FEATURE REPORT: DEVELOPMENTS IN TELEHEALTH – SEE PAGE 10

Publications Mail Agreement #40018238

CANADIAN
Healthcare Technology

CANADA'S MAGAZINE FOR MANAGERS AND USERS OF INFORMATION SYSTEMS IN HEALTHCARE | VOL. 19, NO. 7 | OCTOBER 2014

INSIDE:

SPECIAL REPORT: HOME CARE
PAGE 7

24/7 pharmacy services
With the help of a telepharmacy company, a group of rural hospitals was able to implement around-the-clock pharmacy services. Earlier this year, the four-hospital Huron Perth Healthcare Alliance got things up and running in only 100 days.
Page 4

Better capacity management
Lions Gate Hospital, in North Vancouver, has shown other Vancouver-area hospitals how to improve resource planning through the use of innovative software and team meetings.
Page 6

Art and science of design
Healthcare Human Factors, a group based at the University Health Network, in Toronto, is doing a booming business improving the design of healthcare devices and software around the world.
Page 8

Learning Circle, Online
The First Nations Health Authority in BC, and the University of British Columbia have combined forces to create the UBC Learning Circle. It joins remote First Nations communities digitally so that experts in health and wellness can share their knowledge.
Page 12

PHOTO: COURTESY AMD GLOBAL TELEMEDICINE

Livecare, a Vancouver telehealth company launched by physicians, has experienced surging demand for its services since starting up in 2013. By using a new generation of telehealth gear, much of it supplied by AMD Global Telemedicine, the group has been able to provide medical services to remote regions in BC. Pictured, an off-site doctor examines a young patient with the help of a nurse. **SEE STORY ON PAGE 5.**

New app accesses electronic charts in LTC centres

BY JERRY ZEIDENBERG

Provincial Long Term Care (PLTC) Homes, a privately owned group of five nursing homes in southern Ontario, has announced the rollout of a new app that allows family members and close friends of its residents to tap into the electronic charting system to keep track of how their loved ones are faring.

The app, called HomeWeCare, enables trusted family and friends – with permission from the residents themselves – to remotely check on mood, general health, medication, food, toileting, and many other issues.

"It's the first time in Canada that this kind of transparency is being offered in nursing homes," said Colin LeBrun, president and CEO of HomeWeCare, an entrepreneurial company that developed the app. For his part, LeBrun has experience in the pharmacy industry, as well as in digital healthcare solutions.

> **It can be used on a smartphone or desktop to monitor the health of a family member or friend.**

"There has always been a problem handling the gap between families and residents in long-term care," said LeBrun. "This lets you see exactly what's going on. You're seeing the actual nursing notes. So you see that your mum ate 50 percent of her food, had a bowel movement that day, and took her meds."

The medical information is pushed daily to the app and provides a snapshot of the previous 24 hours of care while retaining look-back capability. In addition, long-term care providers can use the tool to push other messages to the family, including information about upcoming events, calendars and menus.

PLTC ran a trial of the app for 10 months

CONTINUED ON PAGE 2

New app allows family access to electronic charts in LTC centres

CONTINUED FROM PAGE 1

at four of its sites and found it to be extremely popular with the 20 people who tested it. In particular, it enabled them to check on the health of their family members without having to drop into the home each day or pester staff members over the phone.

"The nurses are often busy and don't have time for phone calls," said LeBrun. "And most people have busy lives, working and taking their kids to hockey and soccer. They find it hard to check on their parents in nursing homes."

Using HomeWeCare, however, enabled the users to check on their parents or loved ones from a remote location. If they spotted something that concerned them in the health record, they could call the nursing home for more information.

HomeWeCare integrates directly with the electronic charting system used at the PLTC nursing homes, a system called PointClickCare. As a result, the user can easily tap into the system from an iPhone or Android phone, tablet or desktop computer.

That gives users a comprehensive picture of what's happening, as the electronic record charts a wide range of activities, including medications, changes in mood, food and fluids, daily skin observations, personal hygiene and more.

Colin LeBrun

HomeWeCare has struck up a partnership with PointClickCare, of Mississauga, Ont., which is one of the biggest developers and suppliers of electronic health records to the long-term care sector in North America.

Their systems are used in large number of nursing homes and retirement residences across Canada and the United States. In future, LeBrun said the company will also integrate with the records of other vendors.

There is no cost to the nursing home, but HomeWeCare charges the individual users $8.95 per month for the service.

"It's less than the price of a cup of coffee a day," said LeBrun.

Of course, use of the system in long-term care centres hinges on the existence of an electronic health record system, something that not all nursing homes and retirement residences are using. However, LeBrun says they're gradually adopting them, just as hospitals and doctors' offices have acquired them.

For those that have an electronic charting system, there are benefits to giving record access to family members.

First, it's a great marketing tool and a way of building public confidence in the nursing home or residence, many of which are privately owned. "If you're evaluating homes and one of them offers you access to your parent's records, that might be the deciding factor," said LeBrun.

As well, the nursing home sector has come under fire in recent years for the quality of care provided to residents. Access to the electronic records allows an easy way of checking on whether medications have been given in the correct fashion, whether meals have been provided and eaten, and that toileting and other tasks have been carried out.

In an upcoming version, HomeWeCare will also offer video, so that an individual can see his mom or dad on a smartphone or computer when talking to them on the device.

"You can really tell if they're okay when you see them," said LeBrun.

