



CANADIAN Healthcare Technology

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DIAGNOSTIC IMAGING

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Advances in home care

Circle of Care, a provider of home care services, has been refining its EasyCare management system and now offers it to other agencies. It has advanced geo-locating, analytics, and more.

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Emergency alerts

Northern Health, in British Columbia, has implemented a messaging system that effectively sends information to staff across the organization during emergencies.

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Province-wide cardiology

Nova Scotia has integrated all of its ECG machines, so that data collected across the province flows into a centralized repository. The computerized system enables clinicians to quickly see and analyze results.

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PHOTO: COURTESY TECHNOLOGY & THE FUTURE OF HEALTH CARE

Dr. Darren Larsen, chief medical officer at OntarioMD and a family physician, explained how the new i4C dashboard works in a presentation to doctors at the recent Technology & the Future of Healthcare Care conference, in Hamilton, Ont. The innovative system can be used with several popular EMRs, and allows doctors to provide better care to their patients and to rate their own performance.

Dashboard enables doctors to analyze EMR data

BY JERRY ZEIDENBERG

TORONTO – Physicians collect an enormous amount of data about patients, and they log much of it into their EMRs each day. Nevertheless, doctors may sometimes forget to record certain items – such as whether a patient is a smoker or is due for diabetes screening.

And if they do chart the data, they might not code correctly – in a way that allows them to bill properly or find and use the information in the future. Finally, even if they get everything right, they might not be actively mining the data, so they know when to prompt their patients for screenings or tests.

“We need to derive more insights from our data,” said Dr. Darren Larsen, Chief Medical Officer at OntarioMD and a family doctor. “We need to gain wisdom from it.”

Dr. Larsen recently spoke at the IoT Big

Data Healthcare conference in Toronto, and at the Technology & the Future of Health Care conference in Hamilton.

“If physicians made greater use of the data in their EMRs”, he said, “analyzing it regularly, substantial gains could be made in the quality of care. Patient outcomes would improve, and by making sure they’re screen-

Doctors can drill down to find out which of their patients need screening or tests.

ing properly, physicians could claim financial incentives they may otherwise miss.”

For these reasons, OntarioMD led the development of an EMR-integrated dashboard tool that shows doctors, at a glance, where there is opportunity to improve and take action – both in the quality of the data they’re collecting and the care they’re providing to patients.

Called Insights4Care (i4C), the system currently runs on three EMRs – OSCAR, TELUS Med Access and TELUS PS Suite – but more are on the way. OntarioMD provided access to the i4C Dashboard to 500 physician users over the past two years as part of a proof of concept, and the Ministry of Health recently gave the go ahead to implement the tool on a province-wide basis.

The i4C Dashboard is graphics-based, with EMR data presented as bar charts and pie charts that are easily read – much like the dashboard on a car. And while it aggregates patient data, it is the only dashboard tool that gives doctors the ability to drill down to the individual patient level to quickly find out which of their patients need preventive care measures like screening or tests.

“When you show doctors the system, and how to use it, you see improvements [in

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OntarioMD led the development of EMR-integrated dashboard tool

CONTINUED FROM PAGE 1

their practices] within 90 days,” Dr. Larsen said.

Indeed, an assessment of dashboard data, conducted in 2018 near the end of the proof of concept, revealed the following improvements in participating doctors’ data quality just 90 days after training:

- Patients with diabetes coded increased by 4.3%
- Patients with smoking status recorded increased by 3.2%
- Patients with colorectal cancer screening up-to-date increased by 2.9%
- Patients with hypertension coded increased by 2.8%
- Patients with BMI recorded increased by 2.8%
- Patients with breast cancer screening up-to-date increased by 2.3%

These improvements in data quality enable proactive care for patients who were not previously identified as needing attention and can make a difference to patient outcomes.

When the dashboard was first launched about a year and a half ago, it started with

17 clinically relevant primary-care indicators. That number was soon boosted to 30.

Examples include:

- Body Mass Index (BMI)
- Breast cancer screening (up to date)
- Coronary artery disease (coded)
- CAD (up to date)
- Cervical cancer screening (up to date)
- Childhood immunizations (up to date)
- Colorectal screening (up to date)
- Diabetes coded and screening up to date
- And more.

“There are 70 more indicators to come,” said Dr. Larsen. “We had a total of 200 in mind, but we chose 70 to add in the immediate future, keeping in mind that more measurement is not always better. Better measurement is better.”

While most physicians have found the idea of the system to be interesting and useful, some have balked. There are three reasons for this, all of which may be true.

“The data is wrong is their first response,” said Dr. Larsen. “This may be true, but the data comes from them, so they quickly see the opportunity to make it better.”

Next, they say their patients are different, which may also be true – they may



Dr. Darren Larsen explains the benefits of i4C at the recent Tech & the Future of Health Care 2019 conference.

have a high number of high-risk patients or many who shun vaccinations, for instance. This explains variance.

Thirdly, they say that their practice is different. However, “This is a reality for all practices, but when you combine that with practice advice, coaching or peer leadership, positive change can occur.”

“If the data is there, you can work with it,” asserted Dr. Larsen.

And despite these variations, most patients will require similar treatments. In certain situations, virtually everyone will need blood-work or a tetanus shot, no matter their origins or beliefs.

On the topic of patients who are behind in screening, said Dr. Larsen, “the tool enables you to quickly identify and group them for outreach; they could be invited in for education sessions, to help them understand the history and value of the recommended tests and procedures”.

In offices that have already adopted the dashboard, it’s not only physicians who are using it. Nurses, administrative staff, clinic managers and executives, and IT staff have also been working with it to gain insights.

Another important aspect of the dashboard is that it allows doctors to compare their performance with their peers who are also using the tool and have opted in to share aggregate data. So, for example, they can see how other physicians are doing when it comes to capturing data correctly or screening for various diseases.

“That, in itself, is a huge nudge for improving quality,” said Dr. Larsen. Physicians who might be lagging in one area will usually want to catch up with their colleagues when shown the difference.

“We as doctors are inherently competitive...we want to be the best,” said Dr. Larsen. “We should tap into that competitiveness, that spirit of wanting to do better. Better than myself, and better than my peers.”

It’s this desire to excel that can be harnessed to improve the delivery of care. By sharing information, physicians can get a better idea of their performance and where to improve. And that’s just what the dashboard allows them to do.

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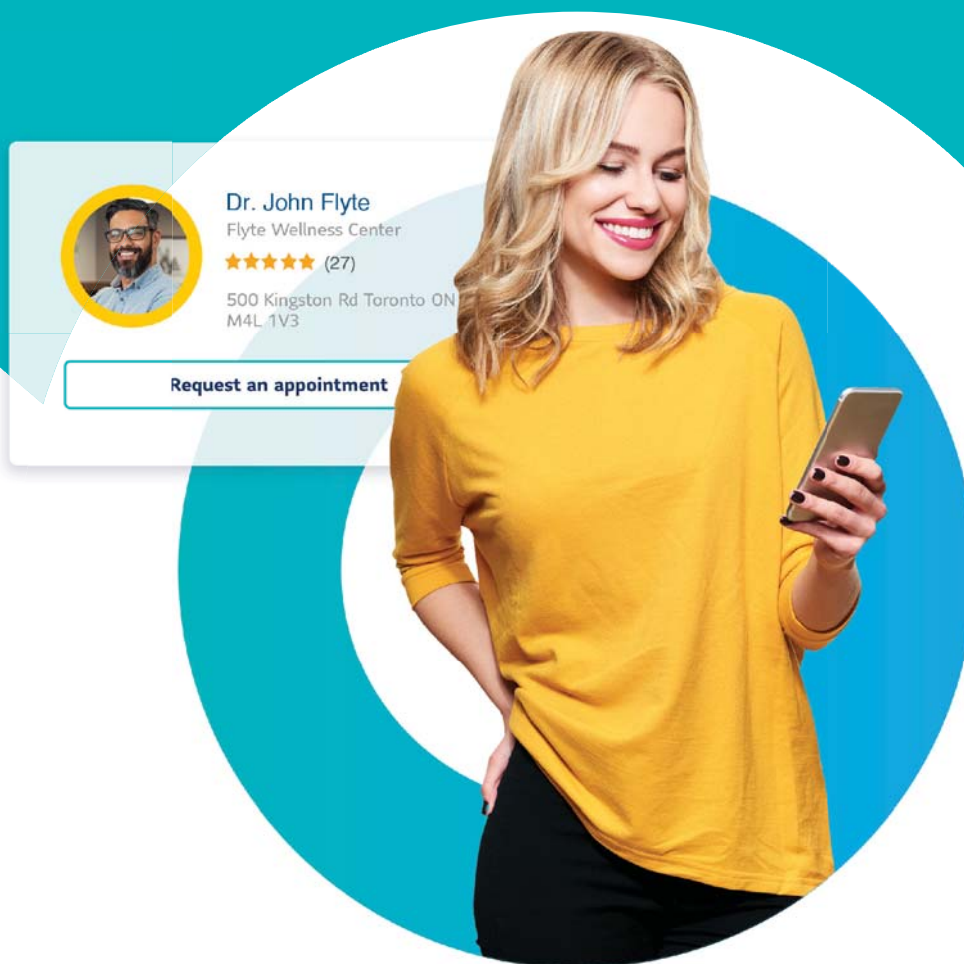
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Toronto-based Circle of Care agency advances home care technology

BY JERRY ZEIDENBERG

TORONTO – Circle of Care, an affiliate of Sinai Health System, certainly punches above its weight when it comes to innovation and effectiveness of its information technology. The Toronto-based home care agency, which serves clients at home and in residential care across four regional LHINS in Ontario – has developed a high-functioning electronic records system that it started offering to other agencies last year.

The solution, a new and improved version of its EasyCare™ platform, has helped make Circle of Care more efficient and effective. For example, it's challenging to monitor whether a mobile workforce, spanning large geographies, are delivering services when and where they're supposed to be.

The GPS on a mobile phone can supposedly tell you if a person is at a certain address, and this is what most home care organizations have traditionally used to verify that a nurse or support worker has visited a client.

However, the geo-location capabilities of phones aren't that granular. While they can tell you whether your caregiver is at a certain address, they can't tell you, for example, whether he or she is in the ground floor lobby of an apartment building or on the 12th floor, where the client lives.

To resolve this issue, Circle of Care started installing beacons – small sensors that use Bluetooth to communicate with phones – in the apartments and homes of its clients. The beacons connect with phones and are able to confirm whether the visiting care worker has entered a room, and for how long.

That data is uploaded in real-time, allowing EasyCare to compare the geo-location to beacon data.

At the outset, when Circle of Care compared the geo-location data of workers'



Vin Singh, VP at Circle of Care, noted the agency's EasyCare platform has advanced geo-locating features.

phones with the information collected by the beacons, several discrepancies were noted. In other words, some care workers weren't visiting when or where they said they were.

Not only were these care workers being paid for time they hadn't spent with clients, the clients weren't receiving the care they needed – a significant safety issue.

