Healthcare Technology

CANADA'S MAGAZINE FOR MANAGERS AND USERS OF INFORMATION SYSTEMS IN HEALTHCARE | VOL. 28, NO. 6 | SEPTEMBER 2023

INSIDE:

FOCUS ON ENTREPRENEURS PAGE 10

AWS for the doctor

AWS has produced a generative Al-based system that can monitor discussions between patients and physicians, turning the conversation into a transcript or summary for the EMR. Page 4

Super-nurses to the rescue

At a time when there is a severe shortage of nurses, a US company – with a Canadian partner – is devising a virtual nurse that can check up on discharged patients at home. Page 4

New PACS for Nova Scotia Nova Scotia has upgraded its PACS solutions at 40 hospitals across the province. They've adopted the Enterprise Imaging solution from Agfa HealthCare, along with an upgrade of Agfa's Xero viewers, which are used in many departments. Page 12



A magical time for surgical robotics at UHN, with many firsts

When it comes to surgical robotics, a number of North American and Canadian firsts have been performed at Toronto's University Health Network. Patients who would normally have lengthier surgeries, longer and more painful recoveries, are now going home with minimal scars after fewer days in hospital. UHN has been implementing some of the most modern robotic platforms, including the new Medtronic Hugo robot and the latest Intuitive Da Vinci robots. To accomplish operations with these new systems, multi-disciplinary teams spent up to a year in training. Pictured at left is UHN surgeon Dr. Tony Finelli. SEE STORY ON PAGE 12

Oak Valley Health develops EWS for hospital and LTC

BY JERRY ZEIDENBERG

ARKHAM, ONT. – Oak Valley Health, consisting of Markham Stouffville Hospital and Uxbridge Hospital, has been testing a new Early Warning System (EWS) that predicts when in-patients are in declining health and may suffer a catastrophic episode – such as cardiac arrest.

These events are referred to as code blues in hospitals and they trigger the rapid assembly of teams of healthcare providers, something that can happen around the clock.

But with Oak Valley Health's EWS, the decline can be detected well in advance of the patient actually crashing, giving doctors and nurses a much better chance to provide effective care and to stabilize the patient.

The system is electronic, providing realtime information as nurses input vital signs and other information into the MEDITECH record solution. Using an AI-based algorithm created by Oak Valley in partnership with ThoughtWire, a technology solutions company, the system automatically sends alerts to the charge nurse on duty and to the appropriate clinicians.

"The technology is proving to be extremely reliable," said Mark Farrow, CIO of Oak Valley Health. "It's getting to the point where an inpatient going to a code blue should be seen as a health system failure. We should be able to predict it."

The system monitors vital signs, symptoms and observations that are entered into the elec-

For the first time, early warning systems are being used in LTC, preventing trips to the hospital.

tronic health record system by nurses. An AIpowered algorithm measures the data against a 'digital twin' to determine whether the patient is in danger, and whether help is needed.

An electronic communication system shows who has been sent the notification as well as who responded, closing the loop on messaging.

Farrow was previously CIO at Hamilton

Health Sciences, where he was involved in a project to implement an EWS. He is bringing that expertise to Oak Valley Health, where he says the initial pilot has been welcomed and has won the approval of clinicians.

While several hospital organizations across Canada have deployed electronic EWS, using automated algorithms and alerting solutions, Oak Valley Health is moving in a new direction by rolling its EWS out to long-term care facilities as well.

Oak Valley Health – part of the Eastern York Region North Durham Ontario Health Team – has been testing the solution in two nursing homes and has plans in the works to expand into more of them.

The system for long-term care has been tweaked so that it detects deterioration in the health of residents using information collected in the PointClickCare record solution, an electronic system that is used in many nursing homes.

The LTC centres are both within Oak Valley Health's catchment area, and the idea is to spot CONTINUED ON PAGE 2

Oak Valley testing EWS that predicts when in-patients are in decline

CONTINUED FROM PAGE 1

problems before residents need to be rushed to the Emergency Department or ICU.

"We believe that early intervention will prevent hospital visits," said Farrow.

That's good for the health of the residents, who will be treated before their condition turns into an emergency. It also saves the healthcare system significant costs as beds in the ER and ICU are expensive.

As well as physical problems, the system is also being designed to spot mental health issues in long-term care residents, such as cognitive declines and emotional issues, as well as clients who are slipping into dementia.

That won't, of course, prevent the onset of dementia, but by catching it earlier, treatment and care can begin sooner.

Farrow said the team is considering using even more futuristic technologies, such as sensors in the rooms of long-term care residents to detect if there is unusual activity. For example, if the resident is staying too long in bed, or hasn't used the toilet.

That data can be assessed by the algorithm - and measured against the 'digital

twin' - to determine if the behaviour should be investigated.

He added that an additional benefit of detecting declining health in long-term care patients is to prepare families for the end of life.

And by detecting problems sooner, steps can be taken to care for the resident in the long-term care setting, including hospice care, instead of in hospital.

"It's about maintaining the dignity of the resident, too," said Farrow, explaining it will be much more comfortable for the patient in a long-term care facility, surrounded by family and familiar caregivers, than in the hospital.

While the project in the hospital and the long-term care facilities is less than a year old, Farrow would like to expand it quickly. So far, the team has accomplished the roll-

Farrow believes there are significant cost

savings in both, as hospital inpatients are prevented from being transferred to expensive ICU settings. Similarly, long-term care patients may avoid being rushed to hospital if a decline in their health can be detected.

Interestingly, Oak Valley Health in the past few years has been the developer of an EWS for paediatric care. Because this sys-

When a hospital patient or LTC resident declines, the system automatically sends alerts to the appropriate clinicians.

tem has been a success, and has shown real value, the executive team at the hospital was in favour of a system for the larger inpatient population.

"It was an easy sell, because we're doing it on the paediatric side and it works," said Farrow.

However, he pointed out that it wasn't simply a case of expanding the usage of the paediatric EWS system.

"Measuring the vitals of babies and adults is very different," said Farrow. "You

out with a budget of about \$600,000. Expansion will depend on obtaining further funding. He said they're currently working on studies to show the return on investment, both in the hospital and in the long-term

care setting.

INFO Coming up next **Issue Date** Feature Report Focus Report October Telemedicine Physician IT Nov/Dec AI / Analytics Apps for Healthcare Feb 2024 Medical Imaging **Clinic Management** March 2024 Interoperability Security April 2024 **Mobile Solutions** Artificial Intelligence May 2024 **EMR** Trends Precision Medicine June/July 2024 IT Resource Guide Point-of-Care Systems Influe

For advertising or editorial inquiries, contact Jerry Zeidenberg, Publisher, jerryz@canhealth.com

> Healthcare Technology www.canhealth.com



CANADA'S MAGAZINE FOR MANAGERS AND USERS OF INFORMATION TECHNOLOGY IN HEALTHCARE Volume 28, Number 6 September 2023

Address all correspondence to Canadian Healthcare Technology, 1118 Centre Street, Suite 204, Thornhill ON L4J 7R9 Canada. Telephone: (905) 709-2330. Fax: (905) 709-2258. Internet: www.canhealth.com. E-mail: info2@canhealth.com. Canadian Healthcare Technology will publish eight issues in 2023. Feature schedule and advertising kits available upon request. Canadian Healthcare Technology is sent free of charge to physicians and managers in hospitals, clinics and nursing homes. All others: \$67.80 per year (\$60 + \$7.80 HST). Registration number 899059430 RT. ©2023 by Canadian Healthcare Technology. The content of Canadian Healthcare Technology is subject to copyright. Reproduction in whole or in part without prior written permission is strictly prohibited.

Send all requests for permission to Jerry Zeidenberg, Publisher. Publications Mail Agreement No. 40018238. Return undeliverable Canadian addresses to Canadian Healthcare Technology, 1118 Centre Street, Suite 204, Thornhill ON L4J 7R9. E-mail: jerryz@canhealth.com. ISSN 1486-7133.

Publisher & Editor Jerry Zeidenberg jerryz@canhealth.com

CTIO

Office Manager Neil Zeidenberg neilz@canhealth.com can't really merge the two systems, but the concept of an Early Warning System is transferrable.

Farrow said the design of system is also very important. It has to be easy to use. And it must not add to the staff workload.

"Any time you ask someone to do something on top of what they're already doing, it's difficult. People are already stretched.'

He said the EWS uses the data that's already being collected by nurses and that's transferred to the electronic health record system. It takes this data, runs it through the algorithm on its own, and makes decisions.

If the trending of vital signs and other observations hits certain levels, the system will automatically alert the appropriate clinicians.

This actually reduces the workload of nurses, as they're not required to contact physicians - the system does it on its own.

"It takes a lot of stress away from the nurses," said Farrow. "In some cases, they're not sure of whether they should bother a doctor, especially if it's 2 a.m. They may be hesitant to call. But the system will automatically do it, once it reaches certain thresholds."

Farrow said many staff members at Oak Valley Health have dedicated time to further developing the algorithm and digital twin technology that was devised by ThoughtWire.

As well, about 10 people at the longterm care organizations - from executives to frontline caregivers - have helped fine tune the solution for use in nursing homes.

Dale Hall, executive VP and co-founder at Thoughtwire, noted that the EWS at Oak Vallev Health monitors more than just vital signs of patients. It also models the patient's medications, orders, clinician assignments and more - all in real-time. As a result, it's creating a 'digital twin' of the patient.

It's an effective way of predicting the decline of a patient into cardiac arrest, sepsis, and other acute care problems. "The system is monitoring about 14 factors," said Hall.

In addition to vital signs, the EWS takes cognitive acuity and pain scores into consideration, issues that are logged by nurses.

On the long-term care front, Hall said the system has been expanded to meet the needs of nursing homes and their residents. More behavioural factors are monitored, such as nutrition and whether the resident has been eating, and whether he or she has been interacting well with staff and other residents.

Declines can be flagged, alerting a wider range of staff to the resident's issues. Hall observed that the system is becoming a means of sharing information among staff members, as it's collected and displayed in a central place.

Contributing Editors Dianne Craig dcraigcreative@yahoo.ca Dianne Daniel

dianne.l.daniel@gmail.com Dr. Sunny Malhotra Twitter: @drsunnymalhotra

Norm Tollinsky tollinskyn@gmail.com Walter Caniparoli art@canhealth.com Art Assistant

Art Director

Joanne Jubas joanne@canhealth.com





THE FUTURE OF PATIENT INFORMATION EXCHANGE IS HERE

Traverse Exchange Canada is a first-of-its-kind cloud-based data exchange network that enables the free flow of health information from participating organizations so that providers can see the complete patient story.



Secure

Securely connect to a network of outside sources to consume patient information using a federated, query-based approach.



One Connection

Reduce the IT burden by exchanging data with any EHR that complies with interoperability standards through a one-to-many connection.



Timely

Deliver safer care by providing clinicians with a complete picture of their patient's records.