Telehealth benefits Vancouver Island seniors

BY MYA AYLOTT, MARGARITA LOYOLA, MIKA MORIC AND LISA SAFFAREK

THE SENIOR POPULATION is steadily increasing in Canada as baby boomers begin to enter the later stages of their lives and life expectancy increases. At the same time, healthcare is adapting to meet the unique needs of seniors and changing populations.

Canada's hospital-based healthcare system is designed for treating short-term acute illnesses. However, elderly clients require individualized care, focusing on chronic disease management and medically complex conditions. A shift towards primary care and self-management enables the elderly to remain in their homes and communities longer.

Vancouver Island, B.C., has one of the oldest populations, based on average ages, in Canada. More than 67,800 people over the age of 75 live in the region; according to StatsCan, this number is expected to double by 2034.

The majority of specialists and services reside in urban areas, such as Victoria. As a result, the development of a robust plan to care for our senior population is essential, especially in rural and remote areas.

Telehealth – the use of technology to connect clients and providers over distances – is a key strategy in sustaining equitable access to health services. Currently, there are eight Victoria-based geriatricians providing care to a population where 70 percent reside outside of the Victoria area. Telehealth allows clients and families to remain close to home while receiving access to specialized and comprehensive geriatric care, without the time and expense of travel.

The Island Health seniors team and geriatricians have embraced telehealth for its many advantages, including increased consultations, reduced wait times, and decreased travel for clients and providers. Initially only used for follow-up consultations, telehealth is now being used for initial consultations, pending client suitability and consent.

Geriatricians and the seniors team con-

CONTINUED ON PAGE 14

CANADIAN Healthcare Technology

CANADA'S MAGAZINE FOR MANAGERS AND USERS OF INFORMATION TECHNOLOGY IN HEALTHCARE

Volume 19, Number 7 October 2014

Address all correspondence to Canadian Healthcare Technology, 1118 Centre Street, Suite 207, 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 2014. 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. ©2014 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 207, Thornhill ON L4J 7R9. E-mail: jerryz@canhealth.com. **ISSN 1486-7133**.

REALTIME MEDICAL
The Workflow Innovation Company

THE ONLY PATENTED MULTIOLOGY

WORKFLOW AND PEER REVIEW PLATFORM

DiaShare™ is the only patented, multi-ology capable, workload balancing, peer review and clinical productivity solution. It offers clients the broadest functional range in any platform of its kind.

Context-Aware Workflow Management | Radiology Collaboration Services | RealTimeMedical.com

Telepharmacy supports synchronized eMAR, BMV and 24-7 services

BY REBECCA AGAR, BSc.PHM, RPH

In January 2014, North West Telepharmacy Solutions (NWTS) undertook an ambitious project to assist in getting a rural hospital pharmacy department ready to implement 24-7 pharmacy services in only 100 days.

The Huron Perth Healthcare Alliance (HPHA) is comprised of four hospitals: Clinton Public Hospital, Seaforth Community Hospital, St. Marys Memorial Hospital, and Stratford General Hospital. These rural hospitals are spread out over approximately 2500 km2 and have 189 patient-care beds in total.

HPHA's pharmacy has a partnership with Alexandra Marine & General Hospital (AMGH) in Goderich, which has 42 beds. The HPHA main pharmacy is located at the Stratford site with daily deliveries to the three other hospital sites. NWTS has provided pharmacist order review and clinical pharmacist services to HPHA since 2010.

In March 2013, the South West Local Health Integration Network (LHIN) provided HPHA & AMGH with a Small and Rural Hospital Transformation Fund grant to support the EMPOWER project. The EMPOWER project was designed to improve the safety of the medication system with the introduction of Electronic Medication Reconciliation (eMedRec), Electronic Medication Administration Record (eMAR) and Bedside Medication Verification (BMV).

The HPHA & AMGH pharmacy departments were already using Omnicell automated dispensing cabinets, the Meditech MAGIC v.5.64 Health Care Information System and the Iatrics Visual SmartBoard for drug order entry, drug order review and patient medication therapy clinical monitoring.

The pharmacy departments also had existing processes to pre-pack medications into unit-dose formats when not available from manufacturers. Additionally, HPHA & AMGH had a well-established working relationship with North West Telepharmacy Solutions (NWTS), providing remote pharmacist services for drug order review and clinical pharmacy services, in addition to the on-site pharmacists.

Turning to North West to assist in staffing, project planning, training and staff backfilling was a natural choice for HPHA and AMGH, says Pamela Davidson, HPHA Supervisor of Pharmacy Services, "North West has always been there for us whenever we have needed help, ready at a moment's notice. We never would have been able to accommodate the increase in pharmacist hours with our own staff, and the fact that North West covers all of the overnight shifts have kept our staff very satisfied. It was also great to be able to draw on the experience of a company that has implemented overnight pharmacy service at other hospitals."

Ryan Itterman, Director of Pharmacy Services for both HPHA and AMGH, highlighted the unique ability of North West Telepharmacy to customize its services to accommodate innovative pharmacy service models: "North West has supported the partnership between AMGH and HPHA through the provision of pharmacist resources on an 'as-needed' basis with the innovative use of technology to efficiently support our multiple hospital sites."

The HPHA pharmacy department's operating hours and staffing levels were adjusted to allow for 24-7 coverage, to support timely pharmacist medication order entry and review for eMAR.