Vin Singh, Vice President of Information Systems and Technology at Circle of Care, and Carey Lucki, CEO of Circle of Care, and a VP with Sinai Health, spoke about the organization's commitment to improving quality through technology at the annual IoT Big Data Healthcare Summit, held in Toronto in June. (<https://iotevents.ca/event/healthcare-2019/>)

The use of beacon technology has helped lift the veil of mystery about whether visits took place, commented Lucki. "It has become particularly helpful in situations where clients won't call to report that they didn't receive the care they

were supposed to get. Often they are afraid to call for fear of offending their caregivers, or they may be physically or mentally unable to make the call. Beacon technology ensures that we are providing safe, accountable care and that our clients remain our top priority."

The use of beacon technology at Circle of Care is just one example of advances in technology that are occurring at the organization.

In 2016, Lucki observed, the drive to update and improve the IT infrastructure first started. "IT became a strategic priority and investments were made in the existing EasyCare platform to greatly extend its capabilities. Following that, in 2017, we made an investment in mobile apps for caregivers and clients. And now we are in the process of creating and trialling an app for our 1,000-plus volunteers."

The mobile apps continue to evolve and adapt to the needs of clients, their caregivers and staff. The worker app allows

PSWs to confirm arrival and departure, the delivery of various tasks (care plans) and it supports electronic signatures. In addition, workers can order supplies, request time off and securely receive messages.

By using beacons, geo-locating on phones and electronic signatures, the agency now has a "three-factor" verification process – important features that are required as part of auditing for some of Circle of Care's funders.

However, the upgrade to its in-house EasyCare platform has been most exciting for the organization. Singh outlined the abilities of Circle of Care's fully electronic system. "It offers scheduling, assessments, case notes, billing and care planning for patients. On the staff side, it has attendance management, reporting, supply management and secure messaging."

EasyCare is also able to connect to other applications such as CHRIS, the provincial continuing-care reporting system, as well as IAR and to Trapeze, for arranging transportation services. It even has single sign-on to Connecting Ontario, the provincial viewer, so authorized staff can see a patient's charts when there have been hospital visits or test results.

Singh described how Circle of Care built risk management and quality improvement features into EasyCare. "We data-mined a year's worth of case notes and looked for important keywords, like "fall" and "abuse".

He observed that these are serious issues – falls for seniors, and the risk of harm for caregivers when clients are abusive. Even if these items were logged as notes, in the past, they haven't always been reported or followed-up on.

Now, however, the case notes are automatically scored, and highlighted issues are reported to management. They're then turned into action items – case managers are assigned to look into the problems and to fix or mitigate them.

The health of interoperability in Canada: survey results

BY DR. CHRIS HOBSON

As patients demand greater access to their health data, and healthcare professionals require seamless integration of information to provide high-quality care, the need for healthcare organizations to share information only intensifies.

An Angus Reid survey of 150 digital health professionals was recently commissioned by Orion Health and shared with Canadian Healthcare Technology readers, taking the collective pulse on the state of healthcare interoperability in this country.

Proof that interoperability works: When asked about the biggest benefits organizations have seen from interoperability, six-in-10 (59%) respondents said effective care, and about half (52%) said they have seen improvements to patient safety. Improved accuracy of medication information came in next, followed by cost sav-

ings through reduced duplication of lab and radiology tests and prescriptions.

When asked which of the following data types were being exchanged electronically, two thirds of respondents (66%) answered laboratory results, which was virtually tied with patient demographics (64%). Next up were clinical documents (such as referrals, discharges, clinical assessments), radiology reports and medication data (such as opioids and other controlled substances). Overall, nearly six-in-10 organizations exchange data with a provincial Electronic Health Record.

Additionally, six-in-10 respondents said their future plans for interoperability include e-referrals, along with clinical documents (such as discharges, clinical assessments, etc.). After that, the top responses were patient-generated data, medication data, behavioural health data and finally, non-traditional data such as genomics or social determinants.

Breaking down the barriers: There are

a number of barriers limiting the electronic exchange of health information, including financial barriers (cost of development, payment models for physicians and an inability to access budgets); technical barriers (poor end user experience, lack of agreement on standards and poor data quality); and trust or legal barriers

Nine-in-ten respondents say that additional government support would improve interoperability efforts.

(privacy issues and data blocking). All of these inhibit adoption of interoperability.

What is driving healthcare innovation investment? The top drivers for investment in interoperability rank as follows: care coordination, provincial government mandates, clinician demand, patient benefits, a desire to connect

community care with primary and acute care and finally, patient safety.

The technical levels of interoperability: When asked to describe the state of interoperability at their healthcare organization, seven-in-10 responded it was foundational (a level that allows data exchange from one IT system to another but does not require ability to interpret data).

Half responded they have achieved structural interoperability (ensuring data between IT systems can be interpreted at the data field level). Finally, three-in-10 answered they had achieved semantic interoperability (the highest level, enabling systems to exchange and use information in downstream clinical care processes).

Interoperability standards help stakeholders exchange electronic health information, impacting the quality and cost of care, and ultimately outcomes. There

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SnapComms tool creates “unmissable” emergency updates for staff

BY ANNE SCOTT

It was fall 2017, and Northern Health (NH) realized it had to make a change. That summer, hundreds of people had flooded into northern BC to escape wildfires in the Cariboo and Southern Interior regions of the province.

For more than six weeks, NH hosted more than 300 evacuated hospital patients and long-term care/assisted living residents – and handled almost a thousand clinic and hospital visits by evacuated members of the general population.

During this chaotic time, NH leaders regularly updated staff and physicians via email. But most frontline staff use shared computers, and logging in can be time-consuming; the result is that many rarely check email.

And, there was no way to make urgent wildfire updates really stand out. “The fire messaging tended to get lost in people’s inboxes,” says Brandon Spyker, Intranet Specialist at NH.

As Jim Fitzpatrick, Director, Health Emergency Management BC, North, observes: “Staff and physicians said that during the wildfires, they hadn’t felt fully informed about the changing situation. We needed a better way to reach them during emergencies.”

As a result, NH Internal Communications and Health Emergency Management BC, North collaborated to explore options. After some research, they chose SnapComms, which provides alerts that help make priority messages virtually unmissable.

“We picked SnapComms because of its real-time analytics, the way it gives you



The Northern Health SnapComms team. L-R: Laura Johnson, Project Coordinator, Service Delivery; Jim Fitzpatrick, Director, Health Emergency Management BC, North; Anne Scott, Regional Manager, Corporate and Program Communications; Brandon Spyker, Intranet Specialist. Unavailable for photo: Amber Frizzi, Coordinator, Health Emergency Management BC, North.

several different ways to get employee attention, and because it’s used by more than 150 health care organizations, including the NHS in the UK, and some Ontario hospitals,” said Spyker.

Other considerations were that SnapComms stores its data in Canada, and that its messaging can target specific communities (facility targeting is in the works).

After being reviewed by four NH teams – Privacy, Technology, Security, and

Telecommunications – the SnapComms project received the green light for a pilot. Working with Hope and Hoppen, the Canadian representative for SnapComms, the NH team arranged a multi-day pilot in the town of Quesnel for September 2018.

Using a combination of neutral test messaging and a mock bus crash scenario, the team sent messages such as the following: “To all staff and physicians: Greyhound bus crash 40 km south of Quesnel.

Unconfirmed fatalities at scene. More information to follow.” The messages popped up on NH computer screens, in front of any open applications. After reading the messages, users could easily close the messages and return to their work.

All 314 NH computers in Quesnel took part, with the more realistic messaging targeted to a smaller group to avoid creating panic. After the pilot, Quesnel staff members and physicians were surveyed, with 73.5% describing SnapComms as either “extremely useful” or “very useful.”

“It was in your face, visible, unlike an email, which many people ignore,” said one staff member.

Staff also ranked SnapComms as more effective than phone calls, email, social media, NH websites, the NH intranet – or even in-person communication.

“I liked that SnapComms was not intrusive to what you were doing, but it was enough that you were aware that something was going on,” said Adele Bachand, NH’s Regional Manager, Healthy Settings, Public Health Community Development.

In spring 2019, NH purchased SnapComms, rolling it out in May to all 5,000 corporate laptops and desktops (excluding a small number of dedicated clinical computers, where an emergency message could disrupt patient care.) A test message to all staff was successfully sent on May 23.

“We chose the private cloud hosting option because personal information, such as staff phone numbers, will be stored in the SnapComms database,” says Laura Johnson, NH Project Coordinator, Service Delivery, who led the IT portion of the project. “It’s a private, fully isolated server dedicated to Northern Health.”

PHOTO: DARREN SMIT, SMIT PHOTOGRAPHY

Headwaters advances patient engagement through bedside terminals

BY STUART SOLWAY

ORANGEVILLE, ONT. – Headwaters Health Care Centre has partnered with HealthHub Patient Engagement Solutions to launch The Hub – a digital platform that brings the electronic medical record (EMR) to the bedside and allows patients and families to actively participate in their care and engage with their care providers.

Headwaters Health Care Centre (HHCC) is a medium-sized acute care hospital located in Orangeville, Ontario, offering 24/7 emergency room services, as well both inpatient and outpatient services.

Historically, HHCC provided patients with bedside cable television entertainment services during their hospital stays.

Prior to the entertainment contract’s renewal with a third party, the team at Headwaters saw an opportunity to move in a new direction.

“We wanted to improve our patients experience during their hospital visit by giving them access to an entirely new digital platform,” said Peter Varga, Vice President of Patient Services and Chief Nursing Executive at Headwaters. “This digital

strategy would provide real-time access to information and documentation tools at the bedside for all users and enable our digital platform to allow patients to play an active role in their care planning.”

Headwaters assembled a committee comprised of individuals from a variety of hospital disciplines – including doctors, nurses, human resources professionals, pharmacists, finance managers and patients – to pull together a wish list for its vision of the ideal digital platform. Then, it collaborated with HealthHub Patient Engagements Solutions to make it all happen.

“Headwaters had an excellent idea of what was valuable to them right now, based on all the feedback they were able to garner from their project stakeholders,” said Paul Hemburrow, Chief Customer Officer at HealthHub. “What we brought to our initial discussions, was an experienced point-of-view on the future and the wide gamut of tools they might want to consider introducing on their platform down the road.”

In the fall of 2018, HealthHub installed the first set of interactive bedside terminals (IBTs) in the hemodialysis unit with a total of five IBTs available for pa-

tients and staff to use. Three applications were initially available for immediate use. Perhaps most notable, was the education module which enabled patients and their families to access relevant health-related information in real-time at the bedside.

The patient survey module allowed patients to provide their feedback regarding their care and the entertainment module provided an enhanced selection of bedside entertainment options, in-

Being able to document at the bedside allows patients to work together with nurses, and to discuss their care.

cluding a wide range of popular television channels, games, and internet.

HealthHub’s solution also fostered greater connectivity within the unit. The IBTs, known as the Hub, were connected to the facility’s MEDITECH hospital information system (HIS), essentially turning the device into a bedside documentation station that clinical team members could access just by scanning their identification badges on the back of the device.

For nurses, this meant they could do all their hospital admission and assessments in the patient’s room on a virtual, local desktop rather than having to complete this at the nursing station or with workstations on wheels. It also fostered more discussions with the patients and families as documentation was completed.

