



CANADIAN Healthcare Technology

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Enovacom expands in Canada

Now that it has gained a foothold in Quebec, where it will supply its integration engine to healthcare organizations, France-based Enovacom plans to offer its solutions across the country. Ontario may be the next stop.

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Video visits for addictions

A new company called Hasu has pushed the telehealth envelope by providing a platform for addiction



counselling. Persons suffering from drug, gambling or sexual addictions can see a counsellor online, at their convenience.

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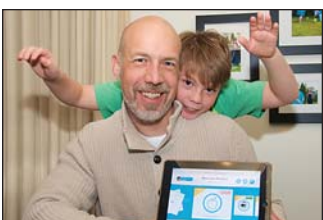
Improving privacy practices

Despite training and educational programs in patient privacy, employees of healthcare organizations continue to flout the rules. IT expert Jesse Hirsh says there is a better way to get the message across.

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Hyperactive app

Brili has created an app that helps keep kids with ADHD on task and accomplishing their goals. The app, which is gaining users worldwide, is also a boon



to parents, many of whom have struggled with time and task management.

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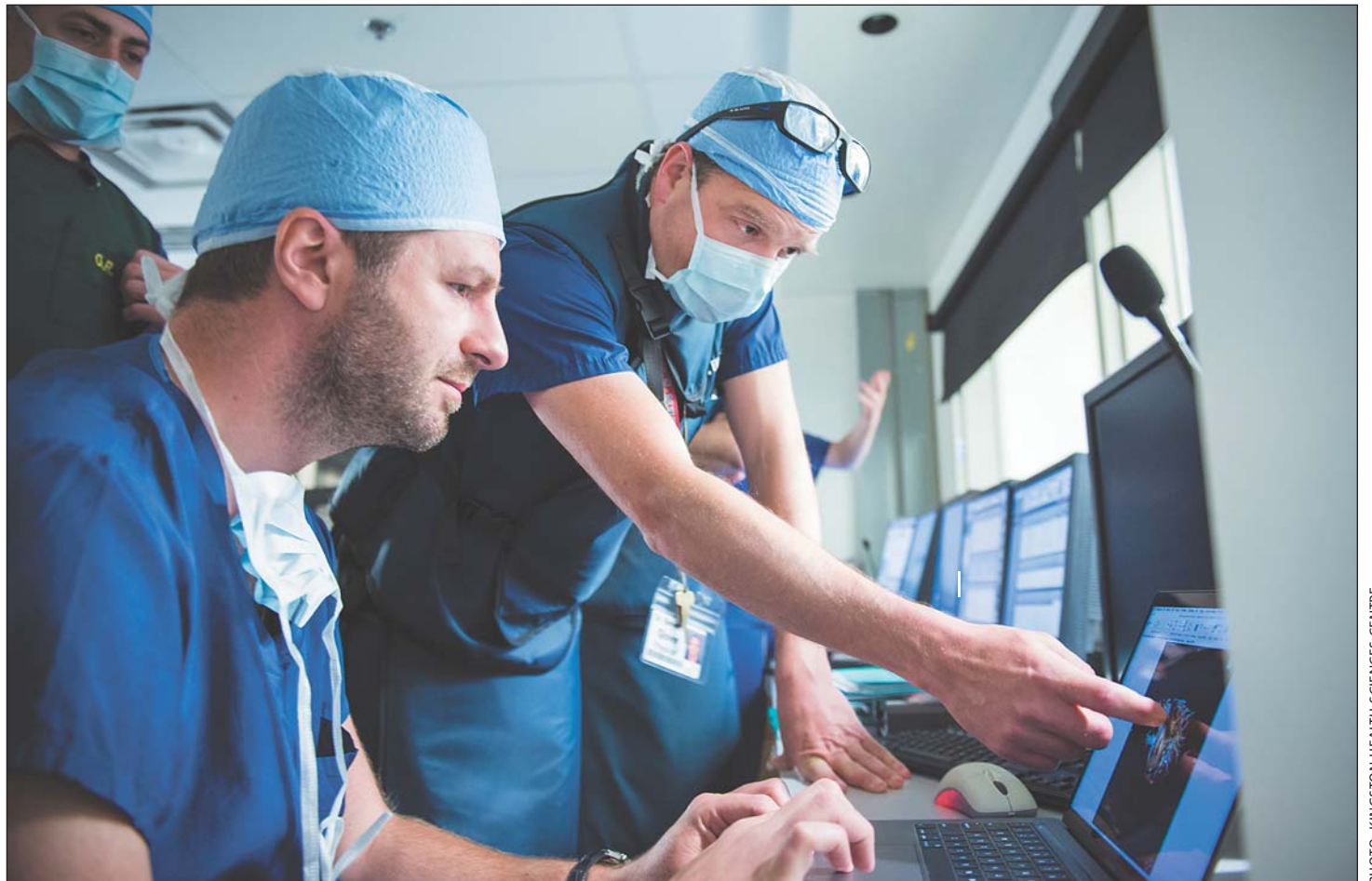


PHOTO: KINGSTON HEALTH SCIENCES CENTRE

A better way to conduct cardiac ablations

Physicians at Kingston Health Sciences Centre are the first in Canada to use a hybrid technique to treat patients with atrial fibrillation, the most common type of irregular heart rhythm. The new procedure combines digital imaging with minimally invasive catheter techniques to perform ablations, helping patients heal faster. Pictured are cardiac surgeon Dr. Gianluigi Bisleri (L) and cardiologist Dr. Ben Glover. **SEE STORY ON PAGE 6.**

Quebec aims to link healthcare providers across province

BY JERRY ZEIDENBERG

MONTREAL – Quebec has launched a project to connect the disparate computer systems used by healthcare providers across the province. The goal is to improve information sharing among hospitals, long-term care centres and community care organizations, including physician practices.

As part of the project, Quebec awarded a contract to Purkinje, of Montreal, to supply its integration engine over the course of the seven-year effort. Purkinje, who partnered with Enovacom to provide the integration platform to clients in North America, is said to be a powerful engine that quickly converts information from one system into data and formats used by others.

Interoperability, and getting disparate computer systems to talk to each other, is a challenge faced by many regional health authorities across Canada.

In this way, doctors and nurses at a hospital in Sherbrooke, for example, will be

Purkinje and Enovacom won the contract for the solution that will tie Quebec's providers together.

able to see the medication lists of patients from local nursing homes, or the lab test results for patients who have been referred by from community clinics. All of these providers may use different computerized solutions that typically have trouble exchanging data.

The integration project is designed to make healthcare decisions faster and more accurate, thereby improving the quality of care and reducing sky-rocketing costs.

"Healthcare providers are often re-keying data into their own systems," commented Alain Larochelle, vice president at Purkinje. "This is not only time-consuming and inefficient, but it often takes time away from patient care," he observed.

It can also lead to errors, when data is incorrectly keyed.

Moreover, clinicians who can't see recent test results often order new tests, resulting in duplication and adding to the cost of care. This practice also results in treatment delays.

The automated sharing of information is

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Quebec project aims to link healthcare providers across the province

CONTINUED FROM PAGE 1

expected to reduce such delays, and to improve efficiency and quality.

"It has been difficult to share information in the past," said Larochelle. "Building integration between systems required a lot of programmatic expertise at the healthcare organizations, expertise they didn't always have."

Quebec has more than 100 hospitals in 33 regional health authorities, several hundred long-term care centres and thousands of doctors in clinics. It was a tall order to expect them to have expertise in constructing interfaces for integrating healthcare data.

Larochelle said the difference now, with the Purkinje/Enovacom integration engine, is that the solution is easy to use and doesn't require a lot of technical knowledge on the part of the users.

"It has a visual interface that's much easier to use," said François Carignan, Purkinje's president. "You don't need skills in Java or .Net to build interfaces between systems."

Purkinje has already started training

staff at the Centre de développement et d'opérationnalisation (CDO), the agency that will assist in rolling out the provincial acute care electronic medical record, called Cristal-Net.

The strategy is to deploy Cristal-Net at all healthcare centres that haven't implemented an EHR, or where an existing EHR hasn't been working well.

The CDO team will also lead the deployment of the integration engine, with the assistance of Purkinje. The first step, Larochelle noted, is for Purkinje to transfer knowledge about the integration platform to the CDO, so its staff members are well versed in the technology and become autonomous for the roll-out.

In addition to linking patient records, lab results and PACS, the integration platform will connect to financial system data and billing systems, procurement, EMPI and schedulers, the Ministry of Health, and to an upcoming data warehouse.

Purkinje is itself a long-time supplier of electronic health record solutions to hospitals and primary care providers in Quebec. François Carignan noted the company currently has a number of hospital cus-

tomers in the province, and in some areas of Quebec, such as Bas Saint-Laurent, Purkinje is the leading supplier of electronic systems to primary care clinics.

The Enovacom engine is either integrated or in the process of being integrated into Purkinje's products, including a fully web-based, closed-loop medication man-

The Purkinje/Enovacom solution is said to be easy to use, and doesn't require a lot of technical knowledge.

agement solution, its ambulatory EMR and online appointment bookings.

Larochelle said the integration platform offers commonly used solutions like HL7 v2 and v3, but also more forward-looking technologies like FHIR and XML. However, users don't have to be experts to deploy them.

In areas like Bas Saint-Laurent and Gaspésie in Quebec, or some areas in Ontario, where Purkinje systems are widely used, clinicians will soon be able

to target groups of patients for specific types of healthcare – such as COPD or diabetes. The platform will link all providers and enable the use of standardized healthcare protocols to the benefit of the patients.

The Purkinje system is also optimized to track the social determinants of health, such as a patient's working and living conditions, as well as the traditional vital signs and symptoms.

Its integration platform opens up the system to usage by a wider variety of care-givers. "It's not only doctors and nurses who can use the solution, but social workers, dietitians, respiratory therapists, and others," said Larochelle. "They're working in collaborative teams, not unlike what Ontario's Health Links program aims to achieve: a standardized way to efficiently connect various providers."

He said Quebec aims to have collaborative teams of this sort working together at hospitals, long-term care facilities and community care centres across the province. But it's necessary to provide a powerful and intuitive integration platform – such as the one Purkinje is delivering – to tie these caregivers together and allow them to share their information.



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Joule announces recipients of innovation grants

OTTAWA – Joule, the Canadian Medical Association's newest company, has announced the five recipients of its 2017 Innovation grants.

- Dr. Wey Leong, a surgical oncologist at Princess Margaret Cancer Centre in Toronto will receive a \$25,000-grant to develop ReFilx, a biodegradable scaffold to aid in the regeneration of soft tissue.

- Dr. Eitan Prisman, a surgical oncologist and clinical assistant professor at the University of British Columbia, will receive \$25,000 to develop a Virtual Preoperative Reconstruction (ViPRE) Platform.

- Dr. Denis Vincent, an Edmonton physician who devised a new tool called ezReferral, will use a \$50,000 grant to ensure consistency and simplicity when referring a patient to a specialist.

- Dr. John Pacey, a vascular surgeon from Vancouver, will receive \$25,000 to further develop the Pacey Cuff, a urethral control device for post prostatectomy.

- Dr. Dennis DiValentino, Assistant Clinical Professor at McMaster University, will receive \$25,000 to help provide care to marginalized individuals via mobile tele-medical units.