As HPHA already had a well-established relationship with NWTS, providing remote hospital pharmacist coverage, these off-peak extended after-hours are staffed by a remote NWTS pharmacist. From 1900h to 0700h, this remote pharmacist performs all medication order entry and order review, and provides clinical support and drug information services. A pharmacy technician is on call during this time to supply any medications not stocked in the Omnicell cabinets, as required.

An extensive on-line training program was developed by the NWTS Site Lead to ensure that the 20 pharmacists were trained and ready to perform independent order entry before the mid-March go-live date. This allowed the NWTS staff to undergo training on their own schedule and review information as desired. NWTS also ensured that their staff received one-on-one mentoring for medication order entry.

The pharmacy team at Huron Perth Healthcare Alliance implemented a 24/7 solution.

Due to pharmacist staffing issues, hospitals in Canada have lagged behind in ensuring medication orders are reviewed before administration. The telepharmacy model of care has been shown to be an efficient, cost-effective and viable solution to support 24/7 pharmacist medication order review and facilitates the implementation of eMAR and BMV.

Approximately 70 percent of US hospitals have 24/7 pharmacist medication order review, and 28.8 percent of those hospitals utilize telepharmacy services to achieve their goal.

Patient Safety is enhanced significantly by the implementation of these programs. Numerous studies by the Institute for Safe Medication Practices (ISMP) have shown that timely medication order review and the use of barcoding technology for BMV plays a powerful role in reducing medication errors.

NWTS provides remote pharmacy services for over 40 different facilities across Canada, but had never collaborated on a project of this magnitude prior to this point.

NWTS pharmacists backfilled for HPHA and AMGH pharmacists who were working on the EMPOWER projects, staff training, as well as assisting in policy development.

At present, on-site HPHA and AMGH pharmacist complete minimal medication order entry tasks, allowing them to focus on clinical activities and patient care. All overnight pharmacy shifts and a majority of the daytime shifts on weekends and holidays are serviced by NWTS pharmacists. The telepharmacy services have also maintained HPHA & AMGH pharmacy staff satisfaction and ensured staff retention.

Kevin McDonald, senior manager at NWTS, says the growth of telepharmacy services over the next several years will be driven by hospital organizations requiring pharmacy services to be available around the clock, which includes 24/7 pharmacist medication order review. This will help ensure that no medication is administered by a nurse without a pharmacist having reviewed the clinical appropriateness of the medication – a natural patient safety safeguard already in place during daytime hours.

This is a logical time for hospitals to look at expanding their hours of operation and increasing their use of existing technologies to embrace eMAR & BMV with their own resources or considering the use of North West Telepharmacy Solutions.

"The nice thing about utilizing NWTS for overnight coverage and large-scale project implementation is that hospitals only need to pay for the coverage necessary for that site," said McDonald. "We can offer a realistic and affordable solution to any hospital of any size."

Rebecca Agar is a licensed pharmacist with North West Telepharmacy Solutions. Please see: http://www.northwesttelepharmacy.ca

B.C. clinic leverages telemedicine to address rural doctor shortages

BY KERI DOSTIE

Communities in rural Canada have long struggled to retain family physicians. Attracting specialist physicians to these areas has been even harder. But in the past year, this troubling trend has begun to change for the better in rural British Columbia with the help of a new telemedicine company, Livecare, and the latest telemedicine technology from AMD Global Telemedicine.

Livecare is a Vancouver-based, physician owned and operated telemedicine company. It was established with the goal of solving the disparity in healthcare access between rural and urban areas. "We know there are issues with patient access to healthcare in Canada," says Livecare co-founder Dr. Mark Godley. "We have physicians who tend to congregate in urban areas because of hospitals and research opportunities, but a lot of our population is spread across a very large geographical area."

In 2013, the company's founders realized the time was right for rural Canada to take advantage of telemedicine. Changes in billing codes meant physicians could now be compensated for conducting live telemedicine exams. What's more, survey data showed patients were rapidly becoming open to the use of telemedicine, and technological advances from telemedicine companies provided better tools and software than ever before.

Soon after launching Livecare, the pent-up demand for rural medical services was released and projects began to roll in. First, the company partnered with the Clover Care Medical Clinic in Surrey, a location that had faced closures due to over-patient limits. However, they could continue to serve their community by offering after-hours telemedicine consultations that replicated the face-to-face experience. Next, Livecare partnered with community clinics in rural Nelson and Taylor to address the challenge of physician shortages.

"The District of Taylor had actually closed their clinic because they were unable to find a physician to staff it," says Livecare operations manager Marilyn Lawrie. "We were able to reopen the clinic by staffing it with a nurse trained to use the AMD technology. The nurse connects patients with Vancouver-based family physicians through live telemedicine visits. Now, the clinic is actually open longer and it's able to accommodate 250-percent more patients than it did when it was staffed with a visiting onsite physician."

In one of its largest deployments to date, Livecare partnered with the Nisga'a Valley Health Authority to deliver healthcare services to community members in the remote Nisga'a Nation. "Using the AMD software and medical devices, we're able to connect Nisga'a Nass Valley's 2,500 community members with family doctors and 52 medical specialists. In many cases, they can see those specialists with shorter waits than patients in urban areas," says Lawrie. "Through the use of telemedicine, we've brought exemplary medical care into a community that was previously bereft of medical care."

The experience has also been positive for the physicians conducting the telemedicine exams. "Our physicians have noticed many features of the telemedicine technology are actually better than an in-person exam, such as the ability to store images in the secure electronic record and to compare them with new images at a follow-up visit," says Lawrie. "Many also say the images and sounds produced by the medical devices are better than their traditional medical scopes, cameras and stethoscopes."