New gen AI system from AWS reduces paperwork, physician burnout

BY JERRY ZEIDENBERG

EW YORK – Amazon announced the launch of its AWS HealthScribe at a company summit here in July. It introduced an AI-powered system that's designed to save hours of time for physicians by automatically listening to encounters with patients and turning out full transcripts or summaries containing the most meaningful data.

The system uses generative AI, allowing users to engage with it in plain English. AWS says the solution will significantly reduce physician burnout by cutting the amount of time doctors spend taking notes and filling out forms.

"There's a lot of time spent by clinicians on paperwork," said Tehsin Syed, general manager of health at AWS. "It can take them twice as much time to fill out forms as the time they spend face-to-face with the patient. We want to reduce that."

"We're allowing them to focus more on their patients, as many of them are trying to do their paperwork at the computer at the same time they're talking to patients."

HealthScribe can even tell if more than one person is with the patient and captures their conversations, too. Often, a son or daughter – or a friend or caregiver – will accompany an elderly parent to an appointment to help. The system parses out each speaker and produces an accurate transcript of the conversation.

The Large Language Model used by HealthScribe has an extensive medical vocabulary and identifies medical terms in



AWS Vice President Swami Sivasubramanian gave the keynote at the Health Summit in New York City.

the encounter, such as specific medications, tests and procedures.

When using the HealthScribe summaries, doctors can track the source of every line in the original transcript, giving them trust in the notes. The summaries, furthermore, can be added to the physician's electronic records.

Earlier this year, Microsoft and its subsidiary Nuance announced a similar product called DAX Express, which also makes use of generative AI to monitor the ambient sound in the doctor's office to produce reports. Syed said HealthScribe differs from DAX Express in that it's an API to be used by partner companies to produce solutions, while DAX Express is a product for the end-users – namely, doctors.

3M and its subsidiary M*Modal is one of the first companies to use AWS's HealthScribe; it will begin marketing a product in the Fall that can be deployed by doctors to help produce transcripts, summaries and reports.

Nuance and 3M/M*Modal are the giants in the dictation/transcription business, so it's a natural progression for them to have created products that make these tasks even easier for doctors.

For its part, 3M claims about 300,000 doctors worldwide are using its speech technologies, while Nuance says it has approximately 550,000 doctors who are customers.

Syed said that many applications will be developed using HealthScribe and AWS's other generative AI solutions, such as Bedrock, a foundational system. Using these building blocks, the partner can more quickly design, test and market a solution.

"The partner doesn't have to do all the work on the underlying Large Language Model," said Syed. "They can go to market faster, and they can rely on the underlying security in the solutions."

He commented that generative AI, the latest iteration of artificial intelligence, is different than previous versions in that users don't have to be data scientists or I.T. experts. With earlier AI systems, a lot of labeling or tagging had to be done, something that was needed for the sake of accuracy but was time consuming.

Now, with gen AI, the systems understand natural language and can be used by the layman. "You don't have to do all that labeling," said Syed.

Indeed, the building blocks of gen AI systems have already been trained to understand human languages, whether it's English, French, Urdu or any number of others. Companies can take these foundational components and create solutions for end-users much more quickly.

Company is developing AI-powered 'super-nurses' to solve problems

BY JERRY ZEIDENBERG

AWS customers like Hippocratic blocks of generative AI – such as Large Language Models – and producing meaningful solutions. In the case of Hippocrates AI, the Silicon Valley company is building a system that provides you with a computerized nurse.

At a time when there is a severe shortage of nurses, and few follow-ups for patients after they leave hospital, Hippocratic AI will soon release a system that has virtual nurses checking up on patients by telephone as many times as desired.

The system converses in English, and can ask the patient: how are you feeling? Have you been taking your medicine? Do you need a medication refill? Is your wound healing?

If there are any problems, the AInurse can respond, as well. For example, many patients don't take their prescriptions when they get home. Sometimes, it's because the meds didn't agree with them and there were side effects.

The virtual nurse can respond by saying, 'Let's call the doctor for an appointment. He'll prescribe a different medication that may not have this side effect."

Additionally, the virtual nurse can

arrange a ride for the patient, if needed.

"Most of the problems dealt with by visiting nurses are logistical and not diagnostic," said Munjal Shah, co-founder and CEO. "They're checking on whether the patients are taking their meds, whether they need to see the doctor, and

even if they need a ride." Right now, there are too few nurses to

attend to patients for follow-ups and to solve these problems. "But if you don't solve them, the pa-

tient gets worse," asserted Shah. He explained that patients need to be checked up on to ensure they get better. "The idea is to solve the staffing prob-

lem," said Shah.

Hippocratic AI is working with doctors, nurses and AI experts to produce its safety-focused system, which he said should be ready to go in early 2024.

The company's founding partners include HonorHealth, Cincinnati Children's Hospital, UHS, ELNA Medical, SonderMind, Vital Software and Capsule. In May, Hippocratic AI raised \$50M in seed funding from Silicon Valley venture capital funds General Catalyst and a16z; in July, as part of its Founding Partner Program, the company added an additional \$15M to the seed round, bringing total funding to-date to \$65 million. But before it's launched, Shah wants to make sure the solution is effective and works as it should. That means getting the thumbs' up from a majority of a panel of 1,000 nurses.

Clearly, the time is right for a solution of this sort. Shah notes that there are 68 million Americans with one or more chronic conditions, but only 3 million nurses. It's impossible to find enough nurses to care for these patients.

"But gen AI could be a chronic care nurse – at \$1 dollar an hour. And with

Hippocratic AI will release a system that has virtual nurses checking up on discharged patients by telephone.

an IQ of 130, the virtual nurse can easily pass the nursing exam," said Shah.

This virtual nurse with a voice can also be trained to have an excellent bedside manner. It's also not in a rush.

Shah points out that most seniors want to talk on the phone. They're lonely and like to chat. And they all know how to use the phone – unlike tex-

ting or logging onto the computer. Not only can the nurse be trained to be empathetic ("you have back pain? That's terrible, I've had back pain myself and I know what it's like"), it can also detect different tones and moods in the patient on the telephone. This, too, can be responded to.

Shah commented that this all takes a great deal of processing power – especially if you're ramping up and providing a large number of virtual nurses. For this reason, Hippocratic AI has turned to AWS and its cloud solution powered by nVidia servers and Amazon's Sagemaker application, which enables the company to develop its sophisticated nursing system.

Shah noted that recently, 10 new healthcare systems have signed on to test the application. One of them is a large pharma group, and Hippocratic AI's virtual nurses are going to start calling patients two days after they've been prescribed a medication to check on compliance and side effects.

The AI-driven nurses could be the solution to many healthcare staffing problems in both the United States and Canada. At a time when it's difficult to find nurses, a virtual nurse could be all that's needed. Shah is calling them 'super-nurses', and although he says he's trying to come up with a better name, that one may be right on target.

YSIO X.pree

A Leap forward in intelligent X-ray imaging

siemens-healthineers.ca/ysio-xpree

YSIO X.pree offers a streamlined & easy-to-use interface and a brand-new, smart imaging concept. Its 3D camera allows for enhanced patient positioning and advanced collimation techniques. Let YSIO X.pree help you transform care delivery – with optimized clinical operations and an improved user and patient experience. Shape the future right now and be ready for the developments of tomorrow.

By delivering a live patient image to the workstation, myExam 3D Camera enables myExam Collimate, which comprises three revolutionary new features:



Virtual Collimation – Using the touchscreen workstation, technologists can quickly collimate or perform collimation adjustments immediately before taking an X-ray.



Auto Thorax Collimation – An Al algorithm automatically detects the thorax and collimates accordingly, leaving your team to fully focus on patients.



Smart Virtual Ortho – Thanks to Virtual Collimation based on the live patient image, users benefit from visual guidance that reduces guesswork in orthopedic exams. By cutting the time between collimation and exposure, this solution may also reduce retakes and walking time.



Fraser Health sees benefits through IT upgrade, is ready to expand

BY DIANNE DANIEL

URREY, B.C. – Fraser Health has embarked on a large-scale program to modernize its electronic technology and the way it delivers care. The core technology being used is MEDITECH's Expanse platform. All of the additional solutions being used will feed into Expanse, giving clinicians and administrators a single view of the patient experience across the giant region.

At the same time, the health authority is introducing new, automated medication dispensing cabinets, front-end speech recognition for clinical note dictation, and tap-and-go roaming desktops that allow employees to securely log into electronic records using their ID badges.

As the province's largest health authority – and the second largest health system in Canada – Fraser Health delivers hospital and community-based services to 1.9 million geographically dispersed people. It's supported by more than 30,000 medical staff.

Management and clinicians at Fraser Health realized that with steadily increasing patient loads and medical challenges, new ways of delivering care were called for. As a key strategy, the region is improving its workflows and ensuring that information is available at the point-of-care in real-time.

This will enable more efficient decisionmaking, limit "document chasing", reduce the risk of errors and enable care-providers to spend more time with patients.

Victoria Lee, president and CEO of Fraser Health, said earlier this year: "Digital transformation is foundational to provid-



Jennifer MacGregor

ing better health and best-in-health care."

In April of this year, the health authority began implementing the system – centred around Expanse – at the Eagle Ridge Hospital in Port Moody. The success of the deployment has given the entire region confidence in speeding up the rollout to its 11 other hospital sites.

Benefits of working in a digital environment are already being reported at Eagle Ridge, with some nursing staff stating they've gained back two hours per shift at the patient bedside.

One group eagerly awaiting the rollout of Meditech Expanse to all sites is the Fraser Health Advanced Analytics and Data Science team, who've been delivering insights based on retrospective data for the last few years.



Dr. Amyeen Hassanali

"They've built so many different AI models with just rudimentary data that we're pulling retrospectively. The ability to have almost near real-time data available to help inform and further optimize those models will take us even further ahead from where we are today," said Dr. Amyeen Hassanali, chief medical information officer and one of five program sponsors, referring to the ability to do more predictive analytics and early warning interventions.

Analytics and AI-powered forecasting will provide the region with a system of continuous quality control and improvement – an enormous benefit for patients.

Moving forward, the remaining 11 Fraser Health hospital sites are being clustered into five Expanse activations. Fraser Canyon and Mission Memorial hospitals, rural systems similar in size to Eagle Ridge, are scheduled to go live this fall, and the Royal Columbian Hospital, considered a sister site to Eagle Ridge is scheduled for April 2024.

A final grouping is expected to go live in 2025 and will include smaller facilities and long-term care centres.

In the interim, links will connect the new Expanse system and the remaining legacy MEDITECH client/server systems, giving clinicians access to records when patients travel between sites.

Dr. Hassanali stressed that change management and training are essential to a successful implementation. Not only is new hardware and software being deployed, but staff and clinicians need to work in different ways to obtain the benefits of real-time information and quality systems.

For example, for clinicians, new electronic ordering and regional order sets are being implemented, requiring them to work differently than before.

Similarly, nurses are learning how to use a real-time electronic documentation system, closed-loop medication management and medication verification using barcode scanning. Some of them will also be using handheld devices to support bedside documentation.