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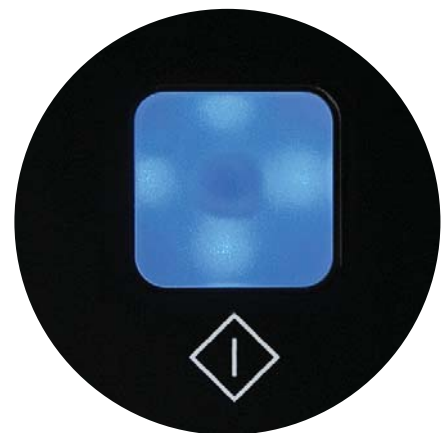
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Hasu makes it easier for patients with addictions to access counsellors

BY JERRY ZEIDENBERG

TORONTO – A number of private-sector companies have emerged that enable patients to connect online with medical doctors via video or text. They're responding to patient-driven demand for these kinds of services – if you're sick, but it's hard to get to the doctor's office, why not interact with him or her via computer?

Now, a Toronto-based company called Hasu Behavioural Health has expanded the clinical scope of online visits. It's specializing in mental health and addictions counselling – including drugs, alcohol, problem gambling and sex addiction.

By signing on to the secure Hasu eCounselling website, clients suffering with addictions and related challenges can interact online with certified addiction therapists, social workers and psychologists through video, talk or text counselling.

The majority of sessions have been with patients and family members who are struggling with substance abuse and drug addictions, including dependence on opiates like fentanyl and heroin.

Hasu – Japanese for lotus flower, which produces beautiful blooms above the murky water – was launched in 2015 by Greg Rennie, an addiction therapist and his wife and co-founder Stefani Farkas.

"I had been working for large health-care facilities, in the area of addictions, and realized there were serious gaps," said Rennie. "People were waiting months for addiction treatment. I felt badly for clients and their families."

Rennie was aware of online mental health services in the United States and



Using a tablet, phone or computer, patients can reach an addictions counsellor from their home or office.

thought something similar could be developed in Canada.

During the research and development stage, he met a company that had devised a secure, consumer-ready platform for telehealth. "It was a great match for us, because we knew the clinical side, and they were experts in the technology," said Rennie.

Soon after, Rennie and the team were able to start recruiting a network of therapists across Canada. They now have 30 clinicians on-board across the country, and as of July, they had conducted 200 online therapy sessions.

"It's appealing to therapists and we're getting applications from across the country," said Rennie.

He noted that by going online, therapists can work evenings and weekends, or fill out empty slots in their schedules during the daytime.

The therapists are carefully vetted, however, before being brought on-board.

The cost of the service for clients is \$75 per hour. "That's about half the cost of a face-to-face session with a therapist," asserted Rennie. He noted that in urban centres, some therapists charge as much as \$200 per hour.

For many patients, insurance plans cover the costs. Others are quite happy to pay the fee, as the online sessions help them cope with day-to-day living and are an important part of the recovery from addictions and other problems.

Online counselling can often be the ideal solution, especially when it allows patients to see a therapist faster than waiting for an in-person visit. And it offers the client the ability to talk with a professional at times that are convenient, from home or office.

"For some people, especially in rural ar-

eas, it's very difficult to get to a clinician's office," said Farkas. "In those locations, you don't always want to be seen going into a therapist's office."

Online systems give clients much more privacy, she noted. They're also ideal for patients who have trouble leaving their homes, due to a physical ailment, frailty or a phobia.

Interestingly, most of the clients to date have preferred interacting with therapists via text, rather than video. "People seem to be more comfortable with text therapy," said Rennie.

There is a practical advantage to texting, too: "They can keep the texts and look at them later," he noted. "With face-to-face therapy, you may remember part of the session, but a lot is forgotten."

For therapists, there are special techniques used with texting during a clinical session. "Unlike voice, there is no inflexion or tone," commented Rennie. "So you have to use words carefully, and ask clients to clarify what they have written."

Of late, Hasu has been reaching out to addiction treatment centres to provide online programs. The brick-and-mortar centres often don't have online resources to support patients at discharge, and Hasu is offering to help out.

In some instances, clients who complete a program at an addictions facility return to their communities in another province, but can't easily go back to the centre for follow-up sessions or continuing therapy. That's where online sessions can be a great help. "We can provide an online continuing care program for these clients," said Rennie.

For more information, visit hasucounselling.ca

France-based Enovacom specializes in healthcare interoperability

Just two years after setting up shop in Canada, France-based Enovacom is expanding here with a big bang. In alliance with its Canadian partner Purkinje, with headquarters in Montreal, the Enovacom Integration Engine has been chosen to connect the computer systems used in all of Quebec's healthcare facilities.

"We have worked with Purkinje for two years now, and we are proud to have won this first tender with their team," said Christophe Thibault, International Sales Director for Enovacom, which is located in Marseille, France. "Our solution being chosen as the provincial integration platform and will support the Ministry of Health and Social Services of Quebec in their vision to unify and optimize their healthcare Information systems."

Work has already begun, with personnel from Purkinje and Enovacom training IT experts at the Centre Hospitalier de l'Université de Montréal (CHUM) on using the integration engine. The experts at CHUM will then help organizations across the province as they construct the interfaces they need.

According to Thibault, Enovacom's

ease of use was a major factor in Quebec's decision to use the solution. "No programming is required ... it takes just five days to train people, and then they can build useful interfaces," he said.

The system is visually oriented, with interactive dashboards, and many of its functions allow users to simply 'drag and drop' objects to create interfaces.

For its part, Enovacom provides healthcare organizations and care providers with interoperable data integration and security solutions. It has 1,500 customers in Europe, mostly in France.

The company started in 2002, and Thibault notes that in the beginning, the company focused on connecting data flows between hospitals and blood banks. Since then, it has developed expertise in all kinds of interoperability solutions – such as connecting computer systems within hospitals, linking hospitals to each other, and connecting to labs and community care organizations.

"We're vendor neutral, and our solution can connect with all systems," said Thibault, citing Cerner, Agfa HealthCare and others that have all been linked using the Enovacom platform in France.

Notably, the company has a lot of experience with Cristal-Net, an electronic health record system that was co-developed by CHU de Quebec-Université Laval and the University of Grenoble in France. (Quebec later bought out its French partner, and now owns the intellectual property rights to Cristal-Net.)



Christophe Thibault

Currently, 51 hospitals in France using Cristal-Net have also deployed Enovacom to integrate with a variety of other solutions. In Quebec, the government has announced that it will implement Cristal-Net in all hospitals that either do not yet have an electronic health record system, or where the current EMR doesn't work well.

"We have a good understanding of how to integrate with Cristal-Net, but we also have a lot of experience with other systems," said Thibault. "We have worked with the world's leading EPR vendors, and Enovacom connects sys-

tems of any scale and complexity."

Plans are now afoot to expand the Enovacom platform across Canada, starting with Ontario. Thibault said there have been some favourable discussions with potential users in Ontario.

In addition to its traditional offerings for interoperability, integration and security, the company is now marketing something new – the Enovacom Patient Connect. The software-based solution links medical devices and monitors with the electronic health record.

By automatically collecting the vital signs, said Thibault, physicians get the right data at the right time and at the right place to promote faster, more informed clinical decision-making.

"It's a biomedical interoperability platform, and you can connect any kind of device. Patient monitors for vital signs, ECGs, ventilators, fetal monitors, dialysis machines, and more."

Importantly, the integration can be done quickly and easily, he said. The company already has sites using the solution in France, including the Nouvelles Cliniques Nantaises, and the Centre Hospitalier de Bagnols sur Cèze.



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App keeps kids with ADHD on time and helps them accomplish tasks

TORONTO – Mornings and bed-times were making Pierre Séguin crazy. His five-year-old son couldn't seem to get ready for his day –or night– without a tantrum or a meltdown. “He was all over the place,” Séguin recalls, “and when we tried to keep him on task he'd go nuclear.”

A seemingly endless string of parenting books and visits with teachers, psychologists and psychiatrists eventually led to an ADHD diagnosis for his son at age seven. Along the way, the family learned techniques to reduce the friction in their daily routines, including consistent activity sequencing, constant prompting, visual schedules, timers and reward systems.

These practices were helpful, but difficult to implement for parents and not particularly fun for kids. At the time, the state of the art consisted of sticky notes, whiteboards and egg timers.

And more often than not, parents –not kids– were the weak link in following the doctors' advice.

As a career technologist and innovator, Séguin saw the potential of connected mobile and wearable devices to help the millions of families affected by ADHD and other conditions that impair the brain's executive functions.

Starting in 2014, Séguin invested a portion of his life savings in assembling a team to develop the perfect assistive technology for families struggling with difficult daily routines. Brili was launched in 2015 for use on web browsers, iOS, Android and Pebble wearable devices.

Brili is a platform that gamifies daily routines for kids to earn free time and point-based rewards for staying on task. Intelligent countdown timers can adjust according to how individual children progress.

Furthermore, the software is perfectly



Pierre Séguin's Brili app gamifies day-to-day tasks for kids with ADHD, and rewards them for staying on task.

consistent and patient in prompting kids visually and audibly. It also lets parents customize routines and monitor real-time progress remotely.

Now in use by thousands of families in over 40 countries worldwide, Brili's effect has been transformative. Parents and clinicians alike have shared heartwarming stories of kids who had never been able to leave for school on time immediately managing to be ready twenty minutes early, and how mornings that had been “a stressful hour of yelling” had become “a well-run machine.”

Dr. Stephen Scott, Director of the U.K.'s National Academy for Parenting Research in London explains it this way: “Children thrive with routines. Brili

makes it easy for parents to provide the structure and consistency their kids need, while staying closely involved in monitoring their activities.”

Toronto's healthcare, academic and tech communities have also taken notice of Brili's impact and are actively lending a hand.

Among them, IBM Canada, through the IBM Innovation Space in downtown Toronto, has provided access to leading technology like IBM Cloud to provide security for the platform's infrastructure and data.

The University of Toronto has also partnered with Brili through its Semaphore Research Cluster to study the effects of routine practices and assistive technology

with families. U of T's Faculty of Medicine's H2i Health Innovation Hub also provides ongoing support.

According to Séguin, Brili has become a powerful tool for researchers because it is able to securely capture previously impossible to quantify facts about child and parenting behaviours, on a relatively large scale and in an organic and natural setting.

Anonymized data representing kids' actual task and reward times day after day can be compared to parental expectations to uncover helpful insights for behavioural researchers. There are plans underway to conduct research with a California-based university and clinic to quantify Brili's efficacy in supporting children with learning disabilities.

Another promising application for Brili's smart activity sequencing is in classrooms. Last year, Brili added several Kindergarten to Grade 12 schools from across Ontario to its partnership with U of T and IBM. It also received funding from the Ontario Centres of Excellence to optimize Brili for educational use and to study its effects on learning.

Like many Canadian startups, there are hurdles the company must overcome, including finding resources to continue product development, determining the right business model that can bring global success, and maintaining a competitive advantage in a risky market.

So what has kept Brili going?

“Making a real difference,” Séguin asserts, without skipping a beat. “Not to mention a great team and support from many wonderful people in Toronto's tech, academic and medical communities. I owe big thanks to these folks and to our customers for believing in Brili and our mission to help families.”

Kingston's hybrid cardiac ablation procedure a first in Canada

KINGSTON, ONT. – In a Canadian first, a hybrid cardiac ablation procedure has been successfully completed at Kingston Health Sciences Centre (KHSC). The procedure is a revolutionary treatment for patients who suffer from atrial fibrillation – the most common type of irregular heart rhythm.

The new procedure will help patients heal faster, stop or reduce their use of medication, as well as reduce the number of future hospital visits that they require.