The company's founders have also been pleasantly surprised by the ease with which telemedicine visits can fit into a standard medical workflow. "When we first started Livecare we thought we would have to completely change the way we did things, but that hasn't been the case," says Livecare project manager Jahzel Misner. "With the AGNES software from AMD, we found that we could see a patient the same way we would see them face-to-face – the software really understands live online consultation."

System enables Vancouver-area hospitals to improve resource planning

BY MICHAL MAJERCIN

NORTH VANCOUVER, B.C. – Lions Gate Hospital (LGH), a recognized trauma centre with 276 beds, is one of only five neurosurgery centres in British Columbia and the fourth busiest hospital in Vancouver. LGH is part of Vancouver Coastal Health Authority (VCHA).

VCHA has shown itself to be an innovator with the successful implementation of the McKesson Capacity Planner in six Vancouver hospitals –- indeed, VCHA was the first organization in North America to take advantage of the solution. Since the Vancouver-area implementations, McKesson Capacity Planner has been installed in many other health facilities in Canada and United States. Many of them have visited our site to learn about the system.

McKesson Capacity Planner is a predictive analytics solution that helps organizations accurately forecast patient demand, enabling proactive resource alignment. Its predictive accuracy rate of scheduled and unscheduled demand is 95 percent one month out and 98 percent three days out.

The system combines capacity planning, resource planning and real-time information management that guides operational decision-making on three different planning levels:

- Budget and operational planning – forecasting one year in advance;
- Short-term planning – projecting a week in advance; and
- Real-time management.

All levels guide both occupancy management and staff resource planning. The tool uses selected algorithms that account for monthly, weekly and daily variations, anticipating patient admissions and discharges and creating patient demand forecasts.

The algorithms are configured to provide a long-term plan based on the last two to three years of historical data and a short term projection that gives extra weight to the last six weeks of activities, thereby guiding discharges and helping to adjust staffing on the fly.

How have we done since the implementation of the system?

Upon implementing the solution at Lions Gate Hospital, we have been able to create accurate staff schedules by matching staffing to predictive demand using the McKesson Capacity Planner.

We started to proactively plan and manage capacity, which helped streamline patient flow, reduce length of stay in the inpatient units, decrease ED wait times, optimize surgical slates and their impact on overall hospital occupancy, while managing and complying with surgical wait-time targets.

Before McKesson Capacity Planner and after: At LGH, we used to invest a considerable amount of time in preparing the layout of work prior to the utilization of the system. Now, key initiatives at LGH are part of the Strategic Capacity Management Plan, focusing on the most efficient use of resources and providing the best quality patient care.

Managers and directors meet twice daily in regular meetings and discuss projections of capacity and staffing for the next two-to-five days, and are able to make data-based decisions.

We have also established routine bi-weekly meetings for planning long-term strategy; led by capacity planning managers, the meetings provide a venue for developing action plans to deal with forecasted demand. By predicting occupancy levels accurately, the hospital is able to adjust its longer-term capacity plan months in advance. It can also create a more precise near-term staffing plan a few weeks in advance and modify its discharge plan.

Through accurate forecasting, the solution enables us to absorb increased demand using currently booked resources or by increasing the staffing to levels aligned with the forecasted occupancy. This has led to a reduction of overtime in our surge units by 50 percent.

Lions Gate Hospital can more accurately forecast capacity and act accordingly, using Capacity Planner.

Before, our direct patient-care staffing level had not always been aligned to current or future occupancy levels; now, we're planning with confidence, utilizing accurate short and longer-term forecasts to match resourcing.

Prior to using the McKesson Capacity Planner, we could not easily plan our discharge activity; now we are accurately projecting discharges and matching over/under performance to daily and weekly targets.

Before, we often worked separately from one another; now McKesson Capacity Planner enhances interaction among managers and our nursing units by providing us with visibility and allowing us to make decisions on cross-unit resourcing.

Not only does it maximize the alignment of staff with occupancy across the hospital, but it also alleviates staffing shortages or over-booking, resulting in decreased overtime.

Strategic planning: Periodically we have a meeting of the Director of Acute Services, the Director of Finance and the Capacity Planning Manager to discuss the forecast, operational plan and the strategic budget. The McKesson Capacity Planner enables us to provide a clear road map for both financial and operational stakeholders. Any variations in the plan are monitored and broadcast in real-time so action can be proactively implemented.

The strategic operational plan incorporates a staffing resources model that allows us to plan the number of full-time employees required to support our rosters.

Results and successes: Thanks to our team of operational managers, directors and dedicated corporate support during the implementation phase and afterwards, we reduced our surgery overtime shifts by over 50 percent.

We also achieved annual savings of about $450,000 in fiscal year 13/14 at LGH on overtime costs. (VCHA has implemented strategies to reduce overtime, and Planner was one of several tools utilized.)

Together with other management initiatives, McKesson Capacity Planner contributed to a decrease in average length of stay on medical and surgical units by an average of 16 percent. Planner was a key factor that contributed to a revenue increase in fiscal year12/13 of over $1 million from a provincial procedure funding model that is no longer in place, effective April 1, 2014. Significantly, surgical waitlist targets for patients waiting over 52 weeks have been met.

Ron Dunn, Vice-President, Information Solutions, McKesson Canada, commented: "We are pleased with the results achieved at Lions Gate Hospital. Capacity Planner is designed for end-to-end proactive planning and the significant improvements achieved at LGH clearly demonstrate the benefits in key areas of cost efficiency, human resource management, length of stay and revenues."