New, electronic solutions are also being introduced in pharmacy, lab, and diagnostic imaging.

Changes are being made in registration and scheduling, too, with streamlined workflows for scheduling acute and ambulatory settings. The new system simplifies CONTINUED ON PAGE 19

Remote patient monitoring program receives positive response

BY SAHAR KHAN

ORONTO – Since the launch of the new innovative remote patient monitor (RPM) program earlier this year, in collaboration with Microsoft, Bayshore HealthCare is seeing a positive response from patients, families and healthcare providers.

Vantage by Bayshore, which leverages the power of Microsoft Cloud for Healthcare and adaptable technology found in the Bayshore Digital Experience Platform, is a cloud-based solution aimed at improving health outcomes for patients and families in hospitals, home and communities across Canada.

Vantage helps address staffing shortages, improves access to high-quality care for remote and underserved patients, and it reduces the cost of care delivery. It also provides families and caregivers with real-time information on the health condition of their loved one or patient.

With the support of Bayshore's clinical team, dedicated nurses closely monitor patients' progress, engage with caregivers and their circle of care, and promptly respond to any changes in a patient's condition. This comprehensive approach enables healthcare providers to remotely monitor patients' health, intervene in a timely manner, and reduce avoidable hospital readmissions and Emergency Department visits.

Melanie Hanje, a nursing manager at Bayshore and a clinical manager of the @home programs that Bayshore provides at North York General Hospital, Unity Health Toronto, and Osler@home Program, highlights the benefits of the RPM program in enabling community healthcare providers to engage with and manage clients' health virtually.

"Patients and families are given the confidence and ability to participate in their own healthcare at home," says Melanie.

"They are supported by a virtual team offering assessments, health teaching, and escalation when necessary. As technology advances, RPM will be able to support clients at home with more complex co-morbidities and will further reduce Emergency Department visits and increase successful transitions from hospital to home."

According to Amanda Essue, former Bayshore nurse and now clinical lead of North York General Hospital, Unity Health Toronto and the William Osler@Home Program, RPM has already made significant contributions to better patient care.

"RPM has contributed to better patient care, by being able to monitor vital signs in the home and most importantly, being alerted when vitals are out of parameter goals.

Having these devices has provided our team with a sense of relief to know that our patients are safe at home and being monitored daily," Amanda explains. "This

Vantage provides Health Canada-approved devices to collect vital signs and offers convenient enrolment.

has also increased our ability to understand our patients better and their daily needs so we can service them to the best of our knowledge and ability."

Whether for use in hospitals, home and community care, or by patients and caregivers, the Vantage program follows a five-step plan:

1) Build a tailored program: healthcare providers enroll patients in a program based on diagnosis then monitor remotely and create customized templates with goals and alerts for out-of-range vitals. Vantage provides Health Canada-approved devices to collect vitals and offers convenient electronic referrals/enrolment.

2) Create SMART goals: Vantage tracks progress towards personalized SMART goals tailored to an individuals' needs. Healthcare providers can choose pre-defined templates or customize them based on specific parameters like age and sex.

3) Monitor observations: healthcare providers monitor vitals using the provided medical devices such as heart rate, oxygen saturation, temperature, blood pressure, blood glucose, and body weight. Healthcare providers can add other non-biometric assessments as needed, including pain scales, symptom progress tracking, and more.

4) Respond to alerts: Vantage sends alerts to caregivers via email when observations exceed the defined goals or adherence goals are not met. Alerts help healthcare providers intervene early and prevent adverse health outcomes.

5) Take action with interventions: healthcare providers can address a specific alert by following up over the phone, video, or in person. Healthcare providers can communicate additional offline interventions and update a patient's goals or care plan as needed.



8







Scan here to know more

Revolution[™] Apex Platform

Lead CT now and into the future

Meet the CT that grows with you

The future of CT is here, and ready for whatever comes next. With the Revolution Apex Platform, you have the option to choose 40 mm, 80 mm or 160 mm of coverage, allowing you to decide which system is right for you today, and easily upgrade to even greater capability when you need it.



(%)

Best-in-class technology in every dimension of



the CT imaging chain

Unprecedented clinical solutions across a wide range of care areas



Future-ready platform ensures quick access to the next generation of CT innovation

© 2023 GE HealthCare. GE is a trademark of General Electric Company used under trademark license.

JB00937CA

Simulation centre helps prepare Emergency staff for difficult cases

ONTREAL – Healthcare professionals at the Jewish General Hospital Emergency Department can now plan and participate in simulation exercises with greater ease and flexibility, following the official launch in June of a bright, spacious and technologically sophisticated Emergency Medicine Simulation Centre.

The Rhona and Errol Stern Simulation Room and the Hart Family Teaching Room enable Emergency Medicine (EM) personnel – attending staff, nurses, medical residents and students and respiratory therapists – to hone their abilities by working on a life-like manikin whose complex, life-threatening medical conditions mimic real-world emergency situations.

Since the instructive simulations are conducted in a setting where real patients are not at risk, participants can practice their skills in a safe learning environment and gain insights that allow them to better handle a wider range of medical emergencies.

The state-of-the-art studio quality of the audio-visual system in the new centre also allows non-participants – those who are not directly involved in the simulation – to observe by video-conferencing in an adjacent or remote conference room in the hospital or even at home. Thus, these observer-learners can also benefit from the simulation experience.

Especially important in the process of learning through experience is the postsimulation debriefing. It allows learners to share their thoughts and explain their actions, with an opportunity to explore what went well and what aspects of the scenario could be improved.

r. Errol Stern, director of the JGH Emergency Medicine Simulation is just an excuse to debrief. It allows participants to gain a clear understanding of their actions and thought processes to enhance future clinical performance."

Dr. Stern, who is also director of the Simulation Program in the Department of Emergency Medicine at McGill University's Faculty of Medicine and Health Sciences, adds that the participants in the simulation room and the observer-learners are all involved in the debriefing process. As a result, they are equipped with increased knowledge and skills, and are better prepared to deal with unstable ER patients.

The focus during simulation scenarios is on an adult-sized manikin that not only breathes and blinks realistically, but has a pulse and is voiced by one of the facilitators at a microphone in the control room.

Near the manikin on its examination table are monitors that display the vital signs of the artificial patient – including pulse, blood pressure and oxygen saturation of the blood – plus bedside ultrasound videos.

Separating the participants in the simulation room from the facilitators in the control room is a large one-way mirror. Seated at a large instrument panel, the facilitators create a realistically stressful atmosphere by making frequent and sudden changes to the patient's physiological condition and emotional state.

Dr. Eleena Pearson, who is a senior at-



Every simulation has a nurse participant, and nurses are involved in developing cases for their colleagues.

tending member of staff in the Emergency Department and a simulation educator, emphasizes that everyone learns, including the staff.

Dr. Pearson explains that she recently participated in a simulation session involving a patient with myasthenia gravis, a chronic neuromuscular and autoimmune disorder that is not often seen in the ER.

Not long afterward, Dr. Pearson found herself with an actual ER patient who had the very same condition. She credits her participation in the simulation session with her ability to recognize the condition quickly and treat it appropriately.

Dr. Arzu Chaudhry, a new attending member of staff in Emergency, echoes Dr. Pearson's sentiments. As a recently graduating EM resident, Dr. Chaudhry says she enjoyed learning in a safe, dynamic simulation environment.

She has made the transition from a resident-learner to teaching and facilitating simulated cases as a member of staff, which she considers a "huge opportunity" to give back to the EM residency program.

t was Dr. Marc Afilalo, chief of the JGH Emergency Department, who envisioned advancing EM education in simulation by converting two conference rooms in the hospital's Pavilion H to the Emergency Medicine Simulation Centre. Dr. Stern says his leadership and vision are appreciated by all members of the JGH multi-disciplinary team in Emergency and by EM residents. With Dr. Afilalo's unwavering support to promote staff expertise and the initial financial contribution of the Hart Family and by Rhona and Errol Stern, the Simulation Centre has flourished.

Dr. Afilalo praised Dr. Stern for making the centre a reality, describing him as "the key element in this project. When Errol has a dream, he follows it, no matter what happens, and he managed to gather a whole team behind him."

As well, Dr. Afilalo noted that the centre owes its success to the efforts of the depart-

When participants debrief, they gain a clear understanding of their thought processes to enhance future actions.

ment's many doctors, nurses and respiratory therapists. "At the Jewish, we love to say we're a family. We have a wonderful team in the Emergency Department and we're all members of a family – that's our major strength."

Another strength of the centre is its multi-disciplinary approach to learning, Dr. Stern added. "Every scenario has a nurse participant. Nurses are involved in developing cases with objectives and learning points that are specific to nursing. Where appropriate, we also involve respiratory therapists in cases where patients require respiratory life support."

Dr. Haran Balendra, a member of the



Facilitators in the control room can create a realistically stressful atmosphere, with sudden changes.

EM team, is especially impressed by "the versatility of the audio-visual system, in which every participant is clearly heard by the remote observers, as well as by the facilitators in the control room."

"In addition, the facilitators can secretly talk to a confederate nurse or respiratory therapist who is in the simulation room, but who works with the facilitators. If the facilitators in the control room feel that the scenario needs a nudge in the right direction, they can provide a confederate with a fact or a suggestion through their earpiece speaker that puts all of the other participants back on track."

"Furthermore," Dr. Stern adds, "participants are encouraged to request help, when appropriate, by placing a phone call to a consultant, who is role-played by a facilitator in the control room.

"It is now possible for that conversation – with the simulated consultant, ICU doctor or poison control centre – to be broadcast, so that the suggested advice can also be heard by the observer-learners at the remote location."

For the simulation to be well received, Dr. Stern says, the participants need to be properly oriented to the manikin, the simulation room and its equipment, as well as to what is expected from them.

"That's why we hold pre-briefings, where we emphasize that the facilitators believe that the participants are intelligent and motivated, and that they care about doing their best and want to improve.

"We also point out that the facilitators need to focus on how the participants work together as team.

"We stress elements of crisis resource management, which includes establishing a leader, encouraging the leader to share his or her mental model with the others, and urging followers to share their opinions. Promoting thoughtful and timely communication is highlighted."

r. Stern proudly notes that the value of the EM simulation was reconfirmed during the COVID-19 pandemic, when an educational simulation program was developed to teach healthcare workers how to safely deliver care to those who had been infected with the virus.

"We produced videos, conducted Grand Rounds with over 500 Zoom participants, set up many simulated practice sessions, and even created an accredited online course with the assistance of the Teaching and Learning Services at McGill University."

Dr. Stern calls the performance of the new Simulation Centre "exemplary. It's been extremely engaging, and what's especially interesting is that the residents really enjoy being facilitators and sitting at the controls.

"The system is sophisticated, yet simple enough to operate that even residents who are unfamiliar with the technology, can learn to use it quickly and easily."

This is a result of the many hours spent in customizing the design from the ground up, a collective effort by JGH's IT Department, Global Unified Solution Services, CAE and Dr. Stern.