“This new procedure represents a combination of the most advanced surgical techniques along with less invasive catheter techniques,” says Dr. Gianluigi Bisleri, a cardiac surgeon at KHSC and associate professor of surgery at Queen's University. “Instead of the traditional approach to fix chronic irregular heart rhythms, we now offer an extremely innovative and effective hybrid approach.”

Atrial fibrillation affects approxi-

mately one in four Canadians. Historically patients have relied on medication along with traditional cardiac ablation procedures to help restore normal heart rhythms.

During a traditional ablation procedure, physicians create scars inside the heart which prevent abnormal electrical signals from moving through the heart tissue. This traditional approach is typically performed either by inserting long, flexible tubes with wires – called catheters – into the heart through the patient's groin or by using more invasive surgical approaches that often require opening the chest and stopping the heart.

With the new procedure, a cardiologist uses digital technology to map the inside of the heart while the surgeon performs ablation on the outside of the heart using another specialized device. This requires only three keyhole incisions to navigate to the heart, removing the need to open a patient's chest.

“We are treating patients in a way we

haven't before,” says Dr. Ben Glover, a cardiologist at KHSC and assistant professor of cardiology at Queen's University. “By combining technology with the knowledge and expertise of our medical teams, we are able to treat complex cases with a high success rate in a minimally invasive manner.”

The cardiac mapping system technology used during this procedure is the

A cardiologist uses digital technology to map the inside of the heart while a surgeon performs the ablation.

first of its kind to be used in North America and is a result of a strategic capital investment made by KHSC earlier this year. Known as the Ensite Precision cardiac mapping system, this technology provides highly detailed models and maps of the heart that allow physicians to diagnose a wide range of irregular heart rhythms.

In addition to treating patients in a new way, this procedure also offers new insights into atrial fibrillation that will help expand further medical research in the field.

“Through this novel procedure, we have been able to see the mechanisms of atrial fibrillation and the effects of this hybrid approach in an unprecedented way. This will allow us greater insights and understanding into this common heart condition,” says Dr. Bisleri. “We are extremely excited that KHSC is a pioneer in delivering this treatment which is due to the unique collaboration among the teams of cardiologists and cardiac surgeons.”

Atrial fibrillation is the most common type of irregular heart rhythm with more than 350,000 people in Canada estimated to have the condition. With this new approach, patients can expect a shorter hospital stay, lower risk of hospital re-admission and less dependency on medication, freeing up inpatient beds in hospitals and improving the patient's outcome.



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Patient privacy and security by design help to maintain patient trust

BY SEANA-LEE HAMILTON

Trust, though simple at its core, is vital for the healthcare industry, as our patients trust us to heal their bodies from wounds, illness, and ailments. Today, patient trust includes believing

in their healthcare provider's ability, and resolve, to keep personal data secure and private. Protecting patient privacy must be a healthcare organization's top concern, not only because of the quality care measures to which we're all accountable, but because it's the right thing to do.

Fraser Health, with 13 acute care hospitals and various other service facilities throughout British Columbia, covers approximately 1.7 million people who all expect their personal information to be kept private and secure. This responsibility is the backbone of our data privacy and se-

curity best practices, where data security and privacy are together by design through technology and education.

These elements form a tight barrier protecting patient data from external threats and internal misuse, as we realize the hardest part of trust is once it's lost, it can be nearly impossible to gain back.

Privacy and security by design: With today's healthcare industry so delicately balanced on a fulcrum of trust, a robust patient-privacy program that keeps data truly secure doesn't happen overnight or by happenstance. Safeguards are both technical and physical.

As patient-privacy technology grows, data security must also be considered, as neither privacy nor security can truly work without the other. This is why Fraser Health practices privacy and security by design, where both are the foundation of every technology decision.

Privacy and security by design must start at the beginning, which is why we perform privacy and security assessments and reviews on every technology activity, from patches, new projects and initiatives to implementations, amendments and system upgrades.

Our privacy and security team is involved in all technology conversations, including briefing notes and budget meetings, so privacy and security aren't technology obstacles, but rather help ensure core security requirements are continuously met.

To truly be incorporated from the ground up, we consider security and privacy when creating policies. The province of British Columbia has multiple laws, including recent actions tightening the rules around protecting patient privacy, requiring public healthcare bodies to ensure reasonable security is in place to protect personal information from unauthorized collection, use and disclosure or disposal.

Fulfilling these requirements must be considered when creating policies, but policies shouldn't be perceived as a "security," "technology" or even a legislative item. They must be developed specifically to convey the organization's belief that patient data security is as important and essential as patient care.

The most effective policies are concise and easy to read. Engaging in a top-down approach that builds partnerships within the organization goes a long way to successful policy implementation and enforcement.

The need for technology: Policies alone, even well-crafted and properly enforced ones, can't protect patient privacy, especially with the insider threat to patient data on the rise. At Fraser Health, a key aspect of our privacy and security program is proactively auditing patient data access so we see when and who accesses patient medical records.

We have technology in place today, called Security Audit Manager from Iatric Systems, which allows us to monitor clinical information systems (CIS) to see every time patient data is accessed across the enterprise. As part of our approach, this software is used with all new systems that come onboard.

Having an organization-wide view of who is accessing patient data enables us to enforce our policies of "need-to-know" data. We want to provide clinicians and

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Considerations for Canadian healthcare information governance

BY ANDREA BACQUÉ

The first Canadian Healthcare Information Governance Summit, sponsored by CHIMA and Iron Mountain in 2016, brought together a pan-Canadian group of thought leaders to tap into their experience, insight and recommendations for Information Governance (IG).

The summit pointed out the need for robust IG practices in Canada's healthcare organizations. The time for IG rigor is now, particularly in light of the revised Federal Digital Privacy Act approved in June 2015 – driving a need for data breach reporting, record keeping and disclosure of theft of personal information.

Aside from the need to be compliant, healthcare organizations lacking a robust IG program also struggle to meet basic operational needs; the needs of patients and providers; and the needs of the population at large.

Simply controlling the massive amount of structured and unstructured data across their siloed organizations proves exceedingly difficult, making the proper management of information throughout its lifecycle a costly challenge.

Yet, with limited progress having been made, the current state of IG in Healthcare remains a green field of opportunity.

Here are five reasons why you should

consider adopting IG alongside your data and analytics programs:

Population health: Care coordination and patient engagement, the keys to a long-term population health strategy, depend on data linkage. Delivering services to the public requires information linkages and data sharing agreements with other provincially funded organizations that serve public health. With access to a wide-range of data analytics, population health professionals can obtain insights into high-risk populations to inform resource allocations that meet required critical intervention standards.

Patient flow and workflow automation: Workflow automation can leverage the data captured electronically and advance patient care by driving productivity gains, reducing service response times and supporting consistency in measuring value-based outcomes. For example, the Auditor General of Ontario noted a \$1.8 billion discharge processing problem due to high readmission rates, poor management of Alternate Level of Care days and standard discharge practices, including insufficient discharge summaries and a lack of scheduled follow-ups.

Post electronic system adoption, many provincial health organizations are now looking to automate remaining paper-based processes and workflows. Workflow automation solutions must not only de-

liver efficiencies and improve the patient's experience, they need to do so with viable cost recovery financial models that work within pervasive budget constraints. Some provinces have begun piloting these solutions leveraging mobile technology platforms to interface data with patient care systems.

Centralized Digital Information Storage: Centralized digital storage offers new or improved avenues to derive optimal value from data usage. For example, it allows the creation of electronically extracted and collated discharge summaries



Andrea Bacqué

for secured notification for physician sign-off, a first of many cost saving efficiencies automating discharge processing can provide. Beyond process optimization, it is possible to advance the applied use of the digitized health records across the information lifecycle. Consider the increased value to the organization and its business when accurate, predefined, consistently collected and comparable data sets are extracted from the content of a scanned/digitized document. And, when IG policies for record retention are auto-prompted for destruction in the centralized system, data quality is achieved and risk of keeping information too long is mitigated.

Master Data Management: The lack of interoperability among systems has created a complex environment reliant on the

critical master data management of the enterprise master patient index (EMPI). The EMPI, as well as the master provider index and other master indices, must be managed and audited for accuracy and consistency, and include a quality feedback mechanism for unique data sources sending data into the index.

Planning and Administration: Providing financial data and information to administer its activities requires an organization to, for example, process health insurance claims; keep records of births and deaths; manage its human resources, finances and business processes; and evaluating and improving its activities, all of which require accessing and analyzing large bodies of data.

IG policy is required to establish standards, measure, monitor and report against those standards, and manage outcomes. Creating a reporting dashboard for primary data quality indicators as well as the full lifecycle of information managed will demonstrate both progress and success for your IG program.

Healthcare organizations are struggling to manage competing priorities and shrinking budgets. And managing information in a hybrid environment, supported by siloed organizations and technologies, highlights the need for standards and practices in creation and adoption of information governance across the information lifecycle to reduce healthcare costs and improve quality of care.

Andrea Bacqué is Director, Canadian Healthcare Solutions, Iron Mountain. Profile: <https://www.linkedin.com/in/andreabacque/>



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Patient privacy and security by design

CONTINUED FROM PAGE 8

staff with the patient data they need to do their jobs safely and accurately, but only that which is truly needed.

This helps safeguard patients and community members who want to know their information is monitored and only accessed when necessary.

The technology also allows us to be both proactive and reactive, as both are needed to keep patient data private. If any patients come forward with questions about who accessed their data, we can easily take a personal view of all data access points and drill down further into why the data was accessed and for how long.

Additionally, we can create reports and graphs to provide executives a snapshot of any incidents, so executives and privacy leaders can better determine issues and possible resolutions.

Only as good as the training: Training is vital to our privacy program, as technology and policies must be appropriately applied to champion positive behavioral changes across the enterprise. This is where IT professionals become the pivotal junction between patient care and secure information systems.

At Fraser Health, we believe that with proper education and empowerment, even one person can make a huge difference in

keeping data secure and maintaining patient privacy. We not only communicate the various policies to all employees, but we also have mandatory confidentiality acknowledgement, orientation and ongoing training in place for all clinicians and staff members about the importance of privacy and security, so they can better understand why these policies and regulations are in place.

But, we also believe it takes more than one person or department to truly maintain patient privacy – a top-down approach and multiple divisions are necessary.

We have leveraged privacy technology and honed our related policies since 2004, making Fraser Health a patient-privacy leader. Therefore, we continually review our processes, policies and training to ensure they align with the most recent technology needs and ever-evolving healthcare landscape. As technology professionals, we want to empower and enable those who care for our community, all of whom expect us to keep their personal information protected, private and safe from prying eyes. To maintain trust throughout our communities, patient data must be viewed as important as the patients themselves.

Seana-Lee Hamilton is manager of information privacy and privacy officer for Fraser Health, which has multiple acute care hospitals and other facilities within British Columbia.

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Importance of patient-directed care comes to the fore at eHealth 2017

The e-Health 2017 conference, held in Toronto in June, covered the fundamentals of digital health and electronic health, and also displayed some of the most recent advances. Indeed, the meeting highlighted innovations that are drawing headlines these

days such as 3D printing and artificial intelligence (AI).

But what really stood out at this iteration of e-Health was the surfacing of something that has always been present but understated – the central role of the patient or health consumer and the impor-

tance of engaging patients to provide the best possible experience.

This theme of consumer digital health started with an afternoon pre-conference symposium and then continued through many of the conference presentations and parallel social media discussions on Twitter.