Jennifer Bourne, a Clinical Resource Nurse at Headwaters pointed out: “Access to the hospital’s HIS eliminated the issue of double documentation. That’s where a nurse would have to write information on a piece of paper and then go back and find a computer later, so they could document that information in the patient’s electronic medical record. Having the IBTs at the bedside now has become that electronic notepad, so nurses don’t have to write it down anymore, it’s right there.”

In addition, she mentioned, “Being able to document at the bedside allows patients to work together with nurses to discuss their care and collaborate with them.”

From HealthHub’s perspective, the entire platform was a turnkey solution that used the same infrastructure that powers the hospital’s virtual applications.

Lewis Park, Manager of Information

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OpenText steers toward cloud-first solution, with an emphasis on AI

BY DAVE WEBB

OpenText Corp.'s flagship enterprise information management software will be designed for "cloud-first" delivery in future, its CEO announced at the recent OpenText World

user conference in Toronto. And the company is positioning itself as an artificial intelligence enabler, with applications in the world of healthcare, the chief of its life sciences division said.

Launched in 1991 in Waterloo, Ont., the EIM giant has never been cloud-native,

CEO Mark Barrenechea told users, developers and partners at the conference. But beginning with OpenText Content Suite R16, the product will be offered as a cloud-first application suite offered on a subscription basis.

While it will run on any platform,

Google Cloud will be the "preferred strategic partner."

The suite will be "containerized," packaged with all its underlying dependencies and software infrastructure, allowing portability from platform to platform and the ability to run the suite on-premise, as the majority of OpenText customers do now, Barrenechea said.

Barrenechea said the volume of data now routinely collected by enterprises is changing their roles: They are all now information companies.

He cited the example of a payroll company. Given the volume and nature of the data it handles – income, address, work history, career trajectory – it can also be an income distribution analytics provider. Automakers who install comprehensive telematics that collect driver behaviour data can leverage that information like an insurance company.

"We are in a post-ERP (enterprise resource planning) era," he said. "Automation is not enough." Machine-readability is key to creating new insight- and decision-driven businesses.

Visibility: Ferdi Steinmann, the company's global life sciences industry strategist, outlined how this machine-readability could play out in healthcare, from medication that helps a system track compliance to the distribution of life-saving medicines. The technology would have been very helpful in one instance from his days with pharma company Merck, he said.

The company was distributing vaccines to combat an outbreak of rotavirus in Nicaragua. A particularly pernicious and contagious illness, rotavirus causes severe diarrhea and dehydration, which can be debilitating for adults, but fatal for infants and young children.

The vaccine must be stored at two to six degrees Celsius to prevent its shelf-life from being compromised.

The storage temperature was recorded at many junctures of the journey, but while in transit, there was no visibility into storage conditions once delivered. Crucially, the shipment sat on the tarmac at an airport in Nicaragua.

The shipment had reached nine degrees, but workers didn't know for how long. It took a frantic manual search of records and application of algorithms to determine the viability of the vaccine.

"It worked out in the end," Steinmann said, but with current "Internet of Things" (IoT) data collection technologies – embedded temperature sensors and GPS locators – crews could have been on hand to expedite the process, preserving the effectiveness of the vaccine.

Better data: Any applications of artificial intelligence or machine learning are dependent on data collection, said Mike Gualtieri, vice-president and principal analyst with Forrester Research Inc.

"Algorithms get all the press, but it's the data that leads to success," Gualtieri said. "Data is a huge prerequisite for AI success."

Machine learning algorithms analyze data to create models to predict outcomes. There are a finite number of algorithms, and data scientists tend to have their own preferences for algorithms, he said.

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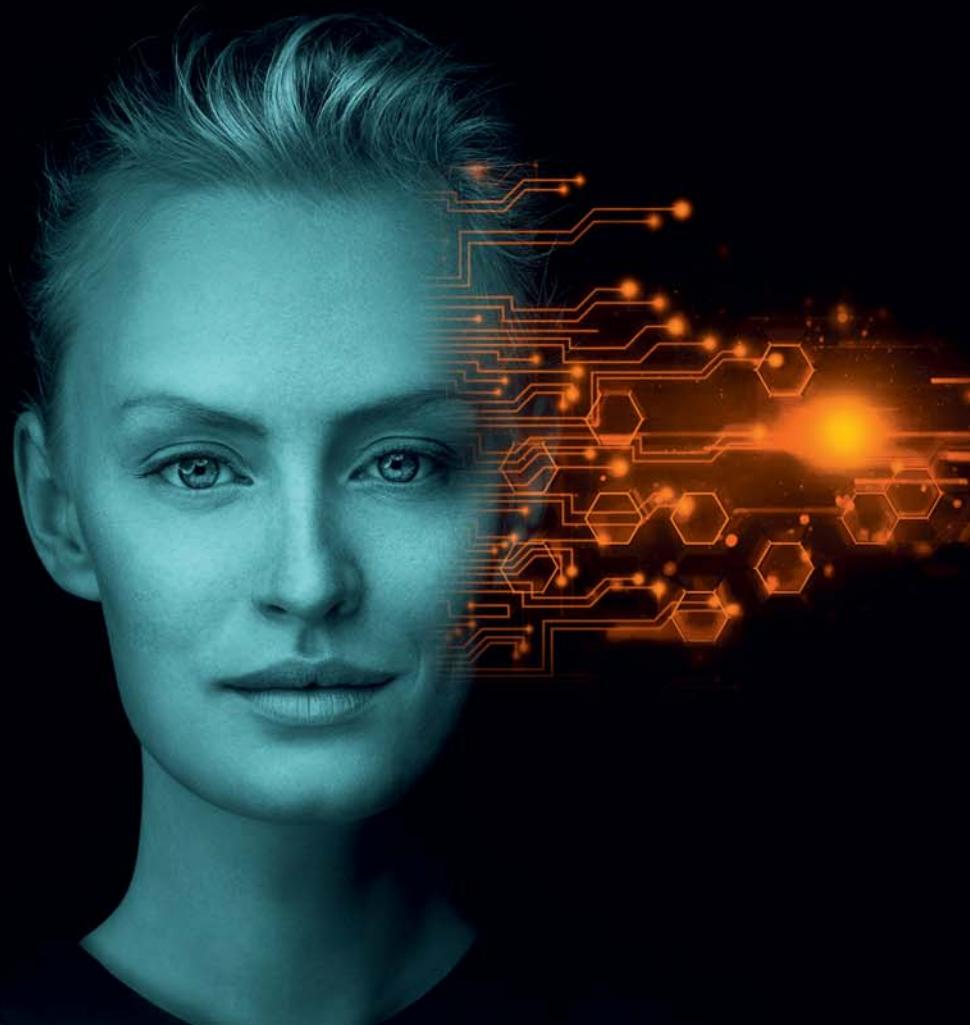
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siemens-healthineers.ca/atellica-diagnostics-it

1. Wen D, et al. Establishment and application of an autoverification system for chemistry and immunoassay tests. 69th AACC Annual Scientific Meeting Abstracts. 2017.

2. Columbus Regional Health leverages informatics and automation efficiency. Siemens Healthcare Diagnostics Inc. 30-19-13821-01-76. 2019 May.

New laboratory system in Edmonton automates testing at high-speed

EDMONTON – DynaLIFE is the first healthcare facility in Canada to install the Atellica laboratory system from Siemens Healthineers – and according to the company, it is also one of the world's largest implementations of the new and advanced technology. The solution provides the lab with flexible, scalable, automation-ready immunoassay and chemistry analyzers.

“With the installation of the Atellica Solution, we are able to run 7,500 tubes a day,” said Jason Pincock, CEO of DynaLIFE. “We currently perform approximately 18 million tests annually across all departments at our Edmonton referral lab location. The Atellica Solution will eventually enable us to run more than 12 million additional tests each year.”

Atellica is comprised of sample management as well as immunoassay and clinical chemistry analyzers and is an excellent fit for mid-and high-volume labs.

According to Siemens, it delivers unprecedented flexibility to adapt to changing testing needs and space constraints. The solution can combine up to 10 components into more than 300 customizable configurations including linear, L and U shapes.

It can operate as a stand-alone system or connect to Aptio Automation to provide a comprehensive, multidisciplinary testing solution that could include clinical chemistry, immunoassay, hemostasis, hematology, and plasma protein analyzers.

DynaLIFE is the first in Canada to connect the Atellica Solution analyzers to Aptio Automation with third party analyzers also running on the automation line, creating a uniquely customized offering to meet DynaLIFE's testing needs.

Aptio Automation enables improved utilization of lab resources, increased efficiency, accelerated processing, and consis-



Pictured (L-R): Norma Page, VP, DynaLIFE; Lana Sammut, Siemens Healthineers; Luc Lavoie, Interim VP, Siemens Healthineers; Ruth MacPhee, Siemens; and Matt Coughlin, Marketing Director, Lab Diagnostics, Siemens.

tent turnaround time for test results by combining intelligent technologies with Siemens Healthineers workflow expertise.

Having operated in Canada for over 50 years, DynaLIFE provides diagnostic laboratory services to more than 2,000 physicians and supports 2.1 million community patient visits annually. In addition, DynaLIFE also provides testing for acute care and hospital patients from across northern Alberta.

Its services are provided by approximately 1,200 laboratory employees working at 35 sites including hospital laboratories, community patient care centres, and its central testing laboratory in Edmonton, Alberta.

“The Atellica Solution simplifies laboratory operations through intelligent sample management,” said Lana Sammut, Solutions Specialist – Automation, Chemistry and Immunoassay, Siemens Healthi-

neers. “It can process more than 30 different sample container types, including pediatric and tube-top sample cups that can be aspirated from the primary tube.

“Further, by using the same reagents and consumables across different analyzer configurations, laboratories can streamline inventory and deliver consistent patient results no matter where patients are tested.”

One key feature is the Atellica Magline Transport, the patented bi-directional, magnetic transport technology that is 10 times faster than conventional sample conveyors, and provides innovative and unique sample management capabilities. The transport technology, together with a multi-camera vision system, intelligent sample routing, as well as automatic quality control (QC) and calibration activities (no daily hands-on), give laboratories independent control over every individual sample – from routine to

STAT – to deliver rapid, high quality patient results to clinicians.

Powering the Atellica Solution is a comprehensive menu of 175 assays, including 10-minute turnaround times for key cardiac, reproductive and thyroid tests, with 32 more assays in the pipeline. The immunoassay analyzer features a patent-pending dual incubation ring design, temperature and humidity controls of the reaction environment, powerful magnets for relevant particle separation and robust washing protocols – all of which enable delivery of rapid, high precision results.

Digital capabilities such as auto verification and automated inventory management also help reduce cost. By auto verifying 92 percent of results, one hospital lab decreased manual labour while reducing errors by 74 percent. Another hospital reported time savings of 35 percent associated with automated inventory management.

DynaLIFE is the largest Atellica Solution automation site in the world as of early 2019, running 7,500 tubes in a single day.