This article is courtesy of the Jewish General Hospital.

Medtronic

Engineering the extraordinary

Designing life-transforming technologies that put people first

Using tools like AI, robotic-assisted surgery, and data analytics, we are reinventing care to help make it more efficient, accessible, and equitable.

Learn more at Medtronic.ca

Made-in-Canada AI system is assisting physicians across the country

inally, technology that works for me and not me for it!" is Dr Devan Reddy's first thought when asked about Tali, an AI Assistant focused on helping physicians with their administrative tasks and documentation.

It has improved the quality of his notes and his patient visits, says the Prince George, BC physician. "And capturing my patients' words as they intended them and not as how I interpreted them is a game changer for the art of history taking."

Tali presents a transformative solution for healthcare professionals, significantly streamlining administrative tasks and documentation.

With its innovative Ambient Scribe feature, this AI Assistant actively listens to physician-patient conversations, seamlessly generating clinical notes tailored to the user's preferences. The provider can review the generated note, edit it then and there, and copy it into their EMR. The same approach can generate any other clinical document as well, be it a consult note, letters, and so on.

"We know healthcare providers are struggling, and we wanted to help," said Katherine Tattum, Tali's chief operating officer. "Technology can take on a lot of the important, but rote, administrative tasks. It is vital that the human remain in control: Tali will only draft the document, the person driving it will always have the opportunity to edit, refine and improve what is written."

Tali has more than Ambient Scribe. Leveraging cutting-edge speech recognition and natural language processing (NLP) technologies, Tali's Medical Dictation demonstrates remarkable accuracy in recognizing medical vocabulary and terms, thereby aiding clinicians in the process of dictating comprehensive notes.

Tali's Medical Search feature provides quick, voice-enabled searching of evidence-based sources for drug and medical inquiries, while the EHR Assistant facili-



The Tali Al Assistant was created by Mashid Yassaei and Hesam Dadafarin. The solution continues to evolve.

tates efficient voice-activated actions within Oscar Pro, such as creating reminders or opening forms.

The response from Tali's users has been extraordinary, according to Mahshid Yassaei, CEO and co-founder of Tali. "We are thrilled to witness the positive impact Tali has on physicians' daily lives, allowing them to connect with their patients and purpose," Yassaei shares.

Tali started as a voice-enabled COVID Q&A chatbot for healthcare professionals early in the pandemic. While the need for that solution was short-lived, it convinced Yassaei and her co-founder, Hesam Dadafarin, that their speech recognition technology could handle the terminology used in healthcare.

The Toronto-based pair have built up the company with the long-term goal of taking on all administrative work associated with a patient's visit.

Today, physicians are leveraging Tali for various tasks, including drafting notes, let-

ters, and other clinical documents as well as using voice commands in their EMR. The benefits derived from Tali are substantial – physicians can dedicate more attention to their patients while experiencing faster note generation, all without sitting at the computer.

"Tali creates more trust between me and my patients," because she is able to be more present and focused, reported Dr. Madhu Azad, lead physician at Superior FHO in Thunder Bay, Ontario. "I would also say it currently saves me around one hour and 20 minutes a day. I no longer work outside of my clinic. Before, if I finished at 4 pm, I would be working until 5:30. Now, I leave by 4:15."

Dr. Keith Thompson of London, Ont., concurred. He appreciates the technology for granting him additional time to optimize compassionate care and improve patient interactions.

With Tali, "sometimes the interview ends early enough for me to ask patients

about their family, their hobbies or their recent travel adventures," commented Dr. Thompson.

Tali sets itself apart from competitors through several distinctive features. Firstly, its speech recognition system is trained on a diverse range of Canadian accents, ensuring accurate transcription. It boasts French speech recognition trained on Canadian speakers, catering to francophone healthcare professionals.

Additionally, the generated notes are instantly accessible, eliminating the need for waiting. Tali is compatible with any computer – it works on both Mac and Windows operating systems, and is available as a Chrome extension for web-based EMRs – and seamlessly integrates with various EMR systems.

The Tali team offers free onboarding sessions to get users started, with a dedicated Customer Success team available throughout their journey.

EMR vendors are keenly aware of the possibilities presented by Tali's innovative AI solution. In particular, WELL Health recognized the potential early on and became an investor in Tali in 2021. In fact, they have taken their partnership a step further by white labelling Tali's technology as the foundation of their own offering, WELL AI Voice.

Any clinic using one of WELL's EMRs (OSCAR Pro, Profile EMR or Cerebrum) can enable WELL AI Voice within their practice.

The advent of technologies such as Tali is already demonstrating a transformative impact on the medical field, reshaping the way physicians practice by alleviating the burden of administrative tasks and documentation that have long plagued healthcare professionals and contributed to physician burnout.

As these technologies continue to advance and become more sophisticated, they hold the potential to address an even broader range of administrative responsibilities.

Hypercare smartphone solution enhances clinician communication

ORONTO – In the era of smartphones and social media, it's hard to believe that pagers are still in use. If you're under 40 years of age, you've probably never seen a pager, let alone used one. Unless, of course, you work in a hospital, one of the last bastions of these once-essential communications devices.

In the 1990s, more than 61 million pagers were in use. Eventually, the Black-Berry and smartphones replaced the portable, mini-radio frequency devices.

Today, there are just over one million active pagers, with most of those found in a hospital or clinical setting. Hospital pagers have persisted, in part, due to their simplicity and familiarity. But now even that's changing.

At Southlake Regional Health Centre in Newmarket, Ontario, for example, more than 500 physicians, nurse practitioners, and midwives have become the latest health professionals to replace their pagers with a comprehensive, secure suite of digital healthcare collaboration tools developed by Hypercare, a Canadian startup based in Toronto.

"Hypercare has significantly improved our efficiency," says Dr. David Srour, physician leader for the Medicine Program at Southlake. "Team members submit requests through the secure messaging app, allowing me to respond immediately within the platform."

Dr. Srour says the Hypercare app has improved collaboration among the care team, which has helped improve patient outcomes. So, when the hospital was looking to upgrade its existing pager system earlier this year, Southlake took the opportunity to explore Hypercare's suite of tools.

"We've been able to build schedules for the physicians who are on-call and reach out to them in real-time, improving access to different specialty areas," he says. "From a patient care and safety perspective, we've seen a significant im-



provement in the speed at which we're able to collaborate with those specialists."

This improvement was clearly demonstrated just a few days after Southlake went live with Hypercare when a patient presented in the Emergency Department (ED) with what the attending physician suspected was necrotizing fasciitis. Previously, the care team waited for an on-call plastic surgeon to respond to a page.

With Hypercare, an urgent message sent through the app helped ensure the plastic surgeon responded immediately using read receipts, helping to improve the response time.

This example isn't a surprise to Dr. Joseph Choi, an emergency physician who is also co-founder and chief medical officer at Hypercare.

"As an emergency physician, everything for us is timely," says Dr. Choi. "I've had my pages delayed for hours when five or 10 minutes can make the difference. That can have an impact on a lot of things, but most of all on patient care."

Founded in 2016 by Albert Tai, Umar Azhar and Dr. Choi, Hypercare

Read all about it.

Canadian Healthcare Technology, published eight times per year, is sent free of charge to managers of hospitals and clinics, and executives in nursing homes and home-care organizations. Qualified subscribers need only periodically renew their subscription information to ensure continued delivery of the magazine. Please take a minute to complete your renewal and make sure Canadian Healthcare Technology keeps coming to you – absolutely free.

THERE ARE TWO WAYS YOU CAN SUBSCRIBE:

SUBSCRIBE

ELECTRONICALLY

VISIT OUR WEBSITE

www.canhealth.com

FILL OUT AND SUBMIT THE FORM ONLINE AT <u>www.canhealth.com/subscribe</u>
 or FILL OUT THE FORM BELOW AND FAX IT TO 905-709-2258

COMPLIMENTARY SUBSCRIPTION REQUEST

(PLEASE PRINT) Name	Your organization's business or industry?		If you are employed by a hospital, which of the following categories
Title	Hospital		would best apply to you?
	Health region		CEO/President/VP/Executive Director
Company	Long-term care institution		Finance
Address	□ Home care		MIS
			Medical Director
City	□ Government		Physician
Province Postal Code	University		Purchasing
	Computer or software vendor		Nursing
Telephone	Telecommunications vendor		Pharmacy
	Medical device vendor		Radiology
Fax	VAR or systems integrator		Pathology & Laboratory
E-mail	□ Education		Human resources
	□ Finance/insurance		Health records
Signature Date	Consulting/legal		Public relations
Signature required for authenticity purposes only. All data must be supplied for subscription to be processed. Publisher reserves the right to determine qualification. Valid only in Canada.	Public relations		Quality assurance
	Other	_	Other

IF YOU HAVE SUBMITTED A SUBSCRIPTION REQUEST IN THE PAST 12 MONTHS, EITHER ONLINE OR BY FAX, PLEASE DISREGARD THIS NOTICE.

Healthcare Technology

Nova Scotia invests in PACS upgrade, implements leading-edge capabilities

ova Scotia has upgraded its picture archiving and communication system (PACS) across 40 locations, modernizing the hardware and software and providing the latest innovations in digital storage of medical imaging.

Moreover, the enhancements give radiologists new tools and will get them "future ready" for developments such as artificial intelligence (AI).

All of Nova Scotia's hospitals, including IWK Health, which delivers care to women, children, youth and families of the Maritimes, are now equipped with Agfa HealthCare's Enterprise Imaging solution.

Nova Scotia prides itself on having implemented one of the country's first province-wide PACS, something it did in the early 2000s. Since then, it has continued to upgrade its PACS. This latest deployment of the Enterprise Imaging solution is the most recent step in staying at the forefront of medical imaging.

The new PACS is comprised of two applications:

First, the Enterprise Imaging solution, which is used primarily within diagnostic imaging, emergency departments, orthopaedics, and operating rooms. And second, the updated XERO clinical web viewer, which is used in many departments for viewing medical images.

"Ensuring continued integration within our existing and future digital environment was one of our main objectives," noted Sandra Colavecchia, director of Enterprise Imaging with Nova Scotia Health's Information Management and Technology Team (IM/IT).

Cardiologists have already been using



the previous iteration of the PACS to store and access their images, something that will continue. At the IWK, the system will remain in place for the storing and viewing of images for Fetal Assessment Treatment Centre (FATC), ophthalmology, dentistry, and women's health gynecological laparoscopy exams.

"The new platform," said Colavecchia, "is the foundation of a provincial enterprise imaging strategy, which includes enabling the future storage of images from other clinical disciplines outside of the traditional areas of radiology and cardiology."

Agfa's Enterprise Imaging platform offers artificial intelligence features, such as triage reading prioritization, image pixel analysis, and the sharing of results of AI algorithms throughout the imaging process. However, these tools have not yet been implemented.

Lisa Shoniker, regional vice president sales for Agfa HealthCare Canada, said "the Enterprise Imaging platform is a single database which helps simplify the IT infrastructure by eliminating the overhead of routing, synchronization and replication."