Some comments were critical, as conference organizers were urged to do more to involve patients in the organization and delivery of sessions at the meeting. Shelagh Maloney, Vice President, Consumer Health, Communications and Evaluation Services for Canada Health Infoway noted, “We have had a positive experience with patients involved in the conference.” But she added this still fell short of what should be done.

Infoway – one of the three conference sponsors along with the COACH, Canada’s Health Informatics Association and the Canadian Institute of Health Information (CIHI) – had sponsored patient representatives to attend the meeting, and conference organizers said they are working on how to broaden overall patient involvement next year.

Patient advocates such as Alies Maybee, Heather Thiessen and Angie Hamson (invited and sponsored by CIHI) were participants in the pre-conference session. Their involvement and comments from other patient advocates online who were not present underlined the critical importance of considering patient needs in developing digital tools to enhance care.

“Greater consumer and patient engagement across the board is foundational to the work we need to do in digital health,” said Mark Casselman, the CEO of COACH.

“Digital health is a key component to putting patients first,” said Ontario Health Minister Dr. Eric Hoskins, in a videotaped address to the conference.

This advocacy was accompanied by a resurgence in presentations about various patient health record (PHR) systems and portals in various jurisdictions across Canada that are being used to allow patients to directly access their own medical records, laboratory results and tools such as ones that will allow them to electronically schedule appointments.

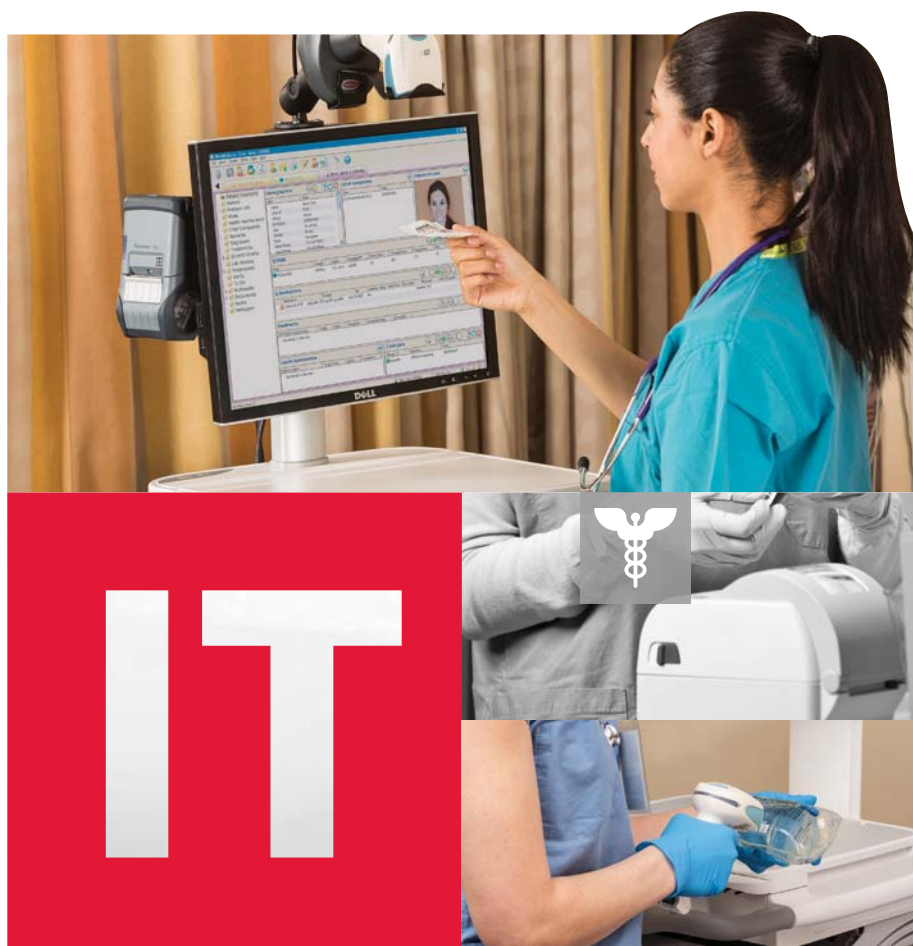
“The more information that is shared, the better it is,” said Dr. Anil Maheshwari, a Cambridge, Ont. family physician and long-time user of a patient portal in his practice.

Dr. Maheshwari expressed frustration that patient portals were still not part of the mainstream in healthcare delivery.

While patient portal use had been mandated under recent U.S. legislation, the development of such approaches in Canada has been more fragmented, although presentations showed certain provinces such as Nova Scotia and centres such as the University Health Network (UHN) in Toronto are now well advanced in plans to roll-out such portals to their entire patient populations.

The importance of patient engagement was stressed by Lucien Engelen, who presented remotely during the international panel. Engelen is director of the Radboud REshape Innovation Center in the Netherlands, and founder of the Patients Included movement, which advocates for patient involvement in all aspects of care.

In addition to noting the strong commitment to digital health in the Netherlands (all patients will have the ability to have a video visit with a nurse or doctor within the next five years), Engelen also underlined the philosophy of giving patients full control over their health data and how it is shared.



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Defending your clinic or hospital from hackers: Why storytelling matters

BY JESSE HIRSH

Healthcare information is incredibly valuable. That's one of the reasons why hackers are targeting clinics and hospitals so often, and why healthcare facilities are more vulnerable to ransomware than many other organizations.

The problem is compounded by the general lack of computer security in healthcare. As patients, most of us have the expectation that healthcare professionals will have more medical knowledge than technical knowledge.

But that expectation – and the sometimes-lax security measures taken to safeguard digital healthcare information – makes it hard for hospitals to adequately protect their technology.



Jesse Hirsh

Hacking is an oft-maligned word. Yes, it can mean something dastardly, but it also means embracing and understanding technology. It's about improving healthcare by using technology to make it more resource-efficient and patient-centric – in essence,

making it better for healthcare professionals, patients, families and taxpayers.

But there is a paradox: on the one hand, technology in the healthcare system is an empowering tool, but on the other hand it can come with privacy and security issues because of how valuable and sensitive our health information is.

At this point in the digital revolution, we are beginning to expect healthcare professionals and healthcare organizations to embrace technology in order to provide better, more efficient care. After all, as patients we are becoming more tech savvy and using technology to monitor and track our own health. But embracing technology does increase security risks.

That's where storytelling comes in.

Technology is taught using very technical terms, and yet most people don't respond well to dry language and jargon, particularly when they are trying to learn something new.

Since the majority of those using technology in the healthcare system aren't technologists, we need to rethink the way that information is delivered. That means using the right kind of language to teach healthcare professionals about technology, and to motivate them to be more responsible about the way they use it.

The fact is, healthcare professionals care very deeply about patient information and the integrity of medical data. Malice and neglect are not the reasons why systems don't get properly used; it's because staff members haven't had these systems explained properly in a way that can be truly absorbed and fully understood.

We have to take a cold, hard look at the reality of the situation and acknowledge the harm that comes from the loss of privacy, and loss of organizational capability, when technology is not secure and used improperly.

It may not be something everyone is comfortable admitting or accepting, but there can be a reluctance to attempt to understand how to use technology correctly and safely among medical professionals who are higher up the chain of command. They may feel they don't need to learn or

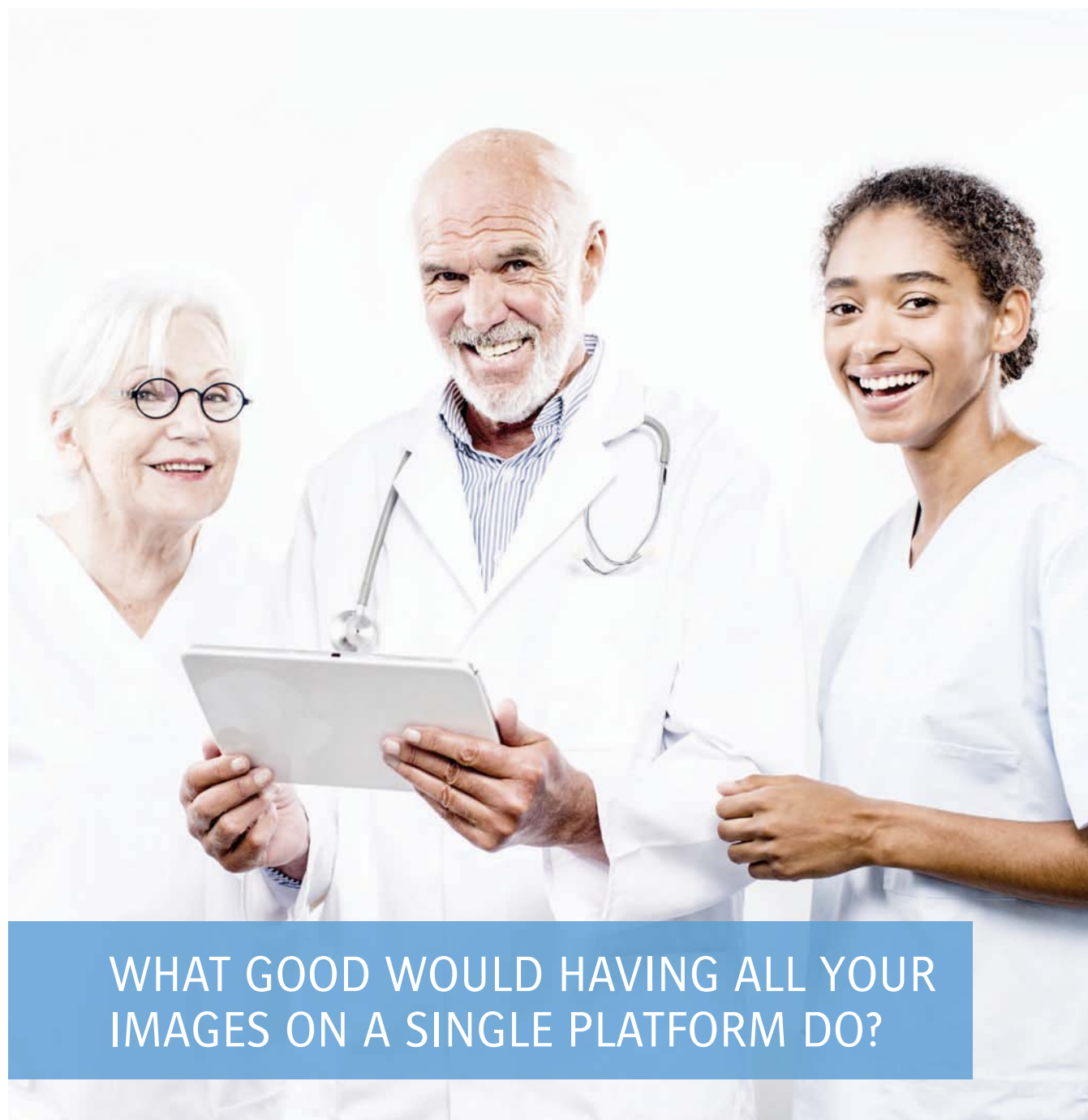
fully understand how to use technology safely because those who report to them will simply do it for them.

Criminals understand this dynamic all too well. They know that high-ranking medical professionals within a healthcare organization may have unsecure email and

passwords that are easy to hack. They know just how vulnerable that level of professional may be to phishing attempts and other cyber attacks.

The answer is not to abandon technology out of fear. The answer is to fully em-

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What can artificial intelligence accomplish? Defining AI's role in healthcare

BY ADAM HOWATSON

An ability to take advantage of Artificial Intelligence could make amazing things possible. However, our societal norms and values around AI are still catching up to what is technologically possible.