“This installation will see three Atellica SCLs installed, comprising a sample handler, a CH 930 Analyzer and a IM 1600 Analyzer, which are connected to Aptio Automation in our Edmonton lab,” said Pincock. “In addition to the Atellica Solutions, we have also connected the Roche Cobas 8000 automated system to the Aptio automation.

“This is the first time such an automated system has been installed in North America and will further ensure DynaLIFE lives up to its mission of making a difference in people's lives through excellence in medical laboratory testing, diagnostics and customer care,” Pincock added. To find out more about the Atellica Solution: <https://www.healthcare.siemens.com/integrated-chemistry/systems/atellica-solution-analyzers>

Accessing the right information is still problematic in healthcare

BY ZENA RYDER

KELOWNA, BC – Communication between healthcare providers can literally be a matter of life and death.

Sue and her family know this all too well. One afternoon, Sue had been visiting her mother, Sylvia, who was in hospital recovering from an infection that arose during her cancer treatment. Sylvia mentioned she had a craving for a maple dipped doughnut. There was a Tim Hortons not far from the hospital, so Sue went to get one, leaving her mum resting comfortably.

When Sue returned, she found her mum unconscious, slumped over and drooling. Frantic, Sue rushed to track down the on-duty nurse. She became even more frantic when she couldn't find her.

There had been a shift change and now a different nurse was on duty, so Sue hunted for her. Eventually, she found the nurse and they hurried back to her mum's room. The nurse was visibly shaken by Sylvia's condition, and quickly checked

her vital signs and summoned a doctor.

As the afternoon wore on, Sylvia drifted in and out of consciousness and the group of medical staff grew larger. Eventually, a doctor said, “You should probably gather your family, Sue”.

This story illustrates a theme that ran through the presentations about data and AI at the 19th Annual International Healthcare Summit, held in Kelowna in June. As Dr. Denise Heaney put it in her presentation, “No matter what we do, there's a patient at the end of it. It's really important to always remember that.”

What had happened to the patient, Sylvia? It turns out there had been a miscommunication and the nurse who went off duty gave Sylvia her pain medications just before leaving. Then the nurse who came on duty also gave Sylvia her pain meds. Sylvia received two doses of her medications about half an hour apart, resulting in her becoming unconscious while her daughter had stepped out of the room.

Fortunately, Sylvia eventually regained consciousness when naloxone

was administered, and she recovered from this experience – although she died from her cancer a few months later.

This traumatic episode was related by Sue Paish, CEO of Canada's Digital Technology Supercluster. Sylvia was her mother.

Paish said, “If there had been an effective use of data, and it was clear when

Integration of information sources is at a different state of maturity, and varies among facilities and jurisdictions.

medications had been administered so nurses didn't need to search through notes, then there's a good chance my mum would not have received two doses so close together.”

This is one example of a healthcare organization not making good use of data. Summit presenters touched on others, both in their presentations and during later follow-up conversations.

Dr. Denise Heaney is the Senior Scientific Affairs Manager, Diagnostics Information Solutions, at Roche Diagnostics. In her presentation, Dr. Heaney talked about tumour boards – meetings at which doctors and other healthcare providers discuss a cancer patient's case and recommend a course of treatment.

Dr. Heaney described software that improves how medical data is collected, stored, integrated, and accessed by the healthcare team. Using the software improved how specialists spent their time prior to making a recommendation at a tumour board.

She said pathologists were able to focus more on pathology and perform fewer non-pathology tasks. The surgeon, oncologist, and radiologist were able to spend more time reviewing pathology reports. Better use of specialists' time is, in the long run, likely to lead to better decision-making for patients.

The President and CEO of Life-Sciences BC, Wendy Hurlburt, agreed that effective sharing of medical data is

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If you are employed by a hospital, which of the following categories would best apply to you?

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Nova Scotia patients and clinicians benefit from integrated ECG system

In recent years, Nova Scotia has built a province-wide, integrated system for storing and sharing electrocardiograph (ECG) results – the only jurisdiction in Canada to achieve this milestone. With ECG data available electronically, healthcare providers no longer have to wait for patient data to be entered or faxed. That's meant the province's cardiologists, along with other authorized clinicians, can access results anywhere, anytime – enabling them to make faster diagnoses.

"There's been a noticeable improvement in turnaround time," said Paul Verboom, Senior Systems Analyst at Nova Scotia Health Authority (NSHA). He noted that tests can be done at any one of 35 sites around the province (including the IWK Health Centre), and clinicians can access patient results at their convenience from any location.

Leigh Brennan, Senior Systems Analyst at NSHA, observed that cardiac technologists have experienced an evident improvement in their workflow, especially at centres that were previously paper-based.

"It was quite a lengthy procedure just to process an ECG," with many steps – including filling out accompanying paperwork, filing and sending to the appropriate clinician. "We found that with less paper, there was reduced potential for errors (which could result from manual data entry) and reports were being read much faster by the physicians," she said.

During the process of planning and designing the system, a conscious decision was made to use MUSE technology, supplied by GE Healthcare, to ensure that all 12-lead electrocardiograph machines could be easily connected.



After training on the new electronic solution, called the Nova Scotia Electrocardiology System (NSES), much of the work was automated.

Sandra Colavecchia, NSHA Information Management and Technology Manager for Medical Imaging, indicated that the system first went live in 2013 and that it took about a year to ensure that each of the 35 sites was connected. Today, across the province's healthcare system, approximately 1,000 ECG test results flow into the MUSE system each weekday and about 500 a day on weekends.

Results from Holter monitors – portable monitors that are attached to patients and carried around for 24 to 48 hours – are linked into the network, as are stress test re-

sults. Historical ECG data, dating back to 1995, was also integrated into the MUSE system, allowing physicians to compare new results with older tests when needed.

The MUSE system has also been integrated with the hospital information systems (HIS) used across Nova Scotia, meaning that orders can be generated directly from health information systems to the ECG cart, so the information is there for the technologist.

The ECG images that are generated – essentially waveforms – are saved in the centralized MUSE database and as PDF files in a PACS archive. Moreover, the results are sent back to the HIS for distribution to the ordering physician. The bottom line is that the data can be quickly obtained by clinicians when and where they need it.

Researchers have also benefited from the computerized MUSE system. To date, the archive has accumulated about 2.6 million ECGs, creating a valuable resource for clinicians and researchers.

Prior to the system being implemented, bundles of paper test results would be delivered to researchers. Now, they receive anonymized computer data. They don't have to handle paper files or re-enter data, which has meant savings in time and effort and improved accuracy and efficiencies.

Verboom noted that for other jurisdictions seeking to create an integrated ECG system, it's important to make sure there is a common identifier for patients. That way, results for patients with similar names or health card numbers won't be confused.

"We invested a fair bit of time in this," said Verboom. With multiple sites participating across the province, and hundreds of thousands of patients, it was important

to ensure that systems were in place to detect differences among similar looking records and IDs.

Complicating this further is the treatment of patients from out of province, which can sometimes occur. For instance, Nova Scotia and Ontario both have patient IDs with the same number of digits. A computerized system has to be able to detect and flag rare instances where different patients present with the same names and numbers.

"You also need the right people skills for this," said Verboom. Staff involved must have familiarity with patient demographics and database tools, he explained.

The successful development of Nova Scotia's Electrocardiology System has led to an improved experience for patients, healthcare providers and researchers and contributed to a more effective healthcare system. More importantly, it has created the potential for improved patient outcomes as providers have access to more timely and comprehensive results to better support clinical care decisions.

OpenText steers toward cloud-first solution

CONTINUED FROM PAGE 8

Algorithms create models based on correlation, not causation; they solve for the variables between input and outcome. For example, he said, divorce rates in Maine are directly linked to margarine consumption – that is clearly not a causative relationship.

Data scientists work with the algorithms that best explain the correlation between inputs and outputs, tested against a training data set in which 70 percent of the data is modeled to correspond to the remaining 30 percent.

There are caveats to this kind of modeling, Gualtieri said. The AI infrastructure created for machine learning has to be preserved in perpetuity; the performance of machine learning models can decay over time, requiring retraining.

Voice recognition might not be able to distinguish between, "This machine can recognize speech," and "This machine can wreck a nice beach," but a visual cue of a bulldozer can tip the balance. Humans must be in the loop, Gualtieri said: If a model is 86 percent accurate, human intervention has to protect the other 14 per cent.

Risk tolerance: That tolerance for risk when dealing with healthcare issues is zero, Steinmann said. But trends in healthcare and life sciences are driving business cases for AI, where there is always some form of risk. "The aging population and rising healthcare costs is a dangerous mix," Steinmann said. Data is being generated on the scale of zettabytes (a zettabyte is the equivalent storage capacity of 23.5 billion Blu-ray disks). "Yet, we still can't get a clear picture of the patient journey," he said.

Moreover, we aren't just patients anymore. We've become healthcare consumers, Steinmann said – patients are better-educated and more engaged. "We know what's good customer service and what's bad customer service," he said.



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Researchers and start-up companies may benefit from IBM's work in A.I.

Once you are taken into the IBM fold, you have access to many tools to answer your clinical questions.

BY DR. SUNNY MALHOTRA

Artificial intelligence can be instrumental in the process of diagnosing, treating and preventing disease, and there are now many companies and researchers mining the vast lodes of unstructured data to obtain insights into clinical and diagnostic questions.

Once operational AI can connect patient data, make decisions and complete daily tasks, we will be able to improve our healthcare resource utilization.

I recently met with Mr. Sarhad Ibrahim, IBM Watson Evangelist, to better understand how a Canadian healthcare AI company could pursue further physician-driven innovation and what problems he suggested we solve with operational AI.

We also discussed how researchers and start-up companies can scale-up and commercialize their innovations.

Programs are available to Ontario-based, small and medium sized enterprises (SMEs) to partner with industry and government to drive innovation and accelerate growth for businesses. (Similar programs are available in other provinces.)

Under the IBM Innovation Incubator Project, qualifying businesses can leverage programs and infrastructure, including IBM's technical, design and business resources to lower the cost of introducing emerging and enabling technologies to the global marketplace. After the company proves product market fit with a customer, they are also provided with funding and future access to IBM projects in Canada.

Mr. Ibrahim sees many physicians who are driving innovative solutions using IOT capabilities. These include ensuring that vaccine storage quality is

maintained, as well as drug discovery through protein analysis and potential targeted therapies.

Once you are taken into the IBM fold, you have access to many tools to answer your clinical questions and companies are incubated from infancy with the backing of IBM's workforce.

IBM, which has major R&D activities of its own, is also helping the research community by putting a

IBM's Innovation Incubator Project extends technical, design and business resources to qualifying companies, and helps them access the global market.

good deal of intellectual property into the public domain.

For example, some IBM cancer-fighting artificial intelligence projects are becoming open source.

The first, PaccMann, "Prediction of anticancer compound sensitivity with Multimodal attention-based neural networks," uses deep learning algorithms to analyze molecular structures to predict whether

Dr. Sunny Malhotra is a US trained sports cardiologist working in New York. He is an entrepreneur and health technology investor. He is the winner of the national Governor General's Caring Canadian Award 2015, NY Superdoctors Rising Stars 2018 and 2019. Twitter: @drsunnymalhotra



compounds will be viable anticancer drugs while reducing development cost and time in the process.