After careful design and planning, the actual deployment of the new systems – Enterprise Imaging and XERO – occurred quickly, taking just five months from February to July 2023.

Colavecchia said the implementation was completed quickly because of the knowledge and skills of the I.T. and radiology teams. "We have a very strong team of PACS administrators, many of whom have been here since the original PACS implementations (in the early 2000s). They have a comprehensive understanding of departmental workflows."

"The new system continues to allow radiologists to function as needed across the province. They can access the images and information they require, no matter where the patient exams were taken," said Scott McKenna, CIO, Nova Scotia Health and IWK Health. "It's an end-to-end replacement and improvement of our hardware and software."

McKenna added that the project went quickly and smoothly because it had buyin from the clinical areas. It also had effective leadership from Dr. Judy Rowe, radiologist and physician lead of DI Informatics and Support Services within Nova Scotia Health's Central Zone. "She played a leading role."

For her part, Dr. Rowe said, "The upgrade from Agfa Impax to Enterprise Imaging is an important piece of the digital transformation strategy. It helps consolidate the patient record and allows radiologists easier access to the relevant imaging history of the patient, which is critical to optimal care."

The previous imaging system enabled radiologists in different locations to collaborate on the same patient exam. The new system is taking that functionality even further.

As an example, using Enterprise Imaging, the clinicians can share the mouse while viewing the same study, which improves that ability for collaboration in a virtual environment.

DI departments in Nova Scotia conduct about 1.5 million exams each year. "It's a monumental project," said McKenna. "It's expected to help the province more effectively manage the growing demand for diagnostic images now and in the future."

UHN 'pushes the boundaries' with arrival of next-generation robots

ORONTO – The robots have come, and with them, the age of innovation has fully arrived at the Sprott Department of Surgery at UHN. Within the span of a few weeks, multiple North American and Canadian "firsts" were successfully conducted. Patients who would normally have lengthier surgeries, longer and more painful recoveries, are now going home with minimal scars and fewer days in hospital.

"This is a magical time with respect to the robotic program," says Dr. Thomas Forbes, surgeon-in-chief, Sprott Department of Surgery at UHN. "We're advancing the number of robots significantly and we're bringing in the most modern and up-to-date platforms.

"Our team-based approach to robotic surgery is very important. There's been specific training with respect to our nurses, our technicians and our surgeons, and they're all world leaders."

Drs. Tony Finelli and Jason Lee, Chaya Shwaartz, Allan Okrainec and Sami Chadi, Marcus Bernardini and Genevieve Bouchard-Fortier led teams that utilized the new Medtronic Hugo and Intuitive's da Vinci Xi robots. "We are pushing the boundaries of robotic surgery and minimally invasive surgery," says Dr. Lee, urologist, Sprott Department of Surgery at UHN. "We can offer our patients cutting-edge technologies that may not be available anywhere else.

"We were really thrilled to be able to offer our patients the first North American commercial, Hugo robotic-assisted surgical procedure recently. We're lucky to have an amazing nursing team, and they were instrumental in making sure that the day went smoothly.

"Without them, I don't think it would have gone as well as it did. The new robotics platform is great, and the team was ready, so it was a fun day."

Multi-disciplinary teams spent months, and up to a year or more for some, training at the Temerty Advanced Surgical Education and Simulation Centre at the Michener Institute of Education at UHN, to use the new platforms.

The teamwork certainly made the dream work, as one successful surgery after another took place recently in Toronto General Hospital's operating rooms.

The myriad benefits to the patients, and the potential to grow the scale of the platforms to include artificial intelligence (AI), are only some of the reasons for excitement in the robotics program at UHN.

"The Temerty Simulation Centre is planning to be a centre of excellence for robotic training, working with various industry partners to have all different



Dr. Tony Finelli prepares for robotic surgery.

kinds of robots," says Karen Chaiton, senior director, Infrastructure and Academic Linkages, the Michener Institute of Education at UHN.

"There's still a lot of advancement within robotics. Right now, the robots are controlled by the surgeon generally from a console or from different placement of the robot, so it's not really operating on its own.

Eventually you'll see much more artificial intelligence layered into it, and so in the future, a robot might close on a case."

Robotic surgery has long been a passion for urologic oncologist, Dr. Tony Finelli, head, Division of Urology, Sprott Department of Surgery at UHN. More than a decade of investigation, education, and developed expertise have cemented his leadership role in this space.

"What excites me about the robot, and why I'm passionate about it, is that it allows me to be a better surgeon in general," says Dr. Finelli. "The surgery is associated with less harm to patients and with fewer morbidity side effects.

"In general, there are smaller incisions, less blood loss, faster recovery, less need for pain medication, and hopefully getting them back to a normal life as soon as possible."

This article and the accompanying photos are courtesy of the UHN.

YSIO X.Pree X-ray system uses AI to provide high-quality images

The YSIO X.Pree, an intelligent X-ray system from Siemens Healthineers, is available to imaging departments across Canada. With features that are intuitive (for easy operation), consistent (for excellent outcomes), and dynamic (for evolving needs), the ceiling-mounted Xray machine, YSIO X.pree with myExam Companion, redefines the way imaging centres manage their workloads.

It transforms care delivery with its streamlined and easy-to-use interface, 3D camera, and smart image processing.

"X-rays continue to remain the prevailing choice for diagnostic imaging. The YSIO X.pree, accompanied by myExam Companion not only elevates the quality of patient care but also eases the workload on technologists, enabling them to handle a larger volume of cases without compromising accuracy. As a result, the technology plays a crucial role in mitigating the impact of staff shortages, ultimately contributing to a more effective and sustainable healthcare system," says Peter Vidic, X-Ray Business Line Manager at Siemens Healthineers in Canada."

The award winning Ysio X.pree helps technologists prepare for X-ray image acquisition using AI. Based on the images from a 3D camera, the Ysio X.pree uses an AI-based algorithm with its Auto Thorax Collimation technique to automatically detect the thorax and thus sets the optimal acquisition area for the image acquisition.

The radiation is focused only on the relevant area, and the goal is to acquire an image containing all the necessary information with the lowest possible radiation exposure.

YSIO X.pree helps technologists easily engage with both the system and their patients. With myExam 3D Camera, they have a camera that allows them to keep the patient in focus at all times and provide reassurance.

It also helps users identify movements and supports high-quality outcomes. By delivering a live patient image to the workstation, myExam 3D Camera enables myExam Collimate, which comprises three revolutionary new features:

• Virtual Collimation: Using the touchscreen workstation, technologists can quickly collimate or perform collimation adjustments immediately before taking an X-ray.

• Auto Thorax Collimation: An AI algorithm automatically detects the thorax and collimates accordingly, leaving your team to fully focus on patients.

• Smart Virtual Ortho: Thanks to Virtual Collimation based on the live patient image, users benefit from visual guidance that reduces guesswork in orthopedic scoliosis & long leg exams. By cutting the time between collimation and exposure, this solution may also reduce retakes and walking time.

Consistency: YSIO X.pree helps you reduce unwarranted variations in images and offers an adaptable way to get there – one that is personalized, standardized, and flexible. YSIO X.pree introduces a brandnew, smart imaging concept that delivers an excellent level of consistency.

One way that YSIO X.pree improves consistency across different users is with the Positioning Guide. This can be tailored to your team's needs by editing individual patient positioning explanations, and it also increases standardization.

Lower dose: Sound diagnoses demand consistent images, but it is also important to minimize dose for patients. Dose Adaptions allow your team to tailor dose settings to its standards and apply the patient-size brackets defined in the Patient Size Adapter (S, M, L, XL). With Smart Virtual Ortho2, saving dose in orthopedic exams is easy: The live camera image enables accurate collimation and helps users to easily judge if they can perform an exam with fewer images. Dose adjustments per clinical image can further reduce dose.

myExam IQ is our new imaging concept deploying smart technologies to produce superb, consistent images. Intelligent noise elimination accesses image content and characteristic detector data.



Canadian Healthcare Technology magazine

Canadian Healthcare Technology breaks the news about important projects, programs and technologies, and provides hospital executives and senior managers with an excellent source of information for improving the delivery of healthcare. It's sent to over 5,200 readers in print format and to 6,800 opt-in subscribers as a digital edition.





eMessenger newsletter

Canadian Healthcare Technology's *e-Messenger* contains breaking news about important deals, installations and developments. Four blasts are sent each month, via e-mail, to over 7,000 senior managers and executives in hospitals, clinics and health regions.

White Papers

Canadian Healthcare Technology's *White Papers* are sent out once a month, via e-mail, to over 5,000 senior managers and executives in Canadian hospitals and health regions. The monthly blast contains summaries and links to White Papers issued by various organizations, providing cutting-edge information about topics of interest to healthcare decision-makers.





www.canhealth.com

For advertising or editorial inquiries, contact Jerry Zeidenberg, Publisher, jerryz@canhealth.com

AI-based systems for listening to patient encounters are now appearing

They could potentially reduce the paper load on physicians, reducing stress and burnout.

BY DR. SUNNY MALHOTRA

uance, the Microsoft-owned and AI-driven documentation company, is integrating its advanced artificial intelligence capabilities into Epic's electronic health records (EHRs). It's a significant move, since Epic is the largest medical software vendor in the U.S. hospital market, and it has a sizeable footprint in Canada, as well.

The integration will allow select healthcare systems to use Nuance's DAX Express, when it becomes available this fall in the U.S. and later in Canada. DAX Express is a cutting-edge solution that listens, transcribes, and automatically enters doctor-patient conversations into the medical record.

This collaboration between Epic and Nuance marks an essential milestone in the company's efforts to remain EHR agnostic while providing top-tier AIpowered documentation services. It's likely that the system will be integrated into other electronic health record systems, as well.

DAX Express, introduced by Nuance in March, has the potential to revolutionize notetaking in healthcare. By combining its AI with OpenAI's GPT4, DAX Express enhances documentation speed and efficiency. This advancement is a crucial step in addressing the longstanding issue of onerous documentation requirements placed on physicians.

The integration of DAX Express into Epic systems is expected to improve medical care delivery, streamline operations, and aid in research efforts.

One notable advantage of DAX Express is its speed, completing notes within seconds versus tran-

Systems like DAX Express, introduced by Nuance in March, have the potential to revolutionize note taking in healthcare through the use of genAI.

scribed notes which can be longer. However, since DAX Express is fully automated and reduces human reviewers, there are concerns raised about the quality of the generated text. There are still some limita-

Dr Sunny Vikrum Malhotra is a US trained sports cardiologist working in New York. He is the CEO of Cardiac Registry Support. www.cardiacregistrysupport.com. Twitter: @drsunnymalhotra tions in text generation that need to be addressed. For its part, Nuance stresses the need for physi-

cian oversight of the automated notes. It calls DAX Express a "co-pilot", but the physician must always stay in charge.

For its part, Amazon Web Services also announced a platform that can monitor the encounter between patients and doctors, create a transcript and summary, and enter it into the electronic patient record. Called Healthscribe, it's different than DAX Express in that it's being marketed to

other companies to create products that are marketed to end users.