For example, in a recent survey of 2,000 Canadians conducted by OpenText on Canadians' attitudes toward AI, only about one-third of respondents (34 percent) said they would trust the medical diagnosis of AI technology (but only if verified by a doctor), while over 50 percent said they either weren't

sure or would not trust the diagnosis.

That's a healthy degree of skepticism, but AI technology, especially in healthcare, has the potential to create a much more efficient system by streamlining diagnoses and creating more efficient treatments and research techniques.

Today, AI technology is about generating new insights and information from both connected and seemingly unrelated data sets. While other consumer-facing industries are taking advantage of the technology for tools such as chatbots (text-based electronic agents on call to help solve customer problems) and voice-controlled smart-home devices that can order dinner and dim the lights at bedtime, healthcare organizations can also realize the potential and possibility in AI.

Many healthcare organizations are already using enterprise information management software to catalogue, organize and serve the multitudes of information created each day. Clinicians at healthcare facilities can now have instant access to electronic medical records, which can include information and notes from caregivers in multiple fields.



Adam Howatson

AI technologies can help make connections between different sets of information, creating more accurate and more efficient diagnoses and could also suggest treatment plans based on that information.

OpenText's AI platform, Magellan, leverages open platforms for large-scale data processing. Magellan integrates visualization, voice, video, search, text, natural language processing, and semantic and numeric engines, which, when combined, opens up a world of opportunities. It allows organizations that have adopted a digital-first approach to process large volumes of data that are simply too much for any person to digest efficiently.

What sets OpenText's approach apart is its adherence to building on open standards and how the AI platform will integrate into software already in use and running on an organization's existing hardware. Using this approach, the cost and time required for implementation decreases and the overall technology is accessible to a much larger group of organizations.

Healthcare organizations, whether on the front-lines of patient care or research facilities, are the ideal use-case for AI technology. The technology is best deployed when the volume of data is so great, it would not be valuable for a human to perform the analysis.

For example, in research settings such as genomics, where billions of base pairs are being analyzed, AI solutions could prove tremendously valuable.

In hospital settings, where time is often a critical factor in treatment, AI can help incorporate multiple types of information – from X-rays and MRIs to unstructured notes and test results – to help guide physicians and provide them with timely insights into their patients' conditions.

Adam Howatson is Chief Marketing Officer at OpenText. He joined the company in 2001 and has served in Product Management, Marketing, Engineering, Information Technology, Office of The President/PMO, Partner Development, and Mergers & Acquisitions.



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Symposium on nursing data standards refines issues and challenges

BY LYNN M. NAGLE AND PEGGY WHITE

On April 6-8, 2017, the 2nd National Nursing Data Standards Symposium was held at the Lawrence S. Bloomberg Faculty of Nursing, University of Toronto. The 85 participants included nursing and informatics leaders, data standards experts, vendor representatives and doctoral nursing students.

The Canadian Nurses Association (CNA), the Canadian Institute for Health Information (CIHI), and Canada Health Infoway (CHI) again hosted the symposium, which included individuals from every Canadian jurisdiction. Sponsorship for the event was generously provided by: Cerner, EPIC, Orion Health, Becton-Dickinson, Gevity, IBM, Healthtech, and HI Next.

The attendees addressed the strategic and tactical efforts needed to advance the adoption of national nursing data standards. More specifically:

- To develop short-term objectives and action plans to promote adoption in clinical administration and practice, nursing education, research and policy domains;
- To identify the stakeholders, accountabilities and sponsorship for actions to advance this work in Canada.

The leaders of this effort support the premise that the adoption of national data standards will:

- Allow for consistent monitoring of outcomes across the continuum of care, thereby facilitating safe, quality care and continuity of care;
- Enable national, peer-group comparability, providing both macro and micro insights to guide decision-making and inform funding requirements and health human resource planning;
- Improve population health by enabling individuals to use consistently named, defined, and measured clinical data to understand and manage illness and improve their health.

An update on numerous activities completed since the 2016 symposium included:

- Development of clinical and administrative case scenarios to illustrate the value and use of clinical data standards;
- Identification of key messages regarding the “Value of Nursing Data Standards”;
- Development of a draft of core informatics competencies for the nurse executive/administrator;
- Submission and approval of a resolution for the adoption of national nursing data standards by the CNA Board of Directors;
- Development of a policy advocacy strategy in conjunction with the CNA.

There was also a showing of a new whiteboard animation, created with the purpose of conveying the “Value of Clinical Data Standards”, for nursing practice and administration, and health policy and human resource planning (To view go to: https://www.youtube.com/watch?v=u_ZI2_JDxW0&feature=youtu.be). Additionally, several publications, presentations and the creation of links to the work from various websites were highlighted as achievements over the past year.

Finnie Flores, Program Lead, Architecture and Standards, CIHI and Lynn Mc-

Neely, CIHI Special Projects Lead, delivered an opening session focused on: “What interoperability can mean for continuity of care.” Their message underscored the importance of advancing clinical data standards and emphasized that in order to achieve interoperability, it is important to have:

- An appreciation of the value proposition of sharing standardized data
- Confidence in the quality of data enabling legislation/policy
- A strong privacy and security framework
- Consistent use of data exchange standards.

They noted that CIHI is working with vendors to help influence approaches taken in building the interface/system that supports the workflow of clinicians (noting vendors still have complete discretion over the design of that interface, CIHI will

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Help is out there for doctors seeking to become innovators and entrepreneurs

Funding and business support is available from a wide array of sources.

BY DR. SUNNY MALHOTRA

Many successful health apps have been conceived by healthcare professionals seeking solutions to problems in their own practices or with patients. MaRS Discovery District has supported the creation and launch of innovative digital solutions spearheaded by doctorpreneurs in fields such as telemedicine, service handover, and patient engagement.

However, the development of viable, integrated digital health solutions is far more complex than the development of solutions in other industries and sectors. And while private companies such as MedStack and QoC Health build, test and commercialize digital health solutions, it is wise for doctorpreneurs to consider a few things in their planning:

Product development partnerships: Building a successful technology-based business requires the management of a number of moving parts beyond an appreciation for the customer problem. With regards to software development, channel relationships, marketing, fundraising, customer development and sales, many find success taking on the role of Chief Medical Officer or in other partnership approaches with other entrepreneurs to move their ideas forward. In the US, the Society of Physician Entrepreneurs provides support by way of meetings and community tools to help these ideas find market viability. In Canada, the Canadian Medical Association's Joule program is partnering with Hacking Health to provide business-structure support for the development of these kinds of solutions.

Funding: There are many ways to fund your startup. Funding for digital health has traditionally been challenging to acquire in Canada, but more focus is being placed on the opportunity in terms of business

infrastructure. Entrepreneurs have access to grants and funding sources, such as Futurpreneur Canada, Natural Sciences and Engineering Research Council of Canada, and the Ontario Centres of Excellence. Incubators and Accelerators / Regional Innovation Centers, such as MaRS Discovery District, the Ryerson DMZ, the Creative Destruction Lab, Communitech and ven-

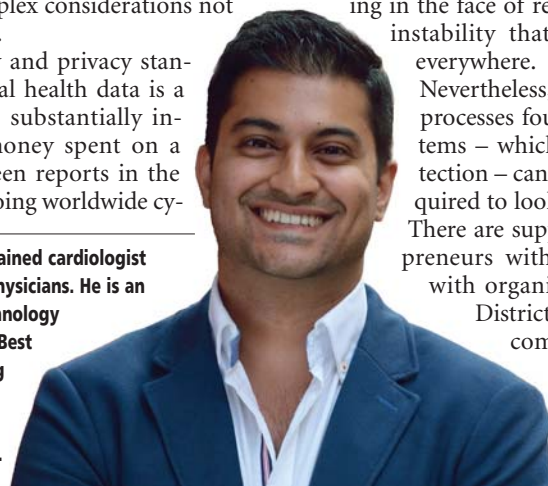
Physicians who are trained to be conservative and cautious about risk-taking will encounter a different mindset among entrepreneurs.

tureLAB are placing a priority on digital health as a category, and offer guidance through these processes.

Security and privacy technology: While entrepreneurship brings its own challenges, particularly in contrast to the very structured nature of practicing healthcare, these are compounded by the fact that digital health faces complex considerations not found in other verticals.

Meeting the security and privacy standards that govern digital health data is a daunting task that can substantially increase the time and money spent on a product. There have been reports in the news recently of an ongoing worldwide cy-

Dr. Sunny Malhotra is a US trained cardiologist working at AdvantageCare Physicians. He is an entrepreneur and health technology investor. He is the winner of Best in Healthcare - Notable Young Professional 2014 and the national Governor General's Caring Canadian Award 2015. Twitter: @drsunnymalhotra



berattack by the WannaCry ransomware cryptoworm. This malware targets computers running the Microsoft Windows operating system by encrypting data and demanding ransom payments in Bitcoin.

Companies like MedStack are helping entrepreneurs and developers to quickly and efficiently build compliant health apps. Via this platform, development teams can cut the time and cost of building an app by 60 percent. MedStack also provides industry-leading cloud security architecture and a standardized data model based on HL7 FHIR that enables apps to easily integrate with the EHR systems already integrated at these institutions.

The entrepreneurial mindset: Perhaps the biggest shift required of physicians working as entrepreneurs is to juggle a conservative, cautious approach with the risk-taking, failure-welcoming mindset of business creators. The traditional approach of doctors is often a strength, given their strongly analytical mindset, experience in teamwork, and passion for patient success. These attributes can provide critical grounding in the face of repeated rejection and financial instability that is the reality for founders everywhere.

Nevertheless, the entrenched structure and processes found in healthcare delivery systems – which provide assurance and protection – can also hinder the innovation required to look beyond current practices.

There are supports available to help doctorpreneurs with these hurdles. Partnerships with organizations like MaRS Discovery District, and the assistance of private companies such as QoC Health and MedStack, can help doctorpreneurs enter the healthcare-technology ecosystem and bring new solutions to fruition.

REBOOTING eHEALTH

Being perfect isn't all it's cracked up to be

BY DOMINIC COVVEY

Iremember it like yesterday. A few months ago – true story, at least the answer part – I walked into the Sunny Mayne Bakery where I often have breakfast. The owner greeted me with her clichéd greeting: “How are you today?” The question caused me to pause, because I had a sense that something was different. I reflected for a few seconds and then said “Perfect! Absolutely perfect!” As I left the counter, I realized that, while asleep the night before, something momentous had happened. I had turned perfect! So, today, I wanted to share with you what being perfect is like.

Things have really changed! Probably my most enjoyable use of time

used to be reading. I most often read about health informatics, physics, and cosmology (I trained originally in astrophysics). In that moment in the bakery, though, I realized that I would never have to read again!

This freed up vast swaths of time. Suddenly, I realized why, maybe, many people in our field don't read: it takes a lot of time. Of course, they don't get the opportunity to enjoy a good book – and they also don't have to ponder challenging ideas. Then a deeper realization came over me: I was just late to the bar, so to speak! They must have achieved perfection before I did. Finally, real clarity! I get it!

When I got home to make a call to a friend, it also occurred to me that I no longer needed mentors. So

many had helped me in the past, shaped my thinking and sculpted my career. But now I would no longer need them. That was, perhaps, a bit



Dominic Covvey

sad, as this would dramatically reduce the number of my friends, many of whom have mentored me. My flash of insight that many out there had already achieved perfection, clarified why they shirked having mentors. Mentors also consume a lot of time and make one feel that one needs to learn things and

perfect oneself. However, that was no longer necessary for me. Furthermore, with my new powers of intelligence, I could deduce that this explained others' disinterest in such people. Things were becoming more obvious to me! Questions I always had were being answered!