Michal Majercin is Optimization Manager, LGH Capacity & Resource Planning Leader, OR Booking.

Better communication results in improved care in the community

BY SCOTT R. HERRMANN

In July, I discussed how data inputs can help deliver better care and the ways in which providers can use that information. I also identified the ability to use data to potentially predict future health, based upon current healthy data inputs.

After travelling around this year to various conferences, I have come to some conclusions about 'healthy data inputs'. First, we may not get the oldest amongst us to provide any additional 'healthy' data, as it's not a process with which they are accustomed. After all, they did not grow up with the digital and mobile technologies that many of us use in everyday life.

But what if we provided a simple way to collect data? The use of a common online portal for the care team, the client, and the family and friends network, so that everyone could be up to date on the latest information and communication about the patients' plan of care, could work if the right approach is used and there was consensus from all parties involved. I have observed that the majority of problems that occur in healthcare today would not have arisen if there had been effective communication amongst the entire care team.


Scott R. Herrmann

In some cases, there was no communication at all, or it was lost or forgotten. That's unfortunate, especially when you consider that a majority of major health issues could have been eliminated or settled by better team communication and electronic documentation instead of paper.

So, would the patient portal be a way to lead to better communications? Certainly better than relying on our own memories and our caregivers' verbal instructions or what we think we remember!

What would a communication link like a continuum portal provide us? Well, it would streamline communications and eliminate paper notes, and having to use our memory.

It would also eliminate plenty of phone calls to and from offices to the patients and their families if we allowed for schedule views and changes, where the patient and staff can communicate to avoid costly missed visits due to miscommunication.

Both employees and patients could check in to verify their schedules, eliminating those phone calls. What about treatments, prescriptions, and medication reminders? All of these important details would be available to the right people in the continuum at the right time.

The patients themselves or their families may be able to maintain a healthier lifestyle because they could and would get reminded about their medications. We all know that miscommunication is a leading cause of poor outcomes and costlier care.

I have often said that better communication, facilitated by mobile devices, helps create better outcomes. Maybe we won't have that with the oldest of our living generations today, but by providing them with a simple tool, which they can access using a laptop or PC, we can improve communications and affect outcomes. Our generation, whether part of the greater care team or clients, use mobile devices, health applications and anything else technology grows into in the coming years for healthcare communication and Electronic Health Records or Personal Health records. But for now with the oldest amongst us, we may have to keep them up to date with technology that is a little bit slower. If you have questions or thoughts about this or any other article I have written, please feel free to contact me.

Scott R. Herrmann is Director of Mobile Solutions for Procura. www.goprocura.com

VIEWPOINT

Hospital-based design group evaluates, improves the effectiveness of technologies

Healthcare Human Factors employs dozens of experts in design and engineering.

BY JERRY ZEIDENBERG

The design of many technology solutions in hospitals and clinics is, pardon the expression, lousy, and some systems in use today are downright awful. That message was brought to a recent conference on healthcare innovation by Dr. Joseph Cafazzo, executive director of Healthcare Human Factors, a design and usability testing lab embedded in the University Health Network in downtown Toronto.

"The user experience of a lot of healthcare technology is generally really poor," said Dr. Cafazzo, a biomedical engineer who also leads the Centre for Global eHealth Innovation. "It's often brutal and embarrassing to use," he said, as he showed slides of overly complicated user interfaces and screens.

Many of his test users are clinicians at the Toronto General Hospital. In recent trials of various technologies, they grappled with the systems, wasting precious time trying figure out how to use them. Comments from them included: "Where's the Enter key?", and "This is not user-friendly at all!"

"These are not stupid people," said Cafazzo, who was the keynote speaker at the MedEdge conference, a medical innovator's confab held in Richmond Hill, Ont., in May. "They are all highly educated, many with post-graduate degrees."

Trouble is, the digital solutions offered up by vendors are often hellish in their design. No wonder, said Cafazzo, we have to pay physicians to use electronic medical records. "We've lost empathy for the user in the design process."

That's where Cafazzo's Healthcare Human Factors (HHF) team comes in. HHF is the world's largest health technology design and usability testing lab embedded in a hospital. It employs dozens of design, engineering, and human factors experts in projects to improve the way healthcare solutions work.

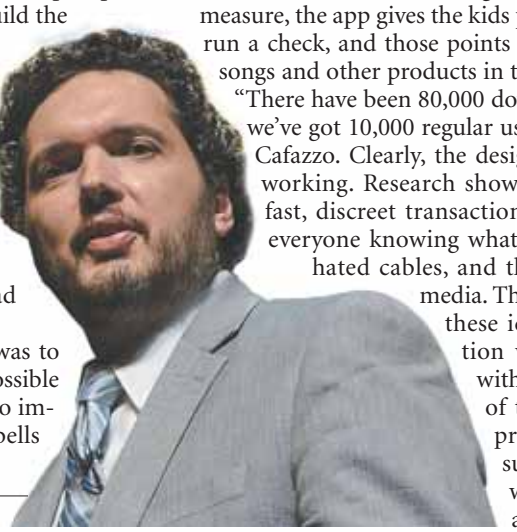
By doing so, they're reducing the frustration experienced by clinicians, speeding up workflow and improving patient safety.

Dr. Cafazzo mentioned a project to redesign a Patient Controlled Analgesia (PCA) pump for Smiths Medical so that it was easy to use and also promoted patient safety. "They didn't want a build a pump with the most features, they wanted to build the safest pump on the market."