Since we don't know what will happen in the future if systems of this kind receive the expert supervision that is required, and because we don't completely understand yet how generative AI solutions will be used, many in the industry have expressed reservations about the systems. This concern has led to the formation

of safety-focused organizations advocating for a more measured approach to AI integration in healthcare, exemplified by the transatlantic Re-

sponsible AI in Healthcare consortium.

Automating clinical coding: Enhancing efficiency and accuracy

BY AKRAM MUSTAFA

he world of healthcare is continually evolving, with ad-

vances in technology playing a crucial role in improving patient care and streamlining administrative processes. One area that has witnessed significant challenges in recent years is clinical coding.

Clinical coding involves the assignment of standardized codes to medical diagnoses, procedures, and treatments for accurate billing, statistical analysis, and quality reporting. However, healthcare organizations face several hurdles when it comes to efficient and accurate clinical coding.

One of the primary issues is the increasing complexity of medical codes. As medical knowledge expands and new treatments emerge, the number of codes required to accurately represent these diagnoses and procedures also grows. This complexity poses a challenge for human coders who must navigate through extensive codebooks and guidelines to find the most appropriate codes.

Furthermore, the coding process itself is time-consuming, often requiring significant manual effort. Human coders must review patient records, extract relevant information, and search for the corresponding codes. This manual approach is prone to inconsistencies and errors, leading to potential reimbursement issues, billing disputes, and inaccurate data analysis.

In addition to these challenges, healthcare organizations must adhere to coding guidelines and regulations to ensure compliance. Non-compliance can result in financial penalties and affect the accuracy of quality reporting, impacting patient outcomes and organizational reputation.

Staff shortages and productivity challenges further exacerbate the problem. The demand for qualified coders is high, but the supply is limited. The shortage of skilled coding professionals puts a strain on existing staff, leading to increased workloads and potential productivity issues. Moreover, training new coders and retaining knowledge within the organization becomes a significant challenge.

To address these issues, healthcare organizations are turning to technology solutions, specifically clinical encoders and computer-assisted coding (CAC) systems.

A clinical encoder is a software tool designed to assist with medical coding. It provides coders with a comprehensive database of medical codes, such as the International Classification of Diseases (ICD) and Current Procedural Terminology (CPT).

Coders can search for specific terms or diagnoses and retrieve the associated codes, reducing the time and effort required for manual code lookups.

On the other hand, CAC systems take clinical coding automation to the next level. These advanced software tools leverage artificial intelligence

Computer-assisted coding systems improve accuracy by reducing human errors and inconsistencies.

(AI) and natural language processing (NLP) algorithms to analyze clinical documents and assist coders in assigning appropriate codes. CAC systems offer features like document analysis, code suggestions, and validation and review capabilities, all aimed at enhancing accuracy and efficiency.

Compared to traditional encoders, CAC systems provide distinct advantages. Encoders are rule-based and rely on data entered by coders to assign codes. They often use lookups and drop-down menus to streamline the coding process.

In contrast, CAC systems leverage AI and NLP algorithms to train on vast amounts of clinical notes, improving their coding accuracy over time.

They can recognize patterns, understand context, and make intelligent code suggestions, reducing the burden on human coders and increasing efficiency.

The advantages of implementing CAC systems in healthcare organizations are numerous. Firstly, automation and efficiency are significantly enhanced, allowing coders to process patient records more quickly and accurately. This automation saves valuable time and resources, enabling coders to focus on more complex cases and critical tasks.

Moreover, CAC systems improve coding accuracy by reducing human errors and inconsistencies. The AI and NLP algorithms can interpret clinical documentation effectively, ensuring the correct codes are assigned based on the specific context of the patient's condition.

Akram Mustafa is Business Intelligence and Community Partnership Manager at London Health Sciences Centre.

Partnership brings high bandwidth to Northern Ontario communities

BY NICOLE BROWN

losing the health services gaps in rural Canadian communities requires partnerships between federal, provincial, municipal, Indigenous, healthcare and technology leaders.

This was certainly the case in Kenora, Ontario. In 2017, Indigenous, municipal, and healthcare leaders met in ceremony to sign a resolution to work collectively toward the development of a patient-centred healthcare system. The collaborative group, now known as the All Nations Health Partners, was formed out of the Kenora Area Health Care Working group to address a critical shortage of doctors and interprovincial issues.

In 2019, the ANHP became one of the first out of today's 54 Ontario Health Teams (OHT). ANHP is also the first team from the North, the smallest, and the only team comprised of all Indigenous and community partners. Together, the partners prioritized modernizing digital infrastructure for the purpose of delivering health services to surrounding First Nations communities that the OHT serves.

Through a partnership with a local IT company, FSET Inc., the initiative gained access to Starlink satellites to establish broadband internet access in these communities.

An expedited federal application with

the federal government's Universal Broadband Fund allowed for 90 percent of the cost of Starlink satellites for residential homes across First Nation's communities in Northwestern Ontario to be covered.

The next priority for OHT included extending high-speed internet access to community health centres in the covered regions. With support from Ontario Health, the OHT secured Starlink kits for each health centre and security appliances to secure the kits with ongoing operating support from an ANHP OHT partner, Ogimaawabiitong (Kenora Chiefs Advisory).

As of June 2022, all community-based health centres within the All Nations Health Partners were connected and secured.

The goal included having any primary care provider traveling to a community to be able to access the Electronic Medical Record, Telus PSS. The project successfully delivered on providers being able to use the EMR in communities where this just wasn't possible previously.

Maintaining security: As new digital infrastructure solutions are explored to bridge digital and healthcare equity gaps, initiatives must prioritize the security of both hardware systems and the data on software systems. Much like the provincial legislature controls healthcare services, the governments also prescribe information system security controls to help protect electronic health records.

In Ontario, the Personal Health Information Protection Act (PHIPA) outlines some of the necessary information to protect the information systems enabling digital healthcare. Yet, there is no universal standardized protocol for mitigating and reducing security



Nicole Brown

as the breadth of digital healthcare services expands. Comprehensive IT security risk frameworks must accompany the technology placed in rural communities.

on

Choosing a framework that uses a security control catalogue tailored to the Canadian context while assessing overall pros and cons, the scope of the security control profiles, and business-related security controls is essential.

Then, the security of healthcare activities should be categorized, and threat-related security control should be identified. The healthcare sector may require many security control profiles, so the ones with

the most significant exposure to cyber threats should be prioritized.

On the patient-facing side, this may look like mechanisms such as two-factor authentication for accessing digital healthcare information and cybersecurity training for staff. Internally, whichever risk management framework you use will require regular risk assessments.

The way ahead: There is no question that Canada's digital and healthcare divides are interrelated issues, especially for those living in rural and remote communities. Federal initiatives, such as the Universal Broadband Fund and provincial programming, such as Ontario Health, have been crucial for supporting localized groups working to bridge digital healthcare equity gaps.

With the expansion of broadband access, security issues related to healthcare data will continue to rise to the forefront. The path forward requires a commitment from private corporations, regional and provincial healthcare funders, Indigenous leaders, and health system stakeholders to hold each other accountable for prioritizing the efficiency of patient care as more broadband infrastructure projects continue across the nation.

Nicole Brown is a co-owner and COO of FSET Inc., an information technology and services provider.

Simplified. Work. Systems. Communication. Infrastructure. Is your imaging solution reducing complexity?

Meet the dual challenges of reduced infrastructure and increased growth with a single medical enterprise imaging solution.

Learn about the AGFA HealthCare Enterprise Imaging Platform and the Imaging Health Network[™].

agfahealthcare.com



That's life in flow.

Health Espresso system enables patients and caregivers to share information

Communication is reducing pressure on emergency rooms and treating patients in the community.

BY NORM TOLLINSKY

he difficulty of sharing patient information across a patient's circle of care in Canada's siloed health care system was glaringly obvious to Rick Menassa when he took the reins of iCare Home Health, a boutique home care agency serving complex care seniors and special needs children in southern Ontario.

"Hospitals have health information systems and doctors have EMRs, but in home care all we had was a scheduling program," he complained. "There was nothing that tied the at-home point-of-care nurse to

the doctor, specialist or hospital, so when my mom who is 88 goes for a checkup, the doctor doesn't know that she had two falls and bumped her head a few days ago. Our workers at home wrote it in their notebook, but the doctor doesn't see that."

It was this lack of a health record for home care and the difficulty of sharing patient information with a patient's circle of care that persuaded Menassa in 2018 to develop Health Espresso, a video-enabled, cloud-based, AI powered digital health solution for collaborative care.

"You can have four or five organizations caring for a patient in their home and none of them knows what the other did, so you end up sometimes with service duplication or a service gap," he said, noting for example that Peel Region, west of Toronto, has more than 80 organizations providing healthcare in one way or another, but none of them have software to share patient information. "A lot of the time, we don't even know who's coming into a patient's home or how to connect with them," he added.

"With Health Espresso, you can have a collaborative circle of care where everybody who sees the same patient can talk to each other."

Health Espresso was only being used internally by iCare Home Health but was able to reach a broader market during the COVID-19 pandemic when Lakeridge Health in Durham Region, east of Toronto, received funding from Ontario Health's Episodic Access to Care program for a Vir-

tual Urgent Care pilot. The objective was to help divert patients from the province's overcrowded ERs.

"You can go to an ER and have a wait time of six to 12 hours but a lot of people sitting there don't need to be there," said Menassa. "With our solution, the patient can register online and within 30 minutes, a doctor or a nurse practitioner will attend to them. They may either address the problem online if the patient needs a prescription refill or advise them to go to the ER if it's really urgent."

The Lakeridge Health pilot used Health Espresso as the digital tool for access to the Virtual Urgent Care Clinic, allowing patients to fill out a form documenting their health history, the medications they're on and their current health issue for triaging purposes.

In 2021, Dr. Lubna Tirmizi, primary care lead for the Durham Ontario Health Team, saw an opportunity to expand the program to the community. Ontario Health saw the merit of a community-based model of care that was more sustainable and less expensive than a hospital-based program and agreed to provide the necessary funding.

"The goal in December 2021 was to divert 200 patients per month from Lakeridge Health's ER," said Menassa. "By December 2022, we were diverting 3,100 patients per month, so we hit it out of the park. Now, as of August 1, we're scaling out of Durham Region, which has a population of 800,000 people, to cover the entire Ontario Health East Region from Ottawa west to Scarborough and up to Peterborough, encompassing a population of 3.2 million people."

Health Espresso is poised to play a critical role in Ontario's expanding virtual urgent care clinic rollout

The smart online registration form is able to autotriage patients based on their postal code, age and medical problem. During the encounter, nurse practitioners will encourage the patient to download the free Health Espresso smartphone app, which allows the patient to take advantage of the collaborative health record's full range of communication and information sharing capabilities, including secure messaging and videoconferencing.

Caregivers can then follow-up with patients, monitor their vitals and have a record of the patient's health history during subsequent encounters.