This will accelerate our understanding of the molecular pathways of these pathologies, allowing us to create solutions.

A second tool, INtERAcT, "Interaction Network inference from vectoR representATions of words," automatically parses medical journals for important updates in the field and uses natural language processing (NLP) to find cancer solutions.

It is being tested on extracting data related to protein-protein interactions – an area of study which has been marked as a potential cause of the disruption of biological processes in diseases, including cancer.

A third project is "pathway-induced multiple kernel learning," or PIMKL, which utilizes datasets of molecular interactions to predict the progression of cancer and potential relapses.

Multiple kernel learning is used to identify molecular pathways to categorize patients, giving healthcare professionals an opportunity to individualize and tailor treatment plans.

Each project is open-source and has now been made available in the public domain to increase IBM's contributions to the scientific community.

Moreover, in partnership with various levels of government across Canada,

IBM is supporting physician-driven AI innovators to create solutions to help improve clinical, operational and financial performance, and to enhance patient care.

Shared procurement agreements create new obligations

BY DENIS CHAMBERLAND

The Ontario Broader Public Sector Procurement Directive applies to broader public sector organizations, such as hospitals, colleges, universities, school boards, and others. It doesn't apply to private sector companies that provide services to such organizations. At least, it doesn't apply in ordinary circumstances.

But what happens when responsibility for the procurement of the same goods and services is either shared between the BPS organization and a private sector service provider?

All BPS organizations, including hospitals, outsource business activities, functions and processes to meet the challenges of technological innovation, increased complexity, cost containment or to achieve costs savings, among other reasons.

At a time when the growth of public-private partnerships and other forms of business collabora-

tions are on the increase, the question is one that hospitals should mull over, whether or not a Directive-equivalent exists in the hospital's home province or territory.

The question applies Canada-wide because the principles and rules that underpin public procurement are set out in the applicable trade agreements, which include the Canadian Free Trade Agreement and the Canada-European Union Comprehensive and Trade Agreement.

There are many variations on the theme. A hospital may outsource cafeteria services, information system management and maintenance, dialysis services, or it can outsource the ownership, maintenance and future procurement of select medical technology under a long-term contract.

In each case, the hospital needs to assess the materiality of the proposed outsourcing arrangement and consider how it may impact the hos-

pital's statutory obligation to comply with the Directive (in Ontario) and with the applicable trade agreement requirements.

A specific scenario may help in the analysis. When a hospital proposes to remain engaged in the evaluation of the medical technology to be procured in the future, with the service provider providing mainly the underlying administrative support including issuing the relevant procurement documents, here the service provider clearly appears to be acting as an agent of the hospital, at least for procurement purposes.

In substance, the responsibility for procuring is shared. Since the

hospital remains bound to comply with the Directive in this context, it is difficult to see why the service provider should not equally be bound by the Directive.

It may be argued that because certain features of the technology to be procured in the future (i.e., pricing, some functionalities) were settled at the time the service provider was retained by the hospital, then as a non-BPS organization the service provider should not be bound by the Directive on future procurements.

After all, some of the procurement risks have already been absorbed by the service provider, the argument goes. But this overly technical view ignores the substance of the future procurements, which is to maximize value for money for the benefit of the hospital, not the service provider.

A clear example of this dynamic

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Denis Chamberland

Lumino fills gap in market for finding the right healthcare provider

BY KEVIN DOUGHERTY

When you think of industries that are being completely disrupted and transformed by technology, the first ones that come to mind are probably music, transportation, travel and shopping (think Apple, Uber, AirBnB or TripAdvisor and Amazon). The list goes on and on. The transformation of these industries in just a few short years has been nothing short of breathtaking and inspiring.

Curiously absent from this list, is health-care. It is the most important thing in our lives, yet healthcare is one of the last industries to be fully transformed by technology. We're talking about technology geared towards helping people take charge of their health. We live in a world where information is more accessible than ever before,



Kevin Dougherty

yet, we still lack resources to help people with the very first step in their healthcare journeys – finding the right provider.

As Canada's largest provider of employee benefits, Sun Life processes thousands of claims daily for items like prescription drugs, vision care, dental care, and paramedical services like chiropractors, naturopaths and massage therapists, and so on.

With connections to over 150,000 healthcare providers across Canada and anecdotal proof of the challenges associated with finding a new or replacement healthcare provider, we saw an opportunity to create better access to care for all Canadians. Our claims data contains information that commonly factors into people's choice of a new healthcare provider, such as their areas of specialty, service costs and geographic location.

Our next step was to create a tool that made this information searchable to individuals looking to simplify the process for finding a new healthcare provider. Taking inspiration from services like TripAdvisor and AirBnB, we enhanced the search criteria with the addition of peer ratings, and asked individual plan members to rate their provider when putting through a claim.

Initially available to Sun Life plan members through mysunlife.ca and the my Sun Life mobile app, people now had a way to quickly search for a healthcare provider by the criteria most important to them, and receive cost information and ratings on providers from people who actually used the service.

There was only one challenge. We created a tool with the ability to help all Canadians make smarter, more informed healthcare choices, yet, it was limited to Sun Life plan members only.

That's where the idea for the Lumino Health network originated. We took the initial platform we built, retooled it online and enabled all 36 million Canadians to access the information freely.

Today, Lumino Health is a free, online health community that provides Cana-

ans with access to our online provider search tool, and additional features such as information on the latest apps, products and solutions from health innovators, and insights from health industry experts.

If you think about the success of the great industry disruptors – the Ubers of

the world – you'll notice they have something similar in common. Each has built a service that simplified a process otherwise known to be complex and time-consuming, while empowering their end user to take charge of that process. This is exactly what we aim to do with Lumino Health, as

we empower Canadians to take charge of their healthcare in a way that's as simple as booking a hotel.

Kevin Dougherty is Executive Vice-President, Innovation and Partnerships at Sun Life Financial.

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Care providers are using new tools to address social determinants of health

It has been well established that poverty and depression can have a powerful impact on health.

BY DIANNE DANIEL

If you're seeing your family doctor to treat a rash, would you mention you recently lost your job? Is your doctor likely to ask? Is it even relevant? The more work that's done in Canada to reduce health inequalities, the more we know that social determinants of health – including income security – have an important influence on outcomes. Yet, care providers don't have a standardized way to collect this type of data and treat their patients accordingly.

A project led by Dr. Andrew Pinto, a family physician and researcher in the Upstream Lab at the Centre for Urban Health Solutions of St. Michael's Hospital in Toronto is aiming to change that.

Funded in part by the CIHR Primary and Integrated Health Care Network, the 75-member team of researchers, clinicians, patients and policy makers is working to develop an efficient and effective method of screening patients so that sociodemographic data, including income, can be easily integrated into clinical workflow.

Their study is entitled SPARK: Screening for Poverty and Related social determinants and intervening to improve Knowledge of links to resources.

"It's really understanding that people's health is determined by lots of different factors and we need our health system to be able to intervene on some of these factors which, to date, we haven't really thought about," said Dr. Pinto. "We're starting to think about a term like 'socially informed care', where you're actually changing your care plan based on a person's social circumstances."

Building on prior work, which includes a pilot study in six Ontario clinics, the SPARK project is testing an automated patient-screening process. Questionnaires designed to sensitively determine income security and other social challenges are administered in a waiting room on Android tablets.

Answers are automatically fed into the patient's electronic medical record (EMR), and a link of resources tailored to the patient's specific set of circumstances is available to the physician, who can then print a customized information handout for the patient.

The cloud-based platform driving the process, called Ocean, is provided by CognisantMD, a Toronto-based company working to bridge gaps in healthcare through patient engagement solutions. Ocean simplifies the process of creating online forms and provides the integration piece to capture data and feed it to the EMR, ensuring it shows up where clinicians expect to see it and where it can be useful.

"It's one thing to build a great poverty screening tool, but if clinicians need to think about using it every time, it's a much harder change-management process," said CognisantMD co-founder and president Jeff Kavanagh.

"But if you can script your kiosk (or tablet) in your waiting room to ask a few questions that will then trigger the full screen, that's automation, and that's the kind of thing that gets you from a neat pilot into something that is producing quality improvement at large scale."

Dr. Pinto said tablets are a vast improvement over paper-based patient surveys. When data is collected on paper, someone has to enter it into the EMR, allowing room for error. Paper forms are considered less confidential, whereas electronic forms are seen as

being more secure and are actually showing a higher response rate from patients. Perhaps the biggest benefit is that EMR integration means the answers are immediately available.

"It's seamless. It's secure. It's more efficient. And, the information is actually available right when the provider is then meeting with the patient," explained Dr. Pinto. "The way we've structured it, if a patient identifies they're having social challenges, the EMR can suggest some pathways to the provider."

For example, if a patient identifies they are having financial difficulty, the SPARK tool will present the treating physician with links to specific financial benefits they may be eligible for. The project team partnered with Prosper Canada, a national charity working to expand economic opportunity for Canadians living in poverty, to build the functionality.

Or, when a patient indicates they are having trouble paying for prescription medication, the screening platform will flag it in the EMR so the treating physician

another group working to identify and assist at-risk members of society at the primary care level.

In 2018, the centre received Ontario Trillium Foundation funding to conduct a pilot in four Ontario cities: London, Sudbury, Cambridge and Toronto. Its clinical tool, also supported by the CognisantMD Ocean platform, screens for poverty by asking questions like, "Do you ever have difficulty making ends meet at the end of the month?" or "Have you filed your taxes yet?"

Similar to the SPARK study, the CEP poverty tool generates a set of local supports and resources for physicians by linking to 211Ontario, a free helpline and online database of Ontario's community and social services.

CEP director Lena Salach said the approach of using a screening tablet in the waiting room enabled patients to be engaged in a non-threatening way, and encouraged them to be more candid with their answers.

"There was a very safe environment because the



ILLUSTRATION: LINDA WEISS

knows to prescribe a lower cost option or suggest an alternative therapy. If someone needs help filing their tax return, information on the nearest community agency will be provided as a link in the EMR, which the provider can print out and leave with the patient.

Patients in the Ontario pilot were followed for four months to determine the impact of identifying those at risk of poverty and intervening to help them gain income and better financial security. The goal is to show that screening ultimately improves health outcomes.

"We already know a lot about the relationship between income and health. This study is very much an intervention on income," said Dr. Pinto. "What we're working towards is a set of questions that is standardized across Canada."

This fall, the SPARK team will be launching a Delphi study to gain consensus on what those standard poverty screening questions should be. A much larger inter-provincial study is slated to begin in 2020.

The Centre for Effective Practice (CEP), a not-for-profit organization at the University of Toronto's Department of Family and Community Medicine, is

provider wasn't directly asking them the questions right at the provider-patient interaction," she said, adding that the questionnaire was created at a Grade 6 reading and comprehension level and is designed to be user friendly.

Overall, the initial four-site pilot screened 4,517 patients and 12 percent were found to be at risk of poverty. Of those, 30 percent were provided with customized resources and referrals to community supports.

Though the centre has not received additional funding for the project to date, the form is available for download from the CEP website, along with an integration piece to support the Telus PS Suite EMR. This fall, the centre is looking to secure a grant to expand its work on poverty screening with a focus on implementation assistance and integration with other EMR platforms.