> **Trouble is, the digital solutions offered by vendors are often hellish in their design. No wonder we have to pay physicians to use electronic records.**

Healthcare Human Factors worked on the project over the course of three-and-a-half years, produced 12 test versions of the pump and then conducted 'high fidelity testing'. When the Solis pump was launched, the rocketing volume of sales made it the most successful product the company had ever launched.

A key to the design philosophy was to make it as intuitive to operate as possible for patients and clinicians. It was also important to eliminate unnecessary bells and whistles.



Dr. Joseph Cafazzo, Healthcare Human Factors

Indeed, said Cafazzo, it's now critical in healthcare to produce systems that are easy to use. Only in this way can ground-breaking technologies actually be of help to over-burdened clinicians.

Moreover, in this day and age, when physicians barely have 15 minutes to give patients during an appointment, it's increasingly important for patients to learn how to care for themselves. That means technologies must be well-designed.

The principles of simplifying technology and making it easier to use has now been applied to a group of patients who often defy their doctors' orders and seem immune to self-care – teenagers.

In particular, the Human Healthcare Factors lab has produced an iPhone app called bant that makes it easy for teens with Type 1 diabetes to check their blood glucose levels when they should, and to share the information with caregivers. As an ingenious measure, the app gives the kids points each time they run a check, and those points can be redeemed for songs and other products in the iTunes store.

"There have been 80,000 downloads of bant, and we've got 10,000 regular users," commented Dr. Cafazzo. Clearly, the design of the solution is working. Research showed that kids wanted fast, discreet transactions – they don't want everyone knowing what they're doing. They hated cables, and they like using social media. The HHF lab took all of these ideas into consideration when they came up with bant. A new version of the solution will also provide intelligence, suggesting to the kids what may have caused a high reading.

Telehealth in Canada is growing, evolving and responding

BY GRANT GILLIS

Welcome to the annual "Telehealth" edition of Canadian Healthcare Technology. COACH and the CTF: Canadian Telehealth Forum are once again delighted with the opportunity to have worked with Jerry Zeidenberg and his team to assemble an engaging array of interesting articles profiling some of the latest in telehealth programs and services in Canada.

In this edition, you can read about the telehealth solutions supporting early childhood hearing, UBC's learning circle, telehomecare in Ontario and geriatric care on Vancouver Island. Canada Health Infoway also provides a great profile of its remote patient monitoring report released this spring, offering insights into the key findings and next steps. You are in for a great read with these articles!

In sum, what do these articles point towards? Well, most certainly it means that the world of telehealth is rapidly expanding, and working in many meaningful ways to deliver more quality care to a greater number of Canadians in interesting, novel and more efficient, engaging fashions.

We've all seen articles and studies continuing to demonstrate that, in many ways, telehealth provides better services and promotes better outcomes in comparison to more traditional forms of care delivery. These benefits can range from residents in rural/remote communities being able to avoid the cost and stress of long distance travel to see an audiologist for their young children, to the increased quality of life for a diabetic in a First Nations community by being part of a larger, mutually supportive group focused on nutrition and better living.

While certainly expanding, the world of telehealth is also evolving with, and seemingly into, other forms of healthcare delivery, that are referred to as "virtual" and "mobile" health.

As time goes on, the distinction of such labels, while in many ways still accurate in pointing out differences, is becoming less of a focus as compared to making healthcare delivery more immediate when time and distance separate patient from provider.

> **COACH and the CTF are pleased to be hosting Global Telehealth 2015 in Toronto, May 29-30.**

In the spring of 2015, immediately prior to our annual eHealth Conference, COACH and the CTF are pleased to be hosting Global Telehealth 2015 (GT2015) in Toronto.

With the theme of "Serving the Underserved: Integrating Technology and Information for Better Healthcare", the GT2015 event will feature over 50 presentations of peer-reviewed papers, numerous plenary speaking panels and insightful keynotes on the latest developments in mobile, virtual and telehealth care delivery.

You can find more information on the event at our COACH website (www.coachorg.com) and we look forward to welcoming you to this truly ground-breaking event.

Grant Gillis is Executive Director, Forums & Practices, at COACH: Canada's Health Informatics Association. For additional information on the topics covered in this article, or more information on the Canadian Telehealth Forum and COACH, you can reach Grant Gillis at ggillis@coachorg.com.

Defibrillating the Obamacare website: People come to the rescue

BY DOMINIC COVVEY

They almost lost the patient, Obamacare, a major innovation in American healthcare! In previous articles, I identified missteps made by the developers of the registration website for the United States' Affordable Care Act, otherwise known as 'Obamacare'. These missteps included not really understanding the magnitude of the demand for access to the website, not establishing proper leadership and communications channels, and failing to do end-to-end testing of a complicated system prior to release.

While gloating political enemies stood around watching, the Obama administration faced a comatose patient: its central website. The website was unable to respond to people seeking to enter the new national insurance program. It was one of those memorable and terrifying moments in technical history. A crucial program actually faced the potential for termination because of what would be an IT failure.

Dominic Covvey

What saved the day? An article in Time magazine tells the story of what was done and who did it. In October 2013, administration officials met repeatedly to try to find out what was wrong with the Obamacare website, as it was either denying access or crashing. We have to remember that Republican opponents to the plan were practically in a state of ecstasy about what appeared to be the likely failure of the website.