Perhaps most important, patients can invite family caregivers and other members of their

health team, including their family physician if they have one, their specialists or anyone else in their circle of care to access their Health Espresso collaborative record. They can also share their health information, including medication lists and allergies, on their smartphone app with paramedics or hospital staff in an emergency.

Health Espresso has partnered with Amazon Lex and Durham College's Hub for Applied Research in Artificial Intelligence on AI functionality, including a Chatbot to help users identify health care services, and a "followup friend for mental health" capability to monitor a patient's condition. Designed for interoperability and

compliant with the FHIR standard, Health Espresso is able to exchange data with EMRs and hospital information systems, enabling family physicians, for example, to export data from Health Espresso to their EMR and vice versa. An integration with the Oscar EMR has already been completed and Menassa intends to follow suit with the other EMRs and hospital systems. Data eligible for transfer would be selective and determined through negotiated agreements.

Hypercare: Health Espresso isn't the only software solution connecting health care professionals and care-

givers across different organizations. Toronto-based Hypercare is a HIPAA and PHIPA-complaint smartphone and Web-based messaging and scheduling solution that has replaced pagers and inefficient, paper-based scheduling procedures in many Ontario hospitals.

A Hypercare hospital deployment can also include healthcare professionals in the community, but uptake is constrained by the absence of targeted funding for the monthly licence fee. That wasn't an issue with the Oxford Ontario Health Team (OHT), which serves the communities of Woodstock, Tillsonburg and Ingersoll in southwestern Ontario.

In July 2022, the Oxford OHT deployed Hypercare for its Palliative Care Outreach Team, linking 32 nurses and care co-ordinators employed by two home care agencies with palliative care specialists at Woodstock Hospital, a Hypercare site.

Prior to the Oxford OHT deployment, nurses re-



as the province's other health regions are encouraged to adopt digital solutions to improve patient care, address ER congestion, reduce system costs and increase health equity for unattached patients and those living in rural and remote communities.

"So, the project has gone from Urgent Care Durham serving that one region to Ontario Health East," said Dr. Tirmizi, who also serves as Health Espresso's chief medical officer. "Then, I think, in Q3, the idea is that there will be virtual care hubs for all six Ontario Health regions and patients will call Health 811 to access care.

"If they're from Ontario Health East, they'll be triaged there. If they're from Ontario Health West, that's where they'll be triaged." Health Espresso, the technology partner, does all of the work for registration, intake and documentation, including the video visit made possible by the embedded Ontario Telemedicine Network functionality. quiring guidance from a palliative care doctor would have to use methods of communication that were not secure. Now, said Ayush Suri, Oxford OHT digital health lead, "if a nurse sees a patient, checks their vitals and if anything seems abnormal or not what they're expecting, they can send a text message to a doctor at Woodstock Hospital to ask for guidance."

In November 2022, Oxford OHT added 20 new users from Oxford Paramedic Services to the Hypercare platform because paramedics also make calls on palliative care patients "to administer medication, provide treatment to resolve symptoms and prevent visits to the ER," said Suri.

Using Hypercare, they can connect with nursing staff, spiritual care, bereavement services and palliative care docs.

A further expansion of the Oxford OHT's Hypercare deployment is in the works and awaiting the finalization of a master agreement spelling out how it's to be used. According to Suri, it will link a variety of community healthcare services, including Alzheimer Society Southwest Partners, the Canadian Mental Health Association's Thames Valley Addiction and Mental Health Services, St. Joseph's Health Care London's geriatrics services outreach team, the Ingersoll nurse practitioner-led clinic and the Sakura House hospice in Woodstock.

The Hypercare solution also accommodates the transmission of documents and images, which can, if necessary, be uploaded to a hospital's HIS from a connected desktop.

Texting, explained Suri, is the method of communication preferred by physicians "because they don't want to have to pick up the phone for a voice call while they are caring for patients." Hypercare accommodates stat messages by overriding do not disturb settings, tags messages as read and received, and supports cascading messages to alternate recipients if they are not acknowledged.

Hypercare has been deployed by 23 of Ontario's 140 hospital corporations and 8 of Ontario's 57 Health Teams. Outside of Ontario, the company has customers in British Columbia, Nunavut, Texas, California, New York and Wisconsin.

Wound care: In another example of connected care, Health Espresso has struck a partnership with Wounds Canada and recruited Dr. Robyn Evans, director of the Wound Healing Clinic at Women's College Hospital in Toronto, to launch a skin and wound care mobile app that uses AI to measure the size and depth of the wound, determine the best treatment and predict healing time.

The app allows a nurse in a remote Indigenous community, for example, to take a photo of a wound and link the patient's Health Espresso account to a wound specialist, who is then able to review the patient's medical record and use the app's telemedicine functionality for a consult. Having a global view of the patient's health and medication is important, said Menassa, to optimize the care plan.

Health Espresso's wound care solution "is aligned with the government's policy of delivering better, more connected care and improving health equity for patients, especially those in remote communities," said Menassa. Using Health Espresso's collaborative approach to assessment, treatment, documentation and communication, clinicians at the point of care can optimize the healing of wounds and provide patients with the best possible outcomes.

"With the launch of this digital solution, we'll be able to improve patient care, reduce hospitalizations, and lower spending on wound care while also increasing the skills and knowledge of front-line clinicians," noted Crystal McCallum, director of education with Wounds Canada.

While Health Espresso continues to make inroads in the Ontario market, it has also expanded internationally with an office in Cairo following its participation in an Ontario government trade delegation to Arab Health 2023 earlier this year. According to Menassa, the Egyptian and Saudi Arabian governments are interested in a Unified Health Record that would track every citizen's health journey from birth to death.

While the bridging of Canada's health care silos is still in its infancy, software solutions like Health Espresso and Hypercare have demonstrated the potential for a more connected healthcare system that will improve patient care and drive efficiencies.



Member of 🕅 MEDICAlliance

düsseldorf GERMANY 13–16 November 2023

together.

Experience the five spheres of MEDICA.



Discover the

Canadian German Chamber of Industry and Commerce Inc. Your contact: Stefan Egge 480 University Avenue _ Suite 1500 _ Toronto _ Ontario _ M5G 1V2 Tel.: (416) 598-1524 _ Fax: (416) 598-1840 E-mail: messeduesseldorf@germanchamber.ca For Travel Information: LM Travel /Carlson Wagonlit Tel: 1-888-371-6151 _ Fax: 1-866-880-1121 E-mail: ahoule@vovagelm.ca



New recognition and rewards platform enhances employee experience

BY SARAH QUADRI

new and innovative recognition and rewards platform is putting people first and enhancing the employee experience at SE Health.

It's called SE Rewards and it's a first-ofits-kind digital rewards program and web application designed to recognize and reward staff for small acts of kindness to going above and beyond every day. The platform is powered by Caribou Health Technologies Inc., a Canadian startup, that is helping home care companies to create better employment experiences for their staff.

It's making a difference across SE Health. "It's simple to use and there are many ways to earn points through client feedback or picking up extra shifts," said Dahliah Tiron, SE Health Personal Support Worker in the Kingston, Ontario area. "The rewards can be collected and added as money on our paycheck. It's a big help and we appreciate it when we get recognized."

"SE Rewards truly elevates team recognition in a way that allows leaders to recognize their people with purpose and meaning, and just at the 'right time,'" said Afsha Gutsik, director of Nursing and Personal Support Services at SE Health. "It also aligns with our culture around being a People Everything organization."

She added, "What I love most about SE Rewards is that it allows me to quickly recognize my team for the hard work they do. As a web-based platform, it's quick and easy to use and has been well received by our leaders and direct care teams."

As a not-for-profit social enterprise and one of the largest healthcare organizations in Canada, SE Health is seeing growing demand for care and service. As a result of the pandemic and the strain it put on HR across the country – SE is activating creative strategies to build their teams so they can continue to meet and exceed the needs of communities while ensuring their people in all roles feel appreciated and supported. "People are one of our key enablers," says John Yip, president and CEO, SE Health. "At SE Health, we believe that great employee experience translates into great customer experience, and the Caribou platform is helping to support that, ensuring we are bringing even more hope and happiness across the country and delivering exceptional care to people and communities in need."

The partnership between SE Health and Caribou began through a commercialization project launched by the Coordinated Accessible National (CAN) Health Network – a federally funded organization working to introduce more Canadian innovation into Canada's healthcare system. The Network works with healthcare operators like SE Health, to identify their biggest challenges and match them with Canadian-made technology solutions.

By partnering Canadian companies directly with healthcare operators, CAN Health enables these companies and their solutions to be rapidly validated, procured, and scaled across the Network.

With SE Rewards, staff across SE Health can receive points in multiple ways. For example, through referrals – when they share SE jobs with friends and family. They earn more points as the referral moves along in the process and a raffle ticket for a monthly draw for each job share.

They can also earn points when they receive recognition from their leader for going above and beyond, receiving a compliment from a client or colleague, or for something similar. Staff can also receive reward points automatically on their milestone anniversaries with SE Health. These points are preloaded, and leaders are prompted to customize their communications.

"The experience is also easy and enjoyable for everyone," said Tina Veenstra, director, Leadership Development, and the SE Rewards project lead. "Staff can navigate the SE-branded platform in a few simple clicks, and they can share jobs, check their points balance and claim and redeem points when it makes sense for them," she added. "Leaders have a similar experience. They can recognize and reward their staff quickly, meaningfully, and 'just in time,' which means so much."

"We have built integrations with other systems, like PeopleSoft to make the workflows very simple," said Christian Alaimo,



Dahliah Tiron, SE Health personal support worker.

COO and co-founder of Caribou. "We integrate with systems like PeopleSoft to automate the creation of new employee accounts and send onboarding communications. This is a helpful capability to get strong participation at all levels across the organization."

SE Health and Caribou are also working collaboratively to understand the friction points that SE staff may be experiencing when using SE Rewards.

"The insights and inspiration for the app's design and build come from working directly with care workers," added Alaimo. "We identify where the needs are from an industry perspective; if there is a gap in scheduling, or clocking in and clocking out, we want to help close this gap. Every design we make goes through that filter and we don't do anything without that. Our motto is for care workers, with care workers. We take a business and outcomesbased lens and make it happen."

Co-design is a very familiar concept to SE Health and it's something the organization has integrated into their strategic practice and goals as part of People Everything, ensuring they are listening to staff and that they are working together with them to action and execute projects.

Using co-design as a foundation, SE continues to focus on the employee experience with SE Rewards and is taking it a step further to ensure that experience is also a personal one for all staff. The app ensures that the employee experience using SE Rewards is individual to everyone.

"From the beginning, the messaging they receive in SE Rewards is targeted for them; it will be sent to them based on where they are at in the experience," said Alaimo. "In other words, someone who has never participated in SE Rewards will receive a different email than someone who is using it every day. The experience and the communication are personalized."

Experience is one thing, but how is the partnership between SE Health and Caribou measuring the success of the app?

"We are at over 90 percent engagement with SE Rewards," said Veenstra.