Interestingly, when one is perfect, Codes of Ethical Behavior are no longer of value. I knew intrinsically what was right and wrong. How I should behave was now starkly clear. I no longer needed those guidelines on my behavior – that came with perfection!

Suddenly, mirabile dictu, I realized why there was so little interest among professionals in Codes of Ethics. Those who had achieved per-

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Beware of transcription vendors playing with word counts, accuracy

BY MARIA FRENCH

Do you want it good, do you want it fast, or do you want it cheap? (Pick two.) Such is the mantra of essentially all service relationships.

Unfortunately in medical transcription, the second most common mantra seems to be 'figures don't lie, but liars can figure.' As soon as everyone agrees on how to measure performance objectives, someone finds a new way to cheat the system.

Document quality: Looking past all the studies that show front-end speech recognition workflow schemes pass along four times more errors than traditional transcription (0.33 to 1.33 errors per report), and point and click systems with physician self-type workflows are considerably worse (7.8 errors per chart), how quality is measured has once again become an issue of ambiguity.

A joint AHIMA, AHDI and MTIA effort defined 'Healthcare Documentation Quality Assurance and Management Best Practices' to provide a straightforward

document quality scoring system that assigns point values to different types of errors.

For example, punctuation or spelling errors have a point value of one, while care impacting issues such as misused medical terms or demographic errors

have a point value of three.

These scoring standards apply equally, regardless of the document creation method being used (i.e., traditional transcription, front-/back-end speech recognition, physician self-type, etc.)

Most transcription service contracts include a requirement to maintain a minimum 98 percent accuracy. Unfortunately, even expressing the expected performance as 98 percent starts you down the wrong path, as the standard calls for a "score" of 98, not an accuracy "percentage" of 98 and there's a huge difference between the two. That difference is what some vendors are now exploiting.

It's easy to configure speech recognition software to count the number of words in a document that are changed during the initial editing phase. That does not mean the speech recognition draft was accurate or the number of words changed resulted in a true quality document, yet that number of edited or changed words is easy to define and that's how some vendors now measure document quality.

The average acute-care report includes 300 to 350 words. If you only count changes, you can make six or seven corrections and still meet the 98 percent accuracy target. Clearly any document with half a dozen errors is of unacceptable quality, yet that is how some vendors now calculate their quality results.

If your vendor provides you with a slick looking spreadsheet-type "quality report" showing strong numerical scores – with no details – that seems too good to be true

given what you see in the delivered reports, you need to call them on it.

True audits include descriptions of the errors types and the corrective actions taken with staff. Those other scores are an incomplete quality assessment of their speech recognition engine, not a true qual-

ity assessment of the completed reports.

Service cost: Pricing seems to always be the most manipulated variable of all. Long ago, you expected to pay by the hour, then by the page, then by the line. Now, you are encouraged to pay by the visual black character (VBC). Each step to a smaller, more

precise unit of measure was expected to bring an end to the rampant volume calculating games that have always given the industry a black eye.

In transcription's volume-based pricing market, the 65-character line or VBC rate

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Maria French



Transforming
Patient
Care

Congratulations

to the Connecting Care 2 Home (CC2H) members from London Health Sciences Centre and the South West LHIN on their 2017 National Quality Award.*

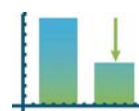
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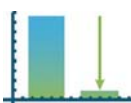
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* Connecting Care to Home (CC2H) has been named the recipient of the 2017 3M Health Care quality Team Awards for Quality Improvement Initiative(s) Across a Health System by the Canadian College of Health Leaders. Full team includes LHSC, the SW LHIN, Sensory Tech, Victoria order of Nurses and ProResp.

CC2H program keeps patients at home connected to nurses and other care-givers

When in trouble, patients or helpers can use the eShift system to obtain support from experts.

BY DIANNE DANIEL

On a peaceful summer afternoon earlier this year, London, Ont., resident Jim Purchase was getting ready to head out to the movies with his wife when he started to feel “kind of funky.” Purchase, 67, was diagnosed with congestive heart failure in 2002 and ended up in hospital multiple times since then due to tightness in his chest and difficulty breathing.

This time the outcome was different. Instead of panicking to the point where he called an ambulance, Purchase phoned his Connecting Care to Home (CC2H) access number and spoke to a registered nurse who called up his latest medical information on her computer. He relied on her help to get his breathing under control and “was feeling 100 percent better” by the time he hung up.

“The main point is that I recognized I had to do something,” says Purchase.

CC2H is a new program administered by Ontario’s London Health Sciences Centre (LHSC) in conjunction with South West Local Health Integration Network (LHIN) Home and Community Care, St. Joseph’s Health Care London and Thames Valley Family Health Team.

Building on the success of the South West LHIN’s eShift Care program, originally launched to support medically fragile children and palliative patients at home, CC2H applies the same multi-disciplinary approach to improve the patient experience for those with chronic diseases, a group that often has higher rates of emergency department visits or readmissions following a hospital stay.

The first groups targeted by CC2H are patients diagnosed with chronic obstructive pulmonary disease (COPD) and congestive heart failure (CHF). The goal is to integrate patient care between hospital and home by engaging patients, and ensuring hospital, community and primary care teams are all on the same integrated care path.

Patients are identified in hospital and invited to join the program, which essentially provides “wrap-around care for the patient,” explains Laurie Gould, Chief Clinical and Transformation Officer, LHSC.

“It’s really looking at the whole continuum of the patient journey ... and is driving significant change around how we transition care to patients,” says Gould, noting that the program effectively applies both team and technology to enable self-care for patients. “There’s a good hand-off between the acute and community sectors, and it’s seamless,” she says.

On the hospital side, the transition to home is coordinated by a navigator. On the community side, a clinical care coordinator follows the patient home, providing a medication reconciliation and safety environmental scan while ensuring any home care required – such as physical therapy, occupational therapy or personal support worker care – is in place.

The hospital physician maintains ultimate responsibility for patients until they transition back to their primary caregivers, but clinicians in both organizations are part of the integrated care team.

Patients are provided with educational materials and 24-hour access to registered nurses. In some cases, they are also equipped with iPads, blood pressure cuffs and weigh scales.

Home care services are administered through the

Victorian Order of Nurses under the direction of designated registered nurses. Videoconferencing – provided through the Ontario Telehealth Network – is used pre- and post-discharge, so that all members of the integrated care team can ‘virtually’ meet with patients and family members to go over next steps and confirm the care plan.

Throughout the CC2H program, everyone who touches a patient has 24-hour access to one patient file, updated in real-time with information related to key clinical indicators for COPD and CHF. Dr. Nasser Khalil, the CC2H project lead, calls it a “real-time, community bedside dashboard” and one of the program’s key success factors.

“The dashboard increases physician confidence as they are able to daily visualize, assess and predict patient needs rather than respond (when something goes wrong),” says Dr. Khalil, adding that it also provides shared accountability as patients transition across healthcare settings. “Technology allows for contin-

visits to patients at home as opposed to the longer, overnight shifts required for palliative patients or extremely ill children.

Working in collaboration with the CC2H integrated care team, Sensory Technologies created forms and workflow to meet the requirements specific to COPD and CHF. The technology is capable of supporting additional care paths in the future.

Delivered as a software-as-a-service with strong service level agreements in place to ensure quick response times and high availability, eShift Clinic provides secure and scalable RESTful web services within a VMware virtual environment.

It is accessed on both desktop and mobile devices depending on the user’s role within the program; users log-in with a user ID and password and can view patient dashboards from wherever they happen to be. Registered nurses and physicians typically access the dashboard from desktop computers whereas home care providers in the field tend to use smartphones or tablets.

All members of the integrated CC2H care team leverage the dashboard to ensure “everyone is on the same page,” says Sherri McRobert, Manager, Telehomecare and Connecting Care to Home, at the South West LHIN. “It really gets down to good communication in a very complicated healthcare system.”

The process is further simplified because all branding is removed. Instead of having multiple phone numbers for multiple home care agencies, patients have one phone number to remember and use it for all inquiries, from something as simple as checking an appointment to a full-blown emergency situation. “They know that if they call the 24/7 line, they’re not going to go to voice mail, they’re going to get a nurse who’s going to pick up the line and look into their file,” she explains. For Darcy Campeau, a 59-year-old London resident recently diagnosed with atrial fibrillation compounded by a brain tumour in his front left temporal lobe, CC2H is a “well-orchestrated” service that is keeping him “healthy and happy” at home.

After spending 10 days in hospital to treat his condition – a “double or nothing he can live without” – Campeau was discharged home with the support of his integrated CC2H team. As someone who lives alone, he says the program provides reassurance and helps to alleviate feelings of panic or anxiety.

Immediately after discharge from hospital, Campeau received home care visits twice a day. The schedule gradually expanded to one per day, then one every three days and eventually one per week until the home visits ended. Access to the 24/7 support line is ongoing.

He recalls one day when his vital signs were slightly off and the technician visiting his home called the registered nurse for direction. “The nurse at headquarters asked if I had taken my morning medication and I had forgotten to,” says Campeau. “They do their homework and make sure they’re on top of your case file. I was really impressed.”

Purchase, who uses an iPad to log his vital signs each day, describes the program as “hospital care, but at home.” He enrolled in CC2H in May, 2017, following a scare that sent him to hospital on his wedding anniversary.

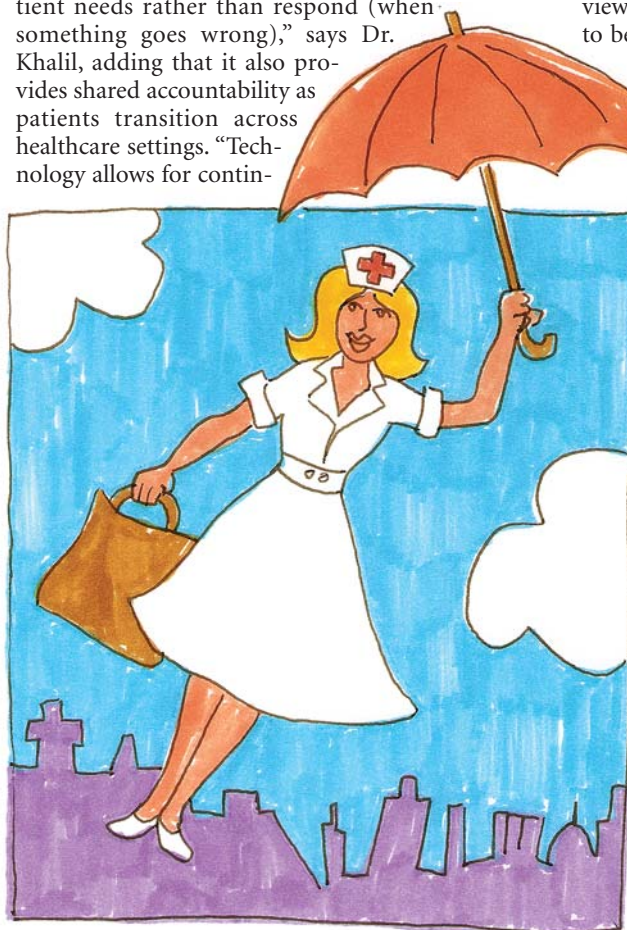


ILLUSTRATION: LINDA WEISS

uous physician support pre- and post-discharge and during the transition time from hospital to home which is the most anxious time.”