In retrospect, it seems that the biggest problems were the lack of coordination among the people developing the website and inadequate capacity of the system to handle large numbers of users.

While expected number of users was grossly underestimated, even a few thousand could not get access at that point. It was so bad that the administration gave serious consideration to abandoning the website and starting over.

This approach would have likely been the death-knell of Obamacare. Most in the administration lacked the expertise to address technical issues. Luckily, someone realized this problem and brought in experts, including technology wizards from Google and other major corporations. This new leadership recognized that a fundamental problem was the lack of understanding of key things, like response time and how many were attempting access.

Very early on, it became clear that there was a need for some kind of a dashboard to assess things like performance, so one was coded and began providing operational intelligence. How often do we fail to build measurement and visualization into systems we're developing? If you don't know what is going on, how do you decide how to intervene appropriately?

The introduction of competent leadership was probably what made the greatest difference. Multiple contractors were developing the website and they weren't exactly in a loving relationship. Without effective leadership and communication, the importance of the system and the urgency of making it functional seem to have been secondary.

There was also a fundamental technical mistake. Queries were all being done against a master database, an extremely ponderous approach. A crucial solution to this problem was caching the data, an action that dramatically reduced the response time. The new leadership recognized that the architecture of the system was inadequate for the task at-hand.

Interestingly another crucial intervention was establishing a formal structure for meetings. Meetings were to focus on solving problems as opposed to placing blame. Another tactic was to make sure those with the appropriate expertise actually got the floor and did not sit by passively. Finally,

CONTINUED ON PAGE 14

Remote patient monitoring: A healthcare delivery game-changer

Infoway is offering a new program to support the growth of RPM across the country.

BY BOBBY GHEORGHIU AND FRASER RATCHFORD

ILLUSTRATION: LINDA WEISS

Fueled by an aging and growing population, the challenge of managing chronic disease and post-operative patients to prevent hospital re-admissions and emergency department visits has been near the forefront of policy discussions for many years. With years of experience from Canadian and international pilots, programs and research, Remote Patient Monitoring (RPM) is increasingly becoming an important part of the solution.

RPM has been touted as a game-changing model of health care delivery for many years. Recent evidence suggests that RPM is not only evolving in Canada, but that it has the potential to deliver high-quality care at the right cost while improving patient-reported outcomes.

RPM is the delivery of healthcare to patients outside of conventional care settings (e.g., a patient's home, instead of a hospital bed), made possible by connecting the patient and a health care provider through technology. It involves the electronic transmission of patient data (e.g., symptoms, vital signs, outcomes) from a remote home location to the provider, as well as the supporting services and processes required to conduct data review, interpretation and potential alteration to the patient's course of care.

A study by Ernst & Young (EY), entitled Connecting Patients with Providers: A Pan-Canadian Study on Remote Patient Monitoring, revealed strong evidence of RPM supporting reductions in emergency department visits, hospital admissions and bed days, as well as strong patient satisfaction and quality of life improvements.

As one family caregiver in BC's Island Health Telehomecare Pilot said: "Since getting the home monitor machine, I have been able to pick-up on signs of pneumonia and heart failure in my dad. I have been able to prevent it from getting worse. I have also learned how to monitor his results each day, and have been able to treat him more or less as needed."

What can jurisdictions and health systems do to increase the chance of success for these programs? From various Canadian case studies, a number of key success factors for moving past the pilot stages and growing RPM into a mainstream care delivery mechanism have been identified:

- engagement of and collaboration with clinicians;
- integration into established clinician pathways and processes;
- selection and recruitment of suitable patients (some patients are too ill to participate, while others may not benefit from intervention); and
- the ongoing measurement of impacts attributed to RPM.

All of these aspects are needed to ensure value and optimize these programs over time.

So, how viable are these programs in a Canadian context? Despite significant variability in the scale and focus of programs currently implemented across the country, the evidence suggests that long-term sustainability is a realistic goal for programs large and small.

These factors have been incorporated into a new investment program initiated by Canada Health Infoway to assist in the establishment and growth of RPM across Canada.

The program is split into two investment streams: start-up and deploy.

Start-up investments are aimed at planning for jurisdictional and/or large regional or disease-specific programs; deploy investments are designed to focus on enhancing and expanding program offerings to grow the adoption and use within patient populations where there is evidence of benefit (e.g., Congestive Heart Failure, Chronic Obstructive Pulmonary Disorder).

Through a multi-faceted approach, the RPM portfolio targets patients and consumers who have serious health problems and are likely to be frequent users of the health system, and for whom RPM has the potential to significantly improve outcomes (e.g., through earlier discharge from hospital or reduced admission rates).

RPM investment activities will further be supported through undertakings such as conducting program-level benefits evaluations, as well as creating change management resources to support clinician engagement and patient enrolment.

While there have been some mixed outcomes reported in international studies, Canadian evidence suggests that for a targeted segment of the population, RPM does indeed present a cost-effective, innovative solution that transforms the healthcare delivery model by bringing care into the home setting and significantly improving patient-reported outcomes such as satisfaction and quality of life.

Bobby Gheorghiu is Benefits Realization Leader, Canada Health Infoway; and Fraser Ratchford is Group Program Director, Consumer Health and Innovation, Canada Health Infoway. For more information on remote patient monitoring, visit www.infoway.ca

Remote patient monitoring benefits patients and healthcare system

Today, telemedicine is making its way into patient homes with Telehomecare, a program of the non-profit Ontario Telemedicine Network (OTN).