"We're really about understanding what the care gaps are in primary care and working to close those gaps," said Salach, noting that the goal is to help

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Sherbourne Health brings care to underserved with Health Bus expansion

BY JAMIE LOUIE

Sherbourne Health, a Canadian leader in proactive care for underserved communities, has recently expanded its Health Bus program to serve individuals experiencing homelessness or who are under-housed in downtown Toronto's Moss Park neighbourhood.

Called the Moss Park Interprofessional Primary Care (IPC) program, this initiative is a collaboration between Sherbourne Health and Street Health that provides low-barrier primary care, mental health supports and connections to social services. It is funded by the Toronto Central Local Health Integration Network and Ministry of Health and Long-Term Care.

The program utilizes Sherbourne's Rotary Club of Toronto Health Bus, a state-of-the-art mobile health clinic, and operates specifically on evenings and weekends – outside of normal business hours – to meet the complex needs of individuals located within the Moss Park area.

The IPC team comprises nurse practitioners, case managers and community support workers who bring aspects of lived experience to their work. This integrated multidisciplinary team collaborates to provide services like the diagnosis and treatment of conditions, case management, harm reduction supplies, overdose prevention, and referrals to healthcare providers and community supports.

"Those who are homeless or under-housed often face multiple barriers to accessing primary care, such as a lack of health coverage or ID, prioritizing other needs like food and shelter, poor access to telephone and internet service, and experiencing stigma in traditional healthcare settings," said Clayo Laanemets, IPC Team program coordinator. "The Health Bus and IPC program are critical for reducing such barriers by delivering a model of care that is accessible, convenient and non-judgmental to this population."

Moss Park is a downtown Toronto neighbourhood, and has one of the highest



A nurse practitioner provides care to a client on the Health Bus.



Sherbourne Health, in Toronto, has extended the service provided by the Health Bus to six days a week.

concentrations of shelters within Toronto. As a large proportion of the population in this area experience homelessness or precarious housing, many live with chronic health issues related to mental health conditions and substance use and cannot easily access traditional models of primary care.

As a result, Moss Park has the highest rate of emergency department visits for mental health and addictions in the mid-

east Toronto sub region, at 2.5 times the rate of the average ER visit, despite two-thirds of patients accessing the ED already having a primary care physician.

To alleviate some of this strain, a crucial purpose of the IPC program is to reduce the number of emergency department visits in the Moss Park area.

"With access to supports like case managers and nurse practitioners, clients can

avoid utilizing ED services when acute emergency care is not needed," said Chantel Marshall, Program & Services Director, Urban Communities at Sherbourne Health, who oversees the Health Bus/IPC program. "This in turn, helps prevent worsening of the symptoms that warrant going to the ED in the first place."

Case managers help with the social side of health, and assist with acquiring identification, and accessing financial aid, housing and food banks. Community supporter workers (CSWs) also offer navigation to community supports and harm reduction services through the distribution of supplies like Naloxone kits and overdose prevention training. Clients can comfortably access the bus to receive these kinds of services in a non-judgmental and safe space.

"We create a welcoming environment to support developing meaningful relationships with our clients and the community," said Marshall. "It's important that our team includes CSWs who bring elements of lived experience to their work. This helps establish an initial relationship, and the more trust and comfort clients feel, the more likely they will be open to continuing to connect and receive services from our entire team."

The IPC team made its first stop in Moss Park on December 11. Since then, the program has expanded to six days a week, averaging 21 visits per stop, with each stop lasting around three hours. Notably, 40 percent of visits are clients engaging in complex interactions with nurse practitioners and case managers, and case managers have a 74 percent success rate when referring clients to community resources and supports.

The Health Bus, which has been serving Toronto's communities for over 20 years, was rebuilt as a state-of-the-art mobile health clinic in 2017. It has key features such as two private and fully equipped consultation/exam rooms, and an integrated wheelchair lift.

The systems on the Health Bus are also able to connect to other providers in the healthcare system. Nurse practitioners can access SCOPE, a virtual interprofessional health team that supports healthcare providers through a single point of access to nurse navigators, internal medicine, radiology and home and community care.

Another onboard capability includes ONE Mail, a provider-to-provider encrypted email service to communicate about patient care. EMR technology is also fully accessible and synced with Sherbourne Health's onsite EMR system, which allows for a smooth transition of clients to Sherbourne's health team at its centre.

To enhance outreach and communication for the program's services, Sherbourne Health also developed a new website, healthbus.ca, which launched at the organization's Annual General Meeting in June. The website includes real-time updates and interactive features, including a GPS tracker showing the Health Bus's current location, a 'meet the team' page, a function that displays the unique services at each stop, and a 360-degree virtual tour of the bus.

Jamie Louie is Public Affairs Lead at Sherbourne Health.

Headwaters advances

CONTINUED FROM PAGE 6

Technology at Headwaters added: "The IBT solution was fully integrated with the hospital's Health Information System, using a single sign-on which allows the clinical teams to tap their existing proximity cards and bring up their respective desktops from any location."

In March 2019, the platform was rolled-out to a total of 96 IBTs throughout the hospital. Headwaters and HealthHub built a schedule to install the units over a three-week period. The plan was to install a unit every time a patient was discharged from their room to minimize disruptions.

"HealthHub exceeded our expectations," said Peter Varga. "We actually completed all the installations in eight days."

Today, The Hub is improving the way things are done at Headwaters. Jennifer

Bourne said, "It has enabled our clinicians to be at the side of the patients, providing better care and more timely documentation. Our patients get to see some of the behind-the-scenes stuff that really hasn't been visible to them in the past. There are no surprises and patients

The IBT solution has been fully integrated with the hospital information system, using single sign-on.

are aware of what we are doing as we move through the process."

What else does the future hold for The Hub at Headwaters? "I see the IBT as the first step towards our vision and digital strategy where all clinical information is integrated into one patient record," said Peter Varga. "I believe the IBT empowers our patients and families

and improves the overall patient experience with the hospital."

There are plans to introduce new functionality with the IBTs, including patient dietary preferences, and computerized orders to the gift shop, so that needed items can be delivered directly.

Jennifer Bourne identified spiritual care as something she would like to see. "Wouldn't it be nice to be able to simply touch a button on the screen that could arrange a visit from our spiritual care coordinator or perhaps, a lay chaplain?" She also mentions that "it would benefit Headwaters if nurses were able to document information on what medication had been dispensed to a patient – and at what time – simply by scanning the actual medication at bedside."

As Hemburrow noted, "All of this is possible, and we have many new applications in the final stages of development to meet the needs of patients, their families and clinicians."

How to provide clients and patients with an 'on-ramp' to improved care

BY SHIRLEE SHARKEY

There is so much talk about digital and virtual care but, when all is said and done, it's all simply care. There is no longer a need for a distinction between physical and virtual care – today all care has a digital and/or virtual component. If you think about a car and traffic analogy for the healthcare sector, we've been on the highway all along, but today the car is different – it now contains enhancements like the GPS, blind spot alerts, lane departure warnings and very soon, some vehicles will be without drivers.

We don't need a new highways; we need better 'on-ramps' to make use of emerging technologies. Just as innovations can enhance driving and safety, giving patients access to new systems can improve their health.



Shirlee Sharkey

A solution that makes life safer for the elderly who are living alone is the 'Ring of Support'. SE Health and Memotext have co-designed an innovative community response program to address the needs of these individuals.

A voice enabled digital assistant uses Amazon Alexa to perform a daily wellness check, medication reminders and event notes. Based on the responses, SE Health's clinical call-centre nurses are alerted if necessary. This allows them to proceed to the next steps (i.e. calling the client, arranging a visit, etc.) At the same time, family caregivers are kept informed as to how their loved one is managing.

I am very excited to be able to help enhance the home-care experience by implementing voice technology – which many people are already familiar with – into a service model that allows us to "be there" just in time. It's a technology we are excited to leverage. It provides the appropriate level of care, at the right time, in the right place and gives individuals and their families the confidence and comfort needed to remain in their homes.

Another great example of connecting with patients is called 'Putting Patients at the Heart (PPATH)'. It's an integrated program for cardiac surgery patients and their caregivers. Working in partnership with Trillium Health Partners (THP), patients and caregivers, we identified ways to improve the experience of transitioning home and designed a program to better the patient and caregiver experience of the entire cardiac surgery journey.

Using a shared record and a 24/7 call line, PPATH allows a better flow of information and instills greater confidence for patients. The program achieved national recognition as a winner of the Canadian College of Health Care Leaders (CCHL), 3M Health Care Quality Team Award – Improvement Across a Health System. It achieved:

- 15% reduction in postoperative hospital length of stay (equivalent to three hospital bed days saved annually per patient);
- 25% fewer hospital readmissions within 30 days of discharge;

- 33% fewer emergency department visits within 30 days of discharge; and
- 11% reduction in overall system costs for the bundled approach.

The more tightly we can integrate people and technology across the healthcare system, the better our outcomes will be. The lesson

here is that the technology doesn't have to be brand new with bells and whistles – sometimes a number to call and the ability to speak to a live person is the best integrated solution.

My final example is Elizz, a service for daughters and sons to live well while caring for their aging parents. I am so proud

of the work we are doing with, and for caregivers – I like to call it our 'Oprah' of caregiving.

Elizz receives over 250,000 digital connections with family caregivers every month – that's 3 million per year. With

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Health

Pilot in B.C. deploys technology to improve safety of opioid users

BY NEIL ZEIDENBERG

The opioid crisis in Canada continues to be of great concern. Nationally, over 4,400 apparent opioid-related deaths occurred in 2018 and almost all of them (94 per cent) were accidental – this according to the Public Health Agency of Canada (PHAC). More accurate and timely data is required to develop new strategies to reduce opioid-related harms and deaths.

Last fall, MaRS Discovery District – North America's largest innovation hub, based in Toronto – launched a federally funded project called The Opioid Data Challenge.

Participants were asked to source new data sets and methodologies to help communities across Canada generate a better understanding of the scale of the crisis and forge a more effective response to opioid-related harms and deaths.

The co-winners of the challenge – Brave Technology Coop (Brave) of Vancouver, B.C. and Wellington Dufferin-Guelph Public Health, in Ontario – proved their methodologies could be applicable and scalable to other communities.

“Winners received \$50,000 to continue developing their solutions, to work with MaRS to scale and integrate their concepts into existing public health surveillance systems, and to share insights from their data with trusted partners,” said Shahab Shah-nazari, Director of Innovation Challenges, at MaRS.

Brave launched in late 2016 with the aim of developing technology to improve the safety of people using drugs in isolation, and to reduce the number of preventable deaths in communities throughout North America.



Oona Krieg, COO at Brave Technology: Everyone who opted into the pilot fully adopted the solution.

Brave was recognized for capturing data on the largest data gap – non-fatal opioid-related harm with no medical intervention.

Their solution – an internet-enabled smart-button – connects people to staff support whenever they feel at risk of overdose. By pressing the “Brave Button,” it triggers a mobile alert notifying support workers that assistance is requested, and where.