Clinical indicators for COPD and CHF include symptoms such as wheezing, chest tightness, mucous coloration, blood pressure and lack of energy – all of which are monitored daily by the patients and/or their in-home care providers. If physicians detect that a trend is worsening, they intervene and give orders to the registered nurse who is managing the patient file. Similarly, nurses and other members of the integrated home care team alert and consult with physicians when they have concerns.

The technology that makes the single patient view possible is a web-based service, developed and operated by London, Ont.-based Sensory Technologies, called eShift Clinic. Similar to eShift Care, and applying the same cascading delegation model of care, eShift Clinic is designed to support shorter, quicker

sary. “I was sitting in Emergency and my wife was with me and my family, and I said ‘I really feel I should have been better prepared to understand what I need to do to avoid being admitted to hospital,’” he recalls. “A day or so later a nurse asked me if I was interested in the program to continue my care after I left the hospital, and I said that’s exactly the kind of thing I felt was necessary for me.”

For patients like Campeau and Purchase, CC2H alleviates the burden of “now what?” says Gould. “Patients want to get out of the hospital, but then reality strikes and it’s ‘My gosh! What am I going to do? What if this happens?’” she says. “At the hospital, we do discharge teaching and we follow up with patients, but they don’t necessarily hear it all.”

Knowing there’s a virtual team watching out for early signs of distress and prepared to intervene to keep them healthy, patients in the CC2H program are free to focus on learning how to manage their conditions on their own, avoiding costly and sometimes unnecessary trips to hospital, she adds.

CC2H Clinical Care Coordinator Carol McLean says one notable change since the program’s introduction is that patients are beginning to “own” their conditions. Knowing they have the support of a 24/7 help line and a dedicated home care team working under the oversight of a physician gives them the confidence to recognize when their symptoms are changing and make pre-emptive adjustments, she says. “The facts are there to say they don’t need to go to Emergency. They have a better understanding of what’s going on.”

At the same time, CC2H involves a strong educational component. For COPD patients, for example, education might include smoking cessation or dietary assistance. When required, the team can also pull in social services to assist with finances or to fund medication.

“A lot of times patients have lived like this thinking nobody cares for such a long time, they’re quite overwhelmed when they see that there are people out there who do care,” says McLean. “Sometimes they are waking up alone and frightened and can’t catch their breath. They just call the number and we talk them down.”

One of the advantages to eShift Clinic is that it includes a data repository called eShift Central. Data is collected, stored and presented back to LHSC so that it can measure the CC2H program’s impact. In the first year, hospital lengths of stay are roughly 60 percent shorter, hospital readmissions within 30 days are down by 42 percent and overall costs related to emergency department visits, inpatient care and readmission have decreased 58 percent.

Due in part to its quantitative success, CC2H was named a recipient of the 3M Health Care Quality Team Awards for Quality Improvement Initiatives Across a Health System in June. Awarded by the Canadian College of Health Leaders, the recognition is based on three key elements: innovation, quality and teamwork. Donna Ladouceur, Vice-President, Home and Community Care, South West LHIN, says they are now exploring ways to expand the program, perhaps to other chronic disease populations or to support mental health.

“The opportunities are limitless with a platform like this. To me, this is where we need to go for chronic disease models

across the province,” says Ladouceur. “Having specialist trained staff at the bedside is always a challenge, so being able to have the technology as a way to enhance that support at bedside with a virtual specialist is critical for us.”

Dr. Khalil would like to see the program standardized to suit every patient population. He sees it as an effective way to eliminate waste in the health care system and to

empower patients at the same time. The main challenge is to engage primary care physicians who are solo practitioners and often prefer to receive patient updates via fax, he says.

“It’s a system problem, but it’s improving over time,” says Dr. Khalil, noting that primary caregiver participation in CC2H has increased from 50 percent to 90 percent since inception. “Patients feel sup-

ported when they see hospital teams, primary care teams as well as the home care team connected. They see that everyone is connecting and talking for their benefit.”

For further information regarding the CC2H program and underlying eShift technology platform, please contact Andrew Matthews who can be reached via email at Andrew.matthews@eshiftcare.com

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CareCrew app allows families to coordinate and monitor home care

BY JERRY ZEIDENBERG

When Christina Chiu won the top prize at Hacking Health Vancouver in 2016, she knew she had the basis for a viable company. The app, called CareCrew, enables families to coordinate the care of a loved one who is living at home and needs help – such as house-keeping or medical assistance.

Care-givers may visit each day, but if a family member isn't there to supervise, who's to say the right services are being provided?

"Families are stressed out, because they don't know if their loved ones are being looked after properly," said Chiu. "They want to know if their parents with diabetes are getting their medication, and if they've got dementia, if they're being looked after properly."

"And caregivers are frustrated because they don't always know everything that's expected of them when they're working in people's homes," she added.

CareCrew solves these problems with a wireless app that clearly shows family members, clinicians and front-line care-givers the tasks that should be done each day.

A care plan can be created, with tasks and notes that are linked to the plan. A care-giver can check off the tasks as he or she completes them, and family members can see at a glance – using a smartphone or computer – whether mom has received her meds for the day, has had her meals, and if the bathrooming and housekeeping have been done.

Since it's an app, an account can offer secure access so that family members and

friends can keep an eye on loved ones, even from remote locations.

Sons or daughters who are living out of town, or are away on business, can check their phones or computers to see if tasks are being completed and which caregiver has been doing them.

The app also has a payment system – once members are satisfied that proper care has been given for the week or the pay period, they can transfer funds to the caregiver. "It even supports bill splitting," said Chiu. "We know that many families share the payments."

In future, the system will make use of sensors in the home to provide additional information – such as whether the stove burners have been turned off, and if meds have been taken for the day.

By using the Internet of Things in this way, the system will also help verify whether care-givers are actually performing the work they're supposed to do.

Moreover, the system will be accessible by doctors and nurses. "Clinicians will be able to see the information. Doctors will get accurate information about the medications that a patient is taking, and if he or she has been taking them regularly," said Don Newsham, the former CEO of COACH. Newsham has taken on the role of Chairman of the Advisory Board at CareCrew, to help the team commercialize the product.

CareCrew plans to officially launch the app for general use in December. Right now, it has been in development, as Chiu and business partner Andrew Forde have been busy transforming what was a great idea for a hackathon into a thriving business.

"It takes a lot to turn an idea into a viable business," said Newsham.



L to R: Luc Sirois, Christina Chiu and Don Newsham.

An important step was to conduct research, using the "lean start-up methodology" pioneered by Eric Ries and entrepreneurial guru Steve Blank at Stanford University. The methodology advises start-ups to run their concept by 100 potential users.

In this way, entrepreneurs can determine whether their ideas are viable, if customers would actually buy the product, and just as importantly, what features are missing that should be added.

Over the past year, CareCrew has interviewed potential users – families, front-line care-providers and clinicians. They've validated the app, encouraging Chiu and Forde to continue development, and they also made suggestions about new and useful features that could be added.

Chiu originally led a team of 19 clinicians, advisors and developers at Hacking Health 2016, in Vancouver. Since then, they've pared the team to six – small enough to keep costs in line but with enough brainpower to create a unique app that's easy to use.

Financing so far has come from friends and family – the traditional pre-seed funding.

Since the hackathon, CareCrew has entered other contests, such as the BC New Ventures Competition, where the company made it to the final 15 competitors out of a starting pool of 216. It also entered the Fraser Health Hackathon, where it won an X-Factor Award.

Participation in these events has raised the profile of the company and has also provided it with constructive criticism from judges and other participants.

For her part, Chiu, 27, worked in two care facilities before coming up with the idea for CareCrew. At one of the facilities, she noticed the confusion that was caused when the care-plans of seniors were misplaced.

"I asked myself, what happens in home care, where they often don't have computerized care plans? The confusion must be even worse."

She set out to create a simple but powerful app applying her learnings from the UBC Master of Health Administration program that could map out a care plan for home care clients, and which could also be used to keep family and care-givers all on the same page.

"It's all about empowering families, so they can take better care of their loved ones," said Chiu.

Canada's looming challenge: reducing the loneliness of the aged

BY SHELLEY GILBERG

The dramatic increase in lifespan in recent decades – from an average of 50 years to 80 years and more, is an amazing achievement. But at the same time, longer lifespans have a potential downside: loneliness among the elderly.

The benefits of living longer can rapidly turn to burdens after losing your partner or siblings, and your children (if you have them) leave to support their own families. This lack of social connection, fewer relationships and low levels of social engagement can lead to devastating results.

Already, as many as 1.4 million elderly Canadians reported feeling lonely, as revealed by Statistics Canada, and experts are now calling it a public health crisis.

By 2050, the United Nations expects nearly one in five people will be age 60 and above, and for the first time ever, more people in Canada age 65 and over outnumber the younger demographic.

Organizations around the world have started to work together to tackle this issue through some of the latest cognitive and cloud technologies, using natural language processing, visual recognition, data

integration and artificial intelligence.

Through the Hamilton Seniors Isolation Population Impact Plan, seven organizations are actively working together to help prevent and reduce social isolation among seniors across the region.

These organizations include Thrive Group, in partnership with Caredove, to deliver an interactive, one-stop web-based resource centre and referral system that links seniors and their advocates to community support services, such as the nearest clinics and workshops. The system allows seniors to book appointments and set up an alert system for reminders and updates.

In addition, ongoing focus groups and interviews with local seniors and service providers will lead to the creation of a broader city-wide plan and programs to assist seniors transitioning from hospitals to their home and community.

Rendever, a virtual reality experience provider in Cambridge, Mass., makes it possible for seniors, in the comfort of their own living spaces, to take part in solo or group virtual explorations of places they can no longer visit in person.

Users of the device can take a trip to the Hawaiian beaches, trek through Machu Picchu, and marvel at the Taj Ma-

hal. The system includes multiple virtual-reality headsets that sync with a customized software and tablets.

Much of the exploration is done through Google Maps, based on approximately 20 million gigabytes of content from the internet. Facilities using the technology reported a 40 percent increase in residence happiness levels.

The Silver Line is a U.K. organization that runs a national helpline tailored to social needs of the aging. A free and con-

As many as 1.4 million elderly Canadians reported feeling lonely, as reported by Statistics Canada.

fidential helpline open 24/7, 365 days a year for those 60 and older, Silver Line has received over 1.3 million calls since its launch in 2013. Two-thirds of these calls come overnight or on weekends when other services are unavailable. The helpline team offers information, friendship and advice, as well as links callers to local groups and services they may need.

To further explore the best ways to en-

able organizations to create solutions for those affected by aging, IBM's Industry Academy, a group of the company's most eminent and innovative industry visionaries, launched a multi-industry aging initiative.

One of the outcomes is a recent study, produced in conjunction with IBM's Institute for Business Value, that describes the four core principles to help foster greater connection among older adults:

- Two heads are better than one. Organizations will need to understand how to identify and work with the right ecosystem partners, especially in a field which stretches across infrastructure providers, government agencies, life science companies, academic researchers and advocacy organizations.

- Customization is essential. Such as with many of today's technologies, to build and enhance social capital, products and services need to be tailored to the interests of the individual and adapted to their communities.

- Personalization takes priority over simplification. Solutions should adapt to the wide levels of technical fluency within the aging community. How one generation learns, uses and views technology will

Tele-home care saves patients trips to the hospital, improves quality of care

Heather Watkins was very surprised by the gestational diabetes diagnosis she was given. The healthy 39-year-old flight attendant assumed she had simply eaten too much cake the night before her test. Despite crossing her fingers, a second round of testing two weeks later confirmed her diagnosis.

