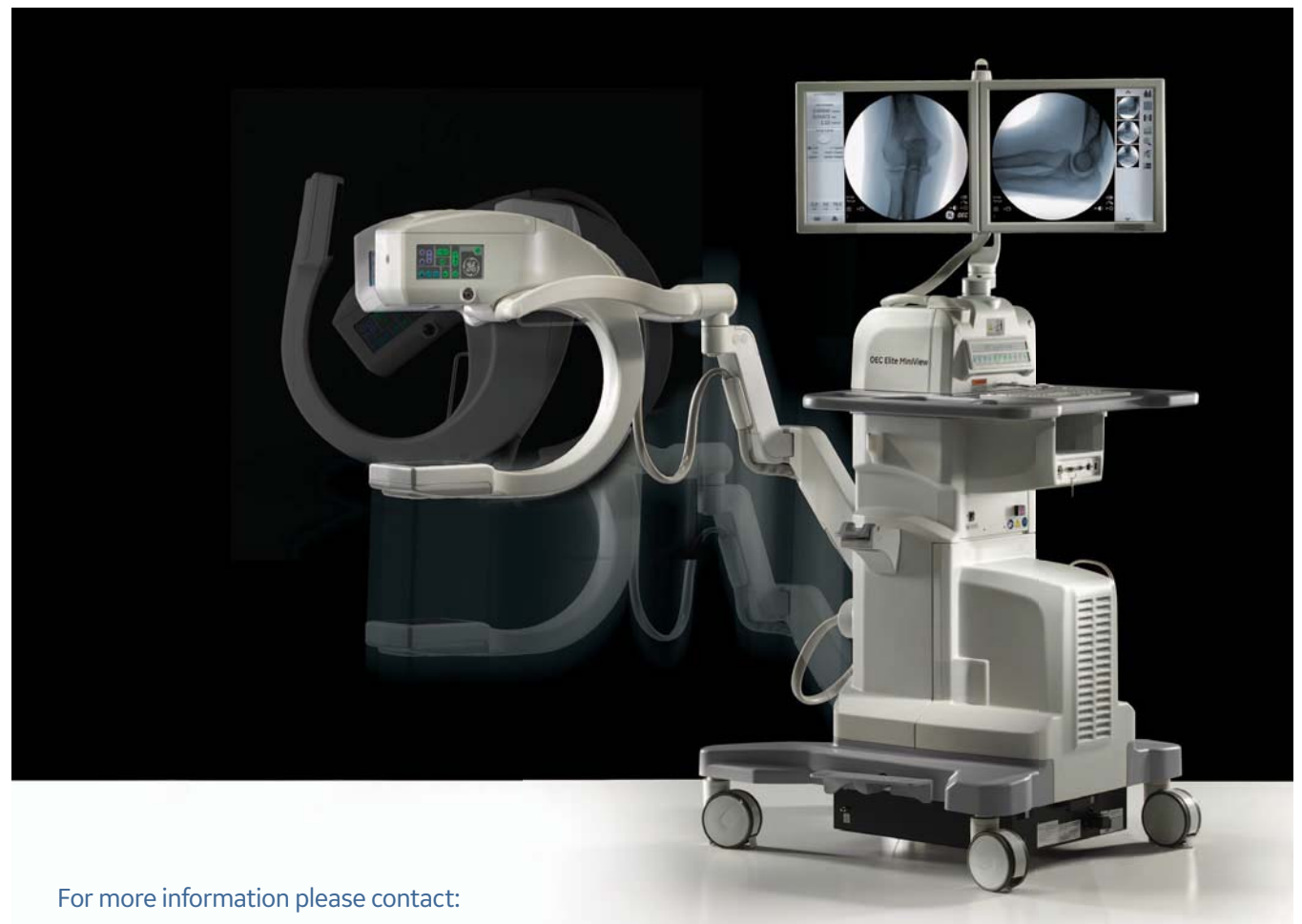
"Every centre is agreeable we should all share," says Dr. Laflamme. "Right now we are talking about enhancing recovery, but we want this to be the standard of care."

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Ontario hospitals are sharing data to improve surgical outcomes

TORONTO – From cleaning the lint out of your belly button prior to surgery to the potential for province-wide collaborative efforts to improve surgical quality, the second annual meeting of the Ontario Surgical Quality Improvement Network (ONSQIN) spanned a wide range of topics. The meeting was held last November in Toronto.

"This program never ceases to amaze me," said Lee Fairclough, vice-president of quality improvement at Health Quality Ontario, in her introductory remarks to the meeting which had more than 300 registrants from 70 hospitals.

Thirty-three Ontario hospitals are participating in the ONSQIN program, which allows them to benchmark their surgical outcomes against the American College of Surgeons – National Surgical Quality Improvement database (NSQIP) on a variety of risk-adjusted outcomes.

With the support of Health Quality Ontario, hospitals in the network are working to develop surgical quality improvement plans, implement best practices and contribute to a community of practice for collaborating and sharing ideas to support improvement.

During the conference, those in attendance heard both of overall plans and programs involving ONSQIN as well as case studies and success stories from individual centres striving to improve areas such as surgical site infections (SSIs) and post-operative urinary tract infections.

In his introductory remarks, Dr. Tim Jackson, surgical lead at Health Quality Ontario and a general surgeon at the University Health Network in Toronto, noted that in just two years of existence the network is already moving from simply measuring surgical quality parameters to having an impact on outcomes such as SSIs.

Those in attendance were told of the importance of comparing surgical safety parameters in a single-payer jurisdiction such as Ontario against hospitals in other countries in order to both instill confidence in patients about the high quality of care being provided, and to showcase improvements underway in the province.