The buttons are small, and lightweight. Moreover, pressing the button generates data that tracks and monitors all requests, and notifies support workers of the type of request in advance of their arrival, leading to a more effective response.

“The objective for our pilot project was two-fold,” said Oona Krieg, COO, at Brave. “Would people who wouldn’t traditionally reach out for support use technology to pro-

tect themselves?” As it turns out, everyone who opted into the pilot fully adopted it.

“Secondly, can technology play a role in identifying an OD, activating response networks to an OD, and prevent morbidity, hospitalization, and maybe even incarceration?”

Despite it being a small pilot, the system was installed in December and there have been over 700 uses of the buttons – in a very small building. “There’s less than 30-people living there,” said Brave CEO and founder, Gordon Casey. “They’re using our technology for activating overdose intervention and safety in the privacy of their own home.”

Highlights include:

- 14 overdoses reversed, thanks to a more directed response.
- 61 cases of a person at risk of violence

requesting help.

- In approximately 100 cases, it has led to supervised consumption.

The results indicate the buttons led to quicker response times to an emergency; increased prevention of overdose deaths; and, improved resident safety.

Previously, people would bang on the floors or yell down the hallway that someone has overdosed. Chaos would ensue, and staff didn’t know exactly where to respond. It was inefficient. Brave buttons, however, eliminate chaos and turns it into a more specified and contained event.

“The best feedback we’ve received is how safe people feel having the buttons in their room; how they can request support, and the urgency in which they’re able to do so,” said Krieg. “It was imperative that staff respond no matter what, and within a specific amount of time.”

Residents also felt confident their neighbours who also have a smart button were safe.

Brave was also named a winner last September in The Ohio Opioid Data Challenge – a global technology challenge seeking scientific breakthroughs that address the U.S. opioid crisis. “We were the only non-US organization to be named one of the 12 finalists,” said Casey.

For its part, WDG Public Health, in Guelph, Ont., has partnered with the Wellington Guelph Drug Strategy to create the FAST Overdose Alert Platform. Leveraging the knowledge of an extensive network of community partners, WDG Public Health designed its platform to collect real-time data about opioid-related overdoses and incidents, enabling regular reporting to partner organizations and triggering community alerts on abnormal overdoses or incident patterns.

PHOTO: ELIZABETH VAN ASSUM

UK project combines analytics and population health to improve care

Across an eight-mile peninsula called Wirral, near Liverpool in the UK, there is a 12-year lifespan difference for people living on one side compared with the other.

That discrepancy resulted in part from the collapse of the shipbuilding industry, disparities in government funding, lack of investment and rising unemployment causing social and economic contrasts.

On the side with the lowest life expectancies, you’ll find very high rates of depression, alcoholism, lung disease and diabetes, along with other chronic diseases.

To identify people at greatest risk, and to improve the quality of their lives, Britain’s National Health Service partnered with healthcare software giant Cerner Corp., to create a program that combined analytics with proactive population health management.

The Wirral Care Record, which was created in 2017, is now drawing data from 51 General Practices, a mental health organization, community health

services, an acute-care hospital and a cancer centre. Additional sources, including social care and hospice care, are being added over time.

Using analytics and population health management techniques, the repository is designed to identify patients with the above-mentioned ailments, along with others, like COPD and asthma, and to help identify gaps in care and change the dynamics of care from being reactive to proactive.

“These people have six times the ED utilization of the general population,” said Dr. Justin Whatling, vice president of Population Health for Cerner. He noted that after identifying the most at-risk patients and neighborhoods, public health doctors, nurses and social care workers working in the collaborative Healthy Wirral Partners programme will be given the tools to assist them improve health and wellbeing, reducing health inequalities.

Their work has progressed to design programs for common complex co-morbid situations such as end of life care and better caring for those with severe frailty risk.

Based in the UK, Dr. Whatling leads Cerner’s work in population health outside of the United States. A long-term advocate of measuring outcomes and leveraging technology to improve health, he has led professionalism for health IT, advised governments, and originally



Dr. Justin Whatling

worked as a hospital physician in leading health centres, including King’s College Hospital, Hammersmith Hospital and Queen Square National Hospital of Neurology and Neurosurgery. As Dr. Whatling said, the strategy in Wirral and elsewhere is to “know, engage and manage.” In a meeting at the HIMSS conference in Orlando earlier this year, he commented on the British population health strategy and observed that it could be replicated in Canada.

Jim Shave, president of Cerner

Canada, concurred: “The need couldn’t be greater,” he said. “It’s so applicable.” He observed that by using analytics and population health management, communities and individuals needing more attention could be identified.

And while the data and tools exist to create similar solutions in Canada, what’s really needed is the governance structure along with the political will to go ahead.

The Wirral system creates a near real-time care record, encompassing community, primary, secondary, specialists, resulting in one complete patient record that can be accessed and shared by care teams.

Not only does it provide the care-givers with patient information from the other organizations, such as encounters and problems, but the analytics can be used to predict deterioration or complications in patients. Access to this analytical information can be provided to not just strategic levels but to all care givers via dashboards that are live and up to date. “Our data seems to corroborate the idea that the more unmet measures there are at a practice, the more ED encounters

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Patient-reported experience is a key element in improving surgical care

BY DUNCAN ROZARIO, MD

Feedback, according to my wife, is the reason that I am still married after 20 years. Her feedback often leads me to the Home Depot, where after each purchase I am asked by the friendly cashier to rate their service online.

Do we do that in medicine? How well do we do what we do, and how do we know it? The godfather of the National Surgical Quality Improvement Program (NSQIP), Ernest Codman, at the turn of the 20th century, pioneered the idea that all hospitals must analyze their results, compare them with those of other hospitals and publicly report their successes and failures.

This was considered heresy at the time. Have things changed 100 years later? As specialists affiliated with the Royal College of Physicians and Surgeons of Canada, we're mandated to complete 400 hours of continuing medical education per five-year cycle, but we are not trained in customer service, the patient experience, or healthcare communication skills. We are trained to focus on outcomes and on patient care.



Dr. Duncan Rozario

specialists affiliated with the Royal College of Physicians and Surgeons of Canada, we're mandated to complete 400 hours of continuing medical education per five-year cycle, but we are not trained in customer service, the patient experience, or healthcare communication skills. We are trained to focus on outcomes and on patient care.

The patient experience: What is the patient experience? The Beryl Institute defines it as "the sum of all interactions, shaped by an organization's culture, that influence patient perceptions across the continuum of care." It encompasses physicians' manner, timely compassionate nursing care, clean surroundings and respectful and courteous treatment.

Function versus purpose: As caregivers and staff in a hospital, we need to understand the difference between our function and our purpose. We all have different functions, such as administration, computer support, nursing care and provision of surgical services, but we need to understand that we all have the same purpose – the reason why our job exists – in our hospitals.

At Oakville Trafalgar Memorial Hospital, our vision is "exemplary patient experiences always," and that is our collective purpose. These four simple words have a profound meaning in modern healthcare. At times, caregivers forget their purpose and perform only their function. Why should surgeons, who are traditionally taught to focus only on outcomes, care about patients' attitudes, expectations, or experiences? Because it is clearly demonstrated that patient attitude affects patient outcomes.

Expectations and outcomes: Many studies are now showing that patients' expectations affect their outcomes after surgery. What's more important: the patient's care or the patient's experience of care? Is it better to receive optimal care or to believe that you did? Most patients, for example, will never see an elegant bowel anastomosis or the care with which their surgeons close the abdominal wall. They may not understand some of the complexities of modern surgical care, but they do know respect, courtesy, caring, emotional con-

nection and listening, and we must understand that, to them, these are proxies for quality of care.

Despite what we were taught in medical school, physicians need to connect with patients and show empathy and compassion. Why is paying attention to the patient

experience important? Because it's the right thing to do; it's how we would want to be treated, it's how patients perceive quality, and it's the basis of the patient-centred care model.

The poet Maya Angelou noted, "At the end of the day people won't remember

what you said or did, they will remember how you made them feel." After completing a colonic resection for cancer several weeks ago, several days after the surgery the patient told me, "Doctor, I honestly don't remember everything you told me in

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Messe
Düsseldorf

Patient-reported experience a key element in improving surgical care

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the office, but I do remember I felt I could trust you.”

Patients are concerned about a lack of respect. They want to be treated as individuals and want a personal connection so that they get better healthcare. They want healthcare providers to communicate with each other; they don’t want nursing staff asking patients, “What did the doctor tell you?”

Assessing patient experiences: Our surgical program has started to use a readily available Internet-based survey tool, SurveyMonkey, and we endeavour to assess every single patient encounter in every single division, including surgical day care, ambulatory care, and the inpatient units, every single day.

We use this information to guide training

in great patient customer service. We participated in the development of the Ontario Hospital Associations Ontario Day Surgery Experience Survey. A group composed of the chief of surgery, surgical program director, patient care manager for the OR/ PACU,

We are encouraging attending surgeons to call or have a video visit with patients the day after surgery.

and all surgical division leads excerpted a portion of the questions for our hospital.

We have already started surveying patients coming through our surgical day care unit. The survey is completely anonymous and we do not, at this point, identify

the surgeons involved in the patients’ care.

Bias is always a concern with an anonymous survey such as ours. The survey is also open to manipulation, owing to its anonymous web-based access. As such, we are not looking for statistical significance; rather, we are looking for trends to follow and address.

This technique provides a very cost-effective way for smaller institutions to assess patient care experience. Our early results point to a number of issues for us to consider: postoperative nausea and pain control, varying wait times and lack of communication throughout the surgical experience, and inadequate information provided to patients about their surgical procedure.

As a result, we have tasked our pain control service to address postoperative nausea and vomiting, and we have started implementing a multi-modal day surgery

pain protocol for hospital and discharge.

An upgrade to our operating room booking and patient information system is underway to streamline care and provide real-time information to patients and their families through short message service (SMS) and a web portal.

To address communication about patient surgical procedures, we are developing a post-operative day one program modelled on suggestions from a colleague to improve patient satisfaction, where the attending surgeon calls or has a video visit with patients the day after surgery.

Once surveys of patient experience have produced results, further steps can be taken to improve the healthcare system, overall. There are many organizations dedicated to improving the patient experience, including the Beryl Institute, the Association for Patient Experience and the Institute for Healthcare Improvement. We need to be a part of moving the patient experience to the forefront of care and using data to improve what we do.

Duncan Rozario, M.D., is Chief of Surgery, Oakville Trafalgar Memorial Hospital and Medical Director, Oakville Virtual Care Program. He is an Assistant Clinical Professor (Adjunct), Department of Surgery, McMaster University. The author thanks Julie McBrien, program director of surgery at Halton Healthcare Services, who has been an invaluable colleague in the development and implementation of our feedback strategies. A longer version of this article originally appeared in the Canadian Journal of Surgery, February 2019.

UK project combines analytics and population health

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there will be, too. It follows that by providing care-givers with the tools they need to meet those measures, we can reduce ED attendance. A lot of the problems faced by hospitals cannot be solved inside the hospital itself,” said Paul Charnley, director of IT and Information, Wirral University Teaching Hospital, in a backgrounder about the Wirral project.