“My first appointment at the gestational diabetes clinic was fairly overwhelming,” Watkins said. “There was a lot of information to learn, and I was being asked to monitor my blood sugar four times a day, so that was a bit scary for me.”

Heather was enrolled in a Telehomecare project that provided her with digital health tools she used to input her insulin levels. The system then instructed her to adjust her dosage when required.

Whenever she had questions or experienced a reaction to the insulin, she used the tool to inform her nurse, Catherine Higgins, ensuring her care team was constantly aware of her condition and could step in if required.

“Knowing how Heather was doing on a daily basis enabled me to monitor her condition much more thoroughly than if I waited for her to come in for routine appointments,” said Higgins. “Not only was she monitored much more closely, it was done remotely, eliminating the need for many in-person appointments.”

“Without access to digital health, I would have required at least one visit to the hospital each week, if not more,” added Watkins. “That would have meant time off work and money towards parking that could otherwise be spent getting ready for



Diagnosed with gestational diabetes, Heather Watkins used tele-home care to ensure that she stayed healthy.

the baby. As a busy, expectant mother, digital health helped me manage my condition from diagnosis to delivery of my healthy baby girl.”

More than ever, patients like Heather have become active managers of their own health and wellness, benefitting the health care system and patients alike. For example, a recent report by the United Kingdom’s National Health Service (NHS), *Feeling Better? Improving patient experience in hospital*, reveals that patients who receive care in organizations that place a strong emphasis on providing a high-quality patient experience have better health outcomes.

Those of us in the health technology and innovation sectors are well-versed on the benefits of digital health and how such advances have helped healthcare providers from across Canada drive improvements in outcomes.

Michael Green, Canada Health Infoway’s President and CEO, says that providing more Canadians with access to digital health tools will amplify these benefits.

“Infoway is working with patients, health care providers and the provinces and territories to increase the number of Canadians who have secure access to digital health solutions,” he said. “Our collective aim is to further improve the patient

experience in order to achieve even greater outcomes for patients.”

This bodes well for Canadians, who have made it clear they want a digitally-enabled health care system.

A survey is conducted every year by Infoway to help gauge Canadians’ levels of awareness, understanding and perceived benefits of digital health, as well as current access and use of these services in Canada.

While the results confirm a considerable gap remains between the nine in ten Canadians who want access to digital health tools and capabilities and the one in five who do, the gap is narrowing. In fact, the availability of consumer digital health services among Canadians has doubled from six-seven percent in 2014, to 14-22 percent in 2016.

Those who have access to digital health services are reporting positive patient experiences and are more confident in the care they receive.

And positive patient experiences lead to greater health system benefits such as lower overhead costs through lower staff turnover, enhanced patient recovery, improved productivity and efficiency, and more informed choices by patients according to the NHS study.

The federal government’s recent \$300 million commitment to Infoway in Budget 2017 to improve the health of Canadians through digital health will help accelerate this momentum.

This renewed funding, coupled with a strong desire by Canadians to have access to digital health tools and capabilities, underscores the tremendous opportunity we have to transform health care in Canada.

likely be different to the next.

- The ability to scale is crucial. While there are many successful pilots and research projects existing today, they often operate in silos and require a high degree of customization, which limits their ability to expand. Viable future solutions must offer both ease of customization and cost-effective scalability.

Despite the hard work of physicians, caregivers and other healthcare professionals, our current societal structure is limiting the support we can provide to older adults. As a result, new ideas are taking shape to engage various industries, organizations and agencies around more holistic solutions. They range from intergenerational living to post-retirement careers and education opportunities to autonomous vehicles.

Old age isn’t going away, and for the majority of us, it’s only coming closer. Solutions that are simple, intuitive and scalable are needed by older adults to connect with their loved ones, engage with their communities and build new social connections.

Shelley Gilbert is the Vice President, Canadian Healthcare Services Leader, for IBM Canada and the leader of the Global Centre of Competency for Healthcare and Life Sciences for IBM.

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Healthcare Technology



Nursing symposium

CONTINUED FROM PAGE 15

be as specific as possible within its specifications that vendors must adhere to for data submission).

And while CIHI's focus has been on secondary data use, collecting data in near real time is part of their roadmap beginning with community sectors, including child and youth mental health, home care and long-term care in 2018.

CIHI is working to make data more predictive and actionable. Each of these endeavours will enable the sharing of data between sectors and support the notion of "data collected once, used for many purposes".

A panel discussion provided organizational perspectives on data standards and included: Brent Diverty (VP Programs Division, CIHI), Chris Power (CEO, Canadian Patient Safety Institute), Julie Langlois (Accreditation Specialist, Accreditation Canada), and Lee Fairclough (VP Quality Improvement, Health Quality Ontario).

The messages delivered by the panel underscored the implications of collecting and using standardized clinical data for patient safety, quality of care, demonstration of "required organizational practices", and informing health policy and planning.

Much discussion ensued about the current "burden of data collection" on nurses in particular.

As noted by Pagliaroli and Gehrt (see

Canadian Healthcare Technology, June/July, 2017, p. 16), organizations do not always review existing clinical docu-

Organizations do not always review existing clinical documentation prior to layering more requirements.

mentation prior to layering more requirements for data collection.

Symposium attendees made a plea for the need to revisit nursing documentation in particular, to determine if all is really necessary and to not simply replicate the paper chart. We need to begin the process

of harmonizing clinical documentation within and across clinical settings. Again, adopting a minimum set of clinical data standards will reduce the burden.

Most of the symposium time focused on practice, administration, education, research and policy directions and strategies. Actions following from this year's meeting will include but are not limited to:

- Publication and dissemination of the e-Proceedings;
- Presentations and publications in a variety of forums;
- Creating virtual workspace communities for all work groups;
- Dissemination and use of the white-board animation;
- Continuing to engage various nursing stakeholder organizations;
- Develop concrete demonstration(s) of the adoption and use of clinical data standards supporting nursing practice.
- Continuing advocacy efforts with policy makers, funders, vendors among others.

The 2017 e-Proceedings will be available shortly, stay tuned.

And if you are interested in attending the 2018 symposium, please contact either of us directly; the planning has already begun!

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Beware of transcription vendors playing with word counts

CONTINUED FROM PAGE 17

effectively determines a vendor's life or death. Consequently, those who artificially inflate volumes to offer lower rates while still charging more per document prosper while many who stayed honest are now out of business.

The move to the VBC standard was, in large part, motivated by creative vendors who included credit in their contracts for "all characters that contribute to the final look of the document," which seems straightforward enough.

Unfortunately, this has allowed them to count the electronic data that defined which font to be used, where margins were set, and other document formatting issues that indeed "contributed to the final look of the document" but truly just inflated the expected volumes per report.

Whether selling technology only agreements for in-house staff or full service contracts with separated technology components, some vendors now include an "industry standard" volume to be credited per document for headers and footers. Lately, I've seen multiple contracts that refer to the "industry standard 15 lines of credit" per document for such content,

only no such "standard" has ever existed.

The impact of this particular shell game is significant. The average acute care document includes 50 to 55 lines, so crediting an extra 15 lines for headers and footers effectively inflates the document volume by 27 percent to 30 percent. Radiology reports average only 10 lines per document. All of a sudden, that tech savvy vendor's 10 percent to 15 percent lower line rate is not such a good deal, is it?

Conclusion: It's important to remember the lessons learned during the rush of EHR implementations. Separating IT and

HIM causes more organizational pain than it ever solves. It's time for HIM to take the lead, data analytics in hand, and do some house cleaning. If your vendor does not follow the AHIMA guidelines for clinical documentation quality management and best practices, or is charging for header and footer "industry standard" volumes, it's time you say game over.

Maria French is President of Terra Nova Transcription. The company is based in St. John's, Newfoundland and Labrador, and Tampa, Fla. <http://terranovatrans.com/>

Storytelling: Defending your hospital from hackers

CONTINUED FROM PAGE 13

brace it while understanding the risks that usage involves.

The peer review process is something that is common in the medical field, but we don't yet have the same checks and balances where technology is concerned.

This is a cultural shift that needs to happen. Healthcare professionals need to wade in and find out what the best prac-

tices should be, and then educate others.

In fact, imagine if they were as at ease on social media as celebrities who spread false and dangerously inaccurate medical information about everything from vaccines to diet fads. Healthcare professionals could be participating in public discourse to keep hearsay and fear from proliferating in that sphere.

The benefits of using technology far outweigh the risks as long as it's used prop-

erly. Storytelling is a neglected, but powerful security practice that can help motivate healthcare professionals to use technology to its fullest – and safest – advantage.

Jesse Hirsh is a Futurist and Digital Strategist who will be speaking about the design and ethical issues that need to be addressed when it comes to how technology is used in healthcare organizations at HealthAchieve in Toronto on November 6 and 7, 2017.

Dominic Covvey

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fection before I did, simply had already come to that conclusion!

In addition to my phalanx of mentors, I realized that I no longer really needed friends. This is a real efficiency-improving insight. I could shed all those who had from time to time helped me but also had burdened me with their issues, thoughts and suggestions. They were now obsolete and had been replaced by the incredible state I had achieved that amazing night.

I'm still a bit confused about that, because I see other people who say they have friends. But, when I look at how they relate with those "friends", they mainly act in their own interest. This ignited the powerful realization that their perfection had caused this. Their early induction into the state of perfection had freed them from all that wasted effort of listening and being helpful and kind and giving as much as they took. What a relief it must have been for them!

Since I turned perfect, when I actually do interact with "friends", I find that they are overly obsequious and seem to realize that I don't really need them. They also seem to be put off by my newly acquired high standards.

They can sense that I have no need to respect them any longer. Perhaps this will propel them to also enter this cloister of perfection – who knows – or cares! Now I'm hoping that some of my former friends are perfect so that they have a symmetric comprehension of how meaningless friends are to people who are perfect.

I have to admit that being perfect isn't everything. It's hard to find anyone worth relating to. There is also all that time that's now empty that used to be filled with fascinating reading and studying and conversation and thinking and like things. Unfortunately, I now get bored. Before I was perfect I was never bored. There was always a challenge. I always wanted to learn things. I always wanted to question people and hear their thoughts. Now, with the no need to do that, vast amounts of time are empty,

silent, and motivation-free.

Since that momentous occurrence of achieving perfection, I've also discovered that I've lost flexibility and adaptability. I no longer 'become' anything. My life is kind of over. I'm more crystal-like, limited and fragile. So I must be careful – and come to appreciate fragile perfection over organic adaptability.

Recently, I've made an unpleasant discovery: I'm not happy. Perfection is a

Maybe being perfect isn't everything it's cracked up to be. I think I'm going to return to what I was before.

prison. It is life without the living; a race without competitors; existing without needing and wanting ... or being satisfied.

So, I wanted to share with all of you that I have a new understanding of and an appreciation and respect for others of you who are perfect. I see that you need not waste time reading, conversing, lis-

tening, learning, wanting and so on.

However, I also must inform you that I have found, in my achieving perfection, that the value of all of these things has evaporated and I am not happy.

Happiness may be something that the rest of you perfect people are missing also. I am. Maybe being perfect isn't everything it's cracked up to be. I think I'm going to try returning on another night to what I was before.

Maybe we perfect ones should all try to go back. Maybe we should revive (or awaken or discover) the love to read and to engorge ourselves at the table of knowledge. Maybe we should hook up with mentors and form meaningful friendships; ask questions and think about their answers. Maybe that's the direction of true happiness. It certainly is the direction towards becoming a competent professional!

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