Keynote speaker Judith John stressed the importance of taking into account the patient perspective when considering surgical outcomes. John, who has had multiple surgical interventions due to a brain tumour and describes herself as "an accidental advocate", told those in the room to remember the commonality "between the precision of one who cuts and the warmth of someone who asks."

"The real metric that matters is (to) treat me like a person," she said, noting that while doctors tend to be "explainaholics" they needed to take the time to actually listen to patients and try and understand their concerns.

In his presentation, Dr. Jackson noted that many surgical programs have taken the initiative to develop NSQIP data into opportunities for improvement. To date, he said, 27 hospitals in the province have submitted such plans.

Jackson said he felt the network was now mature enough that it could move from an onboarding to a collaborative mode to set targets as a group and implement change at the provincial level.

"You're off to impressive start here," said Dr. Karl Bilimoria, medical director of surgical quality at Northwestern University, Chicago. He presented an overview of the acclaimed Illinois Surgical Quality Improvement Collaborative, which involves 55 hospitals in the state.

Several specific case studies of initiatives by ONSQIN members to improve the quality of surgical care in their institutions were presented. The reference to belly buttons came from Dr. Duncan Rozario, a general surgeon at Oakville Trafalgar Memorial Hospital who detailed the bundle of changes instituted at that hospital to improve SSI rates.

(A version of this story appeared originally on the Health Quality Ontario website http://www.hqontario.ca/portals/0/documents/events/onsqinstory-en.pdf)

Air Traffic Control
for Healthcare Referrals

As you read this, thousands of aircraft are flying over Canadian airspace. At the same time, tens of thousands of health-care referrals are in progress. The difference of course, is that each aircraft is being tracked and managed by air traffic control while referrals in Canada are largely paper based and not centrally managed.

In other similar western industrialized countries, like the Netherlands, the UK, New Zealand and beyond, referrals are electronic which allows for real-time tracking and coordinated referral management.

Canadian based Novari Health traveled the world and studied the successes and technologies around eReferral. We combined this knowledge with cutting edge Microsoft cloud technology and have recently been chosen among our competitors as the leading eReferral technology and team to deliver air traffic control like functionality for referrals serving millions of Canadians.

Let our eReferral technology and experience transform your referral processes.

John Sinclair | President | Novari Health

Correct identification

comply with these practices will affect the accreditation decision of the organization.

The Client Identification ROP–updated in 2016 – has only one test for compliance. It states that at least two PSIs are used to confirm that clients receive the service or procedure intended for them, in partnership with patients and families.

How should patients be identified to ensure they receive the care and treatment planned for them? There are several components to the process of identifying patients. An organization-wide person-specific identification system needs to be introduced based on the type of patients being treated.

In both Inpatient and Outpatient settings, the patient's full name (their first and last names), date of birth, or unique medical record number are frequently selected as the PSIs. For Inpatients and selected Ambulatory outpatients, identification bands with printed PSIs are used to help staff identify patients. When selecting the PSIs to use in long-term care or similar settings, such as the home of the client, input from patients and/or family members needs to be sought in choosing the person specific identifiers to be used.

When does this person-specific identification process need to be used by staff? All staff, including physicians, residents, interns, students, and all others who provide care or service to patients as defined by the organization, must use this person-specific identification process.

This process must first be employed at the time of registration when the patient enters the hospital system. Since this person-specific information follows the patient throughout his journey across the healthcare system, it is essential that the information is entered correctly at registration.

If the patient has been registered in the hospital before, the patient's previous demographic information must be verified with the patient/family thoroughly to ensure it is still accurate.

If it has changed, then it must be updated. This information will be transferred onto the patient's identification band, test requisitions, medication administration records, etc., which will then be used to identify patient during his hospital stay.

When staff are ready to perform a service or procedure, they will have a document such as a test requisition or a medication administration record, etc., containing patient-specific information.

The staff will verify that this is the patient for whom the procedure is intended by checking two patient specific identifiers. The staff may ask the patient for the two identifiers, such as what is your full name, and what is your date of birth?

These are compared to the information on the test requisition for verification. It is not recommended that staff ask the patient if "their name is Mary Black" or if "their date of birth is Dec. 1, 1970?"

A number of factors may prevent the patient from accurately confirming this information: anxiety, being under the influence of medications, or hard of hearing to name a few. In this increasingly multicultural society, there are many names that are used very frequently in some cultures, which increase the chances that the patient answers to the wrong name.

Language differences between, and among, staff and patients adds to the risk of misunderstanding or misstating patient names.

Furthermore, there will be times when patients cannot give their full name and date of birth. In these cases, the staff must use other methods to accurately identify patients. Identification bands with a patient's full name, date of birth, and unique hospital identifying number, or a government issued identification play an important role in accurate identification of these patients.

Which staff must use this patient identification process? It may happen that staff gets to know patients very well because the patients have an extended length of stay or they have frequent visits to the hospital.

Staff may have difficulty understanding why this two-factor, person-specific identification process is necessary when they know the patients so well. Similarly, these patients may feel that they are being treated impersonally as a result of this process.

They may not understand why they are being asked to identify themselves repeatedly by staff who know them well. Therefore, it is essential that staff be educated as to the reason for the necessity of using this process; it is to consistently identify patients using the same process to ensure patient safety.

Margaret Bachle was Vice President of Patient Care Services and Chief of Professional Practice at Credit Valley Hospital in Mississauga, Ontario for 23 years. As part of this role she was responsible for many of the Allied Health professionals. Currently, Margaret is engaged in consulting projects, nationally and internationally.

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