(See: http://www.interopen.org/wp-content/uploads/2018/05/Interoperability_CaseStudy_Wirral_2018.pdf)

In the U.K., Dr. Whatling said Cerner is now conducting population health and data intelligence projects in eight different communities and nationally through work with partners on the National Perfor-

mance and Population Health Management Dashboard programme to support Integrated Care Systems across the whole of England.

The approach is maturing in the United States, too, and it’s getting started in other countries like Sweden.

A great deal of information is available about individuals and neighborhoods. It can be pulled from various sources, such as hospitals, community and mental health units and doctors’ offices, along with social services and economic sources.

“It’s possible with population health management to target individuals who are in need, and then create care plans for them, one person at a time,” said Dr. Whatling.

The system in Wirral makes use of dashboards that shows clinicians how var-

ious cohorts of patients are performing – such as diabetes, asthma and COPD – and shows them where to focus their efforts. Dr. Whatling noted that population health is often associated with identifying and managing large cohorts of patients. Now, with analytics, it can be done on a “micro level”, where individuals are recognized and interventions can be targeted to their needs. “It’s something new,” he said. “And you can’t do it without informatics.”

“Population health is really a new form of precision medicine,” he observed. It takes into account the social determinants of health and provides care-givers with the tools to offer proactive, rather than reactive, care. “It allows you to move the needle on the healthcare challenges you’re facing,” he said.

Interoperability in Canada survey

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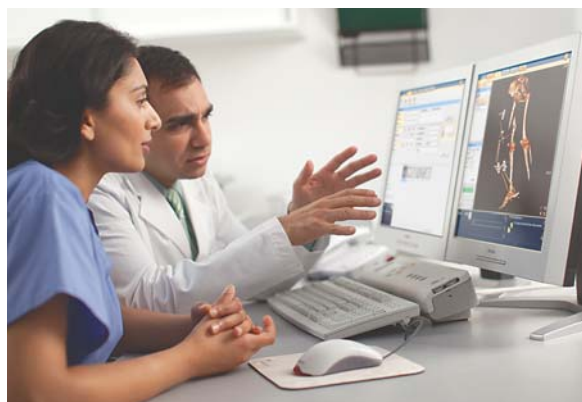
is growing support for application programming interface (API) based standards such as Fast Healthcare Interoperability Resources (FHIR), developed by Health Level Seven International (HL7).

Here are primary standards ranked by use at healthcare organizations: HL7 v2 is being used by nearly half of respondents (46%), followed by FHIR (31%), HL7 v3 (28%) and finally Consolidated CDA (C-CDA) at 19 per cent.

How the government can help: Nine-in-10 respondents feel that additional government support would improve interoperability in their jurisdiction. Legislation to improve interoperability ranked first, followed closely by government mandate to use specific standards and architectures, government support for population-based funding or Integrated Care Teams with value-based care objectives, and finally, well-publicized government support for a uniform technical approach across Canada.

Dr. Chris Hobson is a former Family Physician with 15 years of experience and is the Chief Medical Officer at Orion Health, a global leader in population health management and healthcare integration solutions.

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Social determinants

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providers to understand the impact of living in poverty, how it correlates to chronic conditions like diabetes, asthma, arthritis, cancer, COPD and mental illness, and that there is something they can do to help.

“Awareness of that is still relatively low among providers,” she said. “They think it’s such a huge undertaking, but it’s actually not as difficult as one thinks.”

One area where screening for at-risk populations is growing is in nutrition. Heather Keller, research chair at the Schlegel-University of Waterloo Research Institute for Aging, developed a screening questionnaire that is now accepted as best practice worldwide.

The self-assessment tool is called

SCREEN: Seniors in the Community Risk Evaluation for Eating and Nutrition and consists of 14 questions covering appetite, frequency of eating, motivation to cook, ability to shop and prepare food, weight changes, isolation and loneliness, chewing and swallowing, digestion and food restrictions due to health outcomes.

Originally created as a paper-based tool two decades ago, SCREEN has been gaining traction in recent years, in part due to the automation provided by the Ocean platform.

Instead of filling out paper questionnaires, patients are either presented with tablets in the waiting room or emailed a link which they can complete from home. Their answers are then integrated into their EMR.

“You don’t have recording errors. You don’t have concerns about a clinician hav-

ing to do it during a clinic visit and wasting time,” said Keller. “You just see the result and go right from there to the next step around treatment and consultation.”

The idea for nutrition-screening was spawned when Keller was working as a dietitian in a chronic care and rehabilitation setting. She noticed that many seniors who

Detecting poverty and doing something about it is not as difficult as many healthcare providers may think.

came in after a fall were underweight and wondered if identifying nutrition problems early on could help with fall prevention as well as malnutrition, ultimately helping to keep people healthier as they age.

“I realized if we want to do anything to improve nutrition in older adults, we had to figure out how to measure it quickly and easily,” she said, adding that the screening tool was developed with clinical practice in mind.

Five family health teams in Northern Ontario recently took part in a study involving the SCREEN tool, which was administered on Ocean tablets. According to Keller, the seniors found it easy to use and reported that the information provided

raised their awareness of nutrition risk and how to overcome it.

“The Ocean tablet made it much easier but we still have to work out the process of who’s going to hand the tablet to the senior, who’s going to give them the result, who’s going to give them the hand-out – those little process steps,” said Keller.

Whereas nutrition screening in older adults experienced a slow uptake, a similar approach to nutrition screening in preschoolers and toddlers was quicker to take hold.

The NutriSTEP nutrition screening program, led by dietitian researchers from the University of Guelph and the Public Health Sudbury & Districts, with input from Keller, provides a 17-item questionnaire for parents to fill out.

Similar to other screening initiatives, they receive a personalized handout with specific recommendations for their child and links to more resources. When integrated with the EMR, the primary-care practitioner gets access to a summary of results and a calculated risk score.

“It’s not just screening,” said Keller. “It’s an intervention in and of itself, because it raises people’s awareness that, ‘Hey! I’m not eating as well as I should be’ or ‘I’m having some grocery shopping difficulties. Maybe I should think about that.’”

Accessing information is still problematic

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beneficial for patients. She said, “Medically linked data enables better understanding of a patient’s medical journey and the treatments they’re receiving. Many people with chronic diseases see multiple health-care providers and specialists. Sometimes those professionals do not have the complete picture. With the complete picture, there’s an opportunity to ensure treatments are holistic and effective.”

Michael Billanti, Director of Population Health at Cerner Canada, said Canada is “lagging behind” in its effective use of medical data. He later made the point that

A lot of information is collected, sometimes with duplication, and often it is not shared or used effectively.

the problem of different systems not ‘talking to each other’ isn’t just about between-province communications. Even within each province it’s a huge problem.

For example, Billanti said, Ontario has a lab system, OLIS (Ontario Laboratories Information System), a drug repository, a radiology repository, ECHN (Electronic Children’s Health Network, records), and so on. While they consolidate information in each of these areas, there is no over-arching integration.

Moreover, lots of data is collected, but it isn’t used effectively, and it’s being collected separately over and over, creating a burden on the healthcare system – and ultimately harming patients.

Billanti said, “The emergency room has very few gunshot wounds and car accidents. It’s mostly chronically ill patients whose care has been mismanaged.” Because data isn’t used effectively, people who could benefit from extra help managing their health – those who are chronically ill, have complex conditions, or whose social circumstances make managing their health difficult – are not being monitored and often they end up in ER.

Dr. Kimberlyn McGrail, Scientific Director of Population Data BC, emphasized the importance of ‘regular people’ being involved in deciding how to balance the risks and benefits of linked medical data. She maintains that it shouldn’t be just a small

group of experts who decide how to proceed, because these issues involve value judgements as well as professional knowledge. This means educating the public so they understand the relevant issues. It also necessitates discovering what people think, once they understand the issues.

How to provide clients and patients with an ‘on-ramp’

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Elizz we have a clear mandate related to the problems we are trying to solve. We are focused on the needs of caregivers and giving them the tools they need to be healthy and feel supported.

I am also very pleased with our progress on Elizzbot, a chatbot that allows family caregivers to interact with experts and artificial intelligence technology to get the personalized answers they need, or to simply reach out for an empathetic voice.

We developed this friendly chatbot with the company X2AI, and we interact with

over 1,000 active users per month. Elizzbot is at the forefront of our need to remain relevant and move with the times. It allows people to reach out to Elizzbot whenever and wherever they need to – by using a chat that’s as simple as a text message.

I’ve shared just a few key examples that illustrate the impact that can be made on people when we bring together powerful resources. New technology solutions are not magic – for them to be truly transformative, they need to support frictionless integration.

The solutions that wrap around the client and existing processes are the most

adaptable and adoptable. Let’s keep the traffic moving and make changes that make sense in the context of people’s lives. We need to fit in and move with the traffic; not build a new highway.

For me, it always comes back to the questions: Are we solving the right problem? How is this helping people? Is it making a difference? If we remain steadfast in our commitment to keep these questions front and centre, we’ll be successful at making the world a better place.

Shirlee Sharkey is President and CEO of SE Health.

Denis Chamberland

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at work relates to healthcare group purchasing organizations and shared services organizations.

In Ontario, an Attestation of Compliance with the Broader Public Sector Accountability Act, 2010, must be signed by the Chief Executive Officer of BPS organizations, confirming compliance with the Directive in the immediately preceding fiscal year.

The attestation form sets out thirteen requirements and it asks the organization to (i): attest that it has complied with each of the thirteen requirements, or (ii) if compliance was not achieved, to indicate corrective actions proposed to bring the organization into compliance within six months.

It is standard for these organizations to provide their own attestations to the hospitals for which they procure, notes David Lacourt, Director, Procurement and Supply Chain at Hamilton Health Sciences.

He adds, “From the hospital’s perspective the spirit of the Directive is to ensure that procurements within the public sector achieve a procurement outcome that is based on the principle of ‘best value for money’.

This means that when the hospital and a private sector partner are making procurement decisions jointly for the benefit of the hospital, best value

The attestation form sets out thirteen requirements and asks organizations if they have complied.

for money is best achieved by conducting an open, fair, and transparent competitive procurement process, regardless of which organization is leading the process on behalf of the hospital. In short, the private sector partner is procuring on our behalf and so it must comply with the requirements of the Directive.”


It may not be in every case where a

third party procures on behalf of a hospital that the third party will be required to comply with the Directive.

But, particularly in a shared procurement, where the hospital and the third party work closely together to maximize value for the benefit of the hospital, there is no justifiable reason why the third party should not commit to complying with the Directive.

Either the third party relies on the procurement expertise of the hospital, in which case its procurement activities may be pulled into compliance by the hospital, or it develops its own procurement expertise to help the hospital meet its statutory obligations in respect of the contracted procurement activities. One thing remains: the hospital cannot absolve itself of its statutory obligation to comply with the Directive by contracting it out to a third party.

Denis Chamberland is a public procurement and trade law specialist with extensive experience working with hospitals. He can be reached at dac@chamberlandlawcorp.com.



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October 18-19, 2019 - Toronto

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Visit us at **ca.medical.canon** to register and view the agenda.