"We are achieving that because of the philosophy between eliminating friction and making product decisions together with care workers; that is how we can make it work. Being able to achieve over 90 percent is a testament to those two things," added Alaimo.

"Our people are excited, engaged and love the innovation behind this new Rewards program," added Veenstra. "We can't wait to continue building on our success and are so grateful to work with amazing partners in Caribou and the CAN Health Network. This is truly a dream team."

Sarah Quadri is Director, Corporate Communications, SE Health.

Solutions for aging in place have never been more important in Canada

eaching 40 million in population calls for a celebration in Canada! With nearly one out of five Canadians being at least 65 years of age as of July 2022, the need to have choices for quality aging has become even more important.

Home is where Canadians like to age. Home is also the environment that can impact our health and well-being.

The idea of having our homes do more for us – the place we work so hard all our lives to maintain – is a desired concept for many. Looking at the same idea through healthcare's lens, a connected and accessible home can also take some pressure off our health system.

Many factors come into play when making our home meet our needs as we age in place. Technology is one of those factors. Starting with the basics, such as making the home safer and more connected with healthcare and loved ones, is what national service providers such as Best Buy Canada have been focusing on through their <u>Best Buy Health</u> services.

Their bundled solutions come in a variety of need types identified through partnering with healthcare and community organizations.

For example, one of their bundles can connect individuals with their doctors, loved ones, and the delivery person at their front door. Soon their bundles will offer convenience such as robot vacuums and mops to skip the manual maintenance of home hygiene – to add time to things that really matter, such as calming our minds and moving our bodies to keep well.

Their <u>Connected Health bundle</u> not only looks timelessly stylish, but it also tracks many health metrics to help us celebrate our progress and work on areas that need nurturing. How different bundles can support aging in place are evaluated through research partnerships such as <u>one in place with Bruyère Re-</u> <u>search Institute, Carleton University, and</u> <u>AGE-WELL Sensors and Analytics for</u>



Monitoring Mobility and Memory (SAM3) National Innovation Hub.

Best Buy Health also focuses on a gap that keeps some of us from getting the most out of our technology – digital skills. Their free-to-access <u>Best Buy Digital Citizen</u> program has lessons and how-to's for commonly asked questions all in one place, using step-by-step instructions and jargon free language. They invite everyone to come and learn at their own pace – and repeat the lesson as many times as needed without having to remember a password.

If ever in doubt on how to install and connect our devices, Best Buy's Geek Squad Agents are a service appointment away. Their hundreds of hours of training in creating human-centric experiences help individuals enjoy the many benefits that technology offers.

The goal of these services is to provide Canadians with meaningful options when they are designing how they would like to age in place.

This article was provided by Best Buy Canada.

Invisible crisis in family medicine: the administrative burden on physicians

TTAWA – The administrative burden in medicine is linked to rising rates of burnout among physicians - and primary care providers are bearing the brunt of it.

Mounting paperwork is a problem across the profession. According to the Canadian Medical Association's 2021 National Physician Health Survey (NPHS), general practitioners are significantly more likely (61 percent) to say the time they spend on Electronic Medical Records (EMR) at home is "excessive" or "moderately high" compared to their specialist colleagues (39 percent).

Dr. Chandi Chandrasena is the chief medical officer at Ontario MD, which supports physician adoption and use of EMRs and other digital health tools for the province. She says the issue is contributing to some family physicians closing their practices, and medical students are finding the once sought-after career less appealing.

It's worrying in a system where there is already a dearth of family physicians. "You will not see cradle to grave family medicine, and that will affect all of us," she says.

Charting has always been part of clinical work. What's changed, says Dr. Chandrasena, who practised as a family physician for 20 years, is the red tape on top of that: cumbersome referral processes, a plethora of forms from numerous sources – both federal and provincial – and a lack of EMR integration necessitating access to multiple online portals for patient information.

In a survey conducted by the Ontario College of Family Physicians, respondents said they worked 19 hours on administration every week.

This administrative burden is a contributing factor in diminishing mental health among physicians, who face high rates of burnout, the risk of compassion fatigue and profound career dissatisfaction. In the 2021 NPHS, eight in 10 physicians and medical learners

scored low on profes-

sional fulfillment -

with general practi-

tioners the least likely

to express career sat-

isfaction compared to

"Most physicians go

into medicine be-

cause we want to sit

between science and

their peers.



Dr. Chandi Chandrasena at that intersection

human-to-human connection," says CMA President-Elect Dr. Kathleen Ross, a BC family physician. "Administrative burden stands in the way of that positive relationship we have with our patients."

change management piece," said Dr. Hassanali.

tions are rolled out, MacGregor is excited

about the conversations they can share -

across the region - showing how digital

tools can improve the clinician experience

thinking when it comes to how we can

transform our clinical operations by lever-

aging digital technology and that's why

this initiative is foundational," she said.

"Our CEO, Dr. Lee, is very forward

and reduce their burden.

As the Expanse system and other solu-

"It's time to have a hard look at what paperwork is actually required," she says. "I think there's an opportunity to streamline what needs to be included - and by who."

She points to patients who need coverage for drugs or devices not typically included in provincial health plans. In BC, only prescribers - not pharmacists, for example – can submit requests.

The introduction of new technologies should also be carefully considered.

"Family medicine is the quarterback of all care in our system, but it's undervalued," says Dr. Ross, explaining that innovations have rarely, if ever, had family medicine workflow as the focus.

Ensuring that physicians are involved in the development and approval of new administrative processes is essential.

Family physician Dr. Nicole Stockley is director of external engagement at the Newfoundland and Labrador College of Family Physicians, where one of her main objectives is educating policy-makers about physician administrative burden and suggesting ways to lessen its impact.

"Physician engagement is so important," she says. "The more we can empower physicians to bring up issues and make changes to trickle up to those systems, the more we can solve this issue."

Until that happens, she knows that recruiting physicians like her, particularly in rural and remote communities, will remain a challenge.

"We all went into medicine to see patients. Things that take us away from that interaction and skillset detracts from our joy in our day-to-day work."

healthcare industry, the creative use of the AWS cloud, and the team members' ability to deliver. Hypercare fit all of those criteria very well."

Cloud is an incredible enabler that's able to democratize access to data and computing power, according to Dr. Illing. By leveraging the cloud, startups can build applications wherever they are around the world and then put these apps into the hands of care providers and patients so they can be used wherever they're needed.

Hypercare says the accelerator program will help it scale up and meet strict privacy and security requirements as it expands into the UK. The British government has ordered all National Health Service trusts to phase out pagers and replace them with modern alternatives such as mobile phones and apps.

"The accelerator program has AWS solutions architects and people with security experience who will help us with our compliance," says Umar Azhar, Hypercare's chief technology officer. "Using the managed services, we can reduce the time we spend on maintenance and focus more on developing clinical-specific messaging features and on-call locating, as well as improving the user experience.'

"Our measure of success is what our selected startups go on to achieve," says Dr. Illing. "These are startups that have leveraged the power of the cloud to address serious issues affecting the healthcare workforce. We really hope that AWS will play a foundational role in addressing some of these issues."

Fraser Health experiences gains through IT upgrade

CONTINUED FROM PAGE 6

how beds are managed and provides realtime information on patient location.

In short, there are significant gains being made in access to information for clinicians and staff across the enterprise, and in the quality of care for patients.

However, there's a lot to learn. For this reason, Dr. Hassanali observed that a good deal of time and training is needed. "It's about allowing providers time to accept the fact that they're going to be doing things differently," he said.

Meaningful engagement with medical staff, and ensuring the right clinical representation is in place to help with decisionmaking related to Advance, is a top priority, said Dr. Hassanali.

Users are supported during the go-live stage in three main ways. First, the health authority attempts to keep patient loads at a manageable level, diverting to other sites or reducing the number of elective surgeries, for example.

"We can never close the doors totally, but we were very successful at getting site occupancy down at Eagle Ridge and it was a huge part of our success," said Dr. Hassanali.

Second, they try to increase staff levels during the initial go-live period and third, they bring in 24-by-7, "at the elbow dedicated support" for as long as needed - which ended up being six weeks at Eagle Ridge.

One of the early lessons learned from the first implementation, was that the training program must be "truly representative of day-in-the-life scenarios and workflows," added Fraser Health VP, Digital Provider and Patient Experience, Jennifer MacGregor.

Eagle Ridge employees were given the opportunity to attend a technical 'genius bar', to ask technical questions specific to their individual mobile devices and learn more details about how they would be accessing the electronic system remotely prior to implementation.

"You need to be able to train the workflow, walk through what the admission and transfer workflows will be, and train the staff on the steps and the process, not just the functionality of the system," said MacGregor.

Although new workflows were carefully planned ahead of the go-live, Eagle Ridge staff could ask for help when unexpected challenges were encountered. For example, when they realized the digital workflow for prescribing outpatient antibiotics needed to be modified, a revised workflow was created and extra training was provided.

"We recognize that getting all of our sites up on one system is a very important task for us to do as quickly and efficiently as possible, while ensuring we're taking time to work through the

Smartphone solution

CONTINUED FROM PAGE 10

has created a solution that allows colleagues to coordinate schedules in real time, compliantly communicate, build escalation policies that sequentially trigger other providers when messages are not acknowledged, and trigger entire code teams.

Hypercare also integrates with an organization's single-sign-on system to make user management easier and provides administrative and analytics services that allow the provider to manage and gain insights about its teams' performance to improve quality across the organization.

"Physicians really welcome something like Hypercare," says Tai. "They've already been finding workarounds (to pagers) using WhatsApp and iMessage, but these aren't compliant with strict health privacy and security requirements, nor do clinicians have everyone's phone number."

Tai says that even though it can take a long time to build reputation and trust in the healthcare sector, they were able to land their first hospital client just two years after Hypercare was founded. Since then, its suite of tools has been deployed with hundreds of organizations across Canada and in the United States.

The company isn't doing this alone. It's one of 23 startups from around the world recently selected to work with

Amazon Web Services (AWS) as part of the AWS Healthcare Accelerator, a virtual, four-week technical, business and mentorship program.

Startups selected for the program receive up to \$25,000 in AWS computing credits along with specialized AWS training, mentoring from healthcare and technical subject matter experts, business development, and potential proof-of-concept opportunities with public sector healthcare customers.

"Healthcare startups are an essential part to move the whole healthcare ecosystem forward," says Dr. Rowland

Hypercare is one of 23 startups worldwide selected to work with the AWS Healthcare Accelerator.

Illing, AWS's chief medical officer. "There's so much innovation happening around the world, and we want to ensure it is enabled by the best technology."

Dr. Illing says Hypercare was a great fit for the program because it's solving a real pain point for healthcare providers and will improve patient care and patient outcomes.

"We focus on startups who are building around three specific aspects of the healthcare workforce: training, retaining and deploying," he says. "When selecting participants, we look at the innovative and unique nature of the project, the value the solution could bring to the







20 Years Experience





The Future of Wound Care



www.pixalere.com