The largest service of its kind in Canada, Telehomecare couples remote patient monitoring with health coaching by telephone. It provides patients with Chronic Obstructive Pulmonary Disease (COPD) and Chronic Heart Failure (CHF) with coaching in self-management and daily remote monitoring of vital signs.

Patients also respond daily to a few simple questions about how they are feeling. A specially-trained clinician – a registered nurse or respiratory therapist – monitors their signs and symptoms in order to prevent exacerbations that would lead to an Emergency Department visit or hospital admission.

"Telehomecare patients feel well-supported and confident as they learn how to live their best possible life through weekly health coaching," says Laurie Poole, RN, who is vice-president of Telemedicine Solutions at OTN. "And they know that a specially-trained professional is monitoring their blood pressure, heart rate and weight," she says. "They feel reassured, knowing that their vital signs will alert the clinician if things are not as they should be. And they know their doctor will be informed if they need a medication adjustment or a visit to the doctor."

Patients – who must have been hospitalized within the last year for COPD or CHF to be eligible for Telehomecare – can be enrolled in Telehomecare by their family doctor, nurse practitioner or specialist or enrolled at discharge from hospital or through a self-referral.

Piloted in 2007, with provincial implementation beginning in 2011, Telehomecare is delivered in Ontario's Local Health Integration Network regions by Community Care Access Centres (CCACs), hospitals or Family Health Teams. Seven of Ontario's 14 LHINs are already participating with others expected to come on stream in coming months.

The program is already delivering results that are attracting the attention of doctors and hospitals across the province.

Telehomecare patient visits to Emergency Departments have been reduced by more than 37 percent. Hospital admissions have been reduced by more than 44 percent.

Data from William Osler Health System, which delivers Telehomecare in the Central West LHIN, shows that six months after discharge from the six-month Telehomecare program, inpatient visits from Telehomecare graduates is 70 percent lower than pre-Telehomecare. Emergency Department visits are reduced by 53 percent.

Toronto Central CCAC, which delivers Telehomecare in Toronto Central LHIN, also measured patient satisfaction. Eighty-seven percent of patients would definitely recommend Telehomecare to others and 98 percent said their Telehomecare nurse understood what is important to them.

"Telemedicine has already become normalized in our hospitals and, now, it is increasingly being normalized in our homes. Remote patient monitoring means the doctor is always in – in our computers, on our phones and, most importantly, in our living rooms and kitchens," says Dr. Ed Brown, OTN's CEO.

"The patient doesn't have to get in her car to go to healthcare. It comes to her. This means better health for the patient. It also means better health for the healthcare system itself. It means we actually have a chance to maintain and improve our cherished universal healthcare system in spite of the rising tide of chronic disease that we know is just over the horizon."

Beyond the patient interface, the technology platform is being enhanced so that Telehomecare data can be integrated with the CCAC Client Health and Related Information System and physician's Electronic Medical Records.

And, finally, Telehomecare is likely to be expanded as a care pathway for other conditions. A diabetes pilot is already underway.

Learning Circle, via telehealth, connects First Nations communities in B.C.

BY SEAN TAYLOR

History is being made in British Columbia. The creation of the new First Nations Health Authority (FNHA) in 2013 to deliver health services by and for First Nations communities in BC marks the start of a new era for First Nations health in this province. The partnerships, innovation, and opportunity for communities to design, deliver, and determine their health and wellness outcomes has been noted as a best practice across Canada, and is one that other provinces are watching optimistically.

Rural location and remoteness is one factor that can make health service delivery difficult across Canada. In some communities a doctor may only be able to visit remote territories occasionally. For preventative and primary care, new technologies like telehealth, eHealth, and remote connectivity projects are setting a new standard of care for First Nations communities in BC.

On the path of wellness, First Nations in BC are combining the best aspects of both traditional and western medicine. To support this vision, a partnership was forged between the FNHA and the University of British Columbia (UBC) Centre for Excellence in Indigenous Health to create the UBC Learning Circle, which regularly connects First Nations communities digitally for educational purposes by utilizing live, interactive videoconferencing technology.

"Online communication and education, as enabled through the UBC Learning Circle partnership, is a valuable and cost-responsible tool. Videoconferencing technology brings communities together to share knowledge on wellness initiatives and solutions to collective health challenges," said Megan Hunt, eHealth Project Director with the FNHA. "The Learning Circle also provides a means to engage with communities on FNHA programing and to support our health systems' transformation in an efficient way online, as opposed to only face-to-face meetings across the province."

The Learning Circle offers creative, culturally safe and relevant educational programming by inviting health professionals and First Nations community knowledge-keepers to provide workshops that support the sharing of community knowledge. The Learning Circle facilitates information sharing around topics such as traditional languages, culture, and medicines; physical, mental, emotional, and spiritual wellness; healthy eating, maternal child health, elder health, and more. The programming is largely designed and led by First Nations and Indigenous facilitators.

Session topics are 'Community-Driven' and are determined in a number of ways. Many members of the Learning Circle team are First Nations themselves, and their own life experiences also inform the topics that are presented within the Learning Circle.

Social media is another way that communities can help decide the types of sessions to be delivered.

Surveys are also conducted throughout the year at venues such as conferences, where professionals who develop health programming for their communities have the opportunity to suggest new topics. As well, surveys are conducted electronically every year to gain information about important health topics for future sessions. This feedback process both improves the quality of programming and provides a method of understanding the health issues that are important to First Nations communities.

"The Learning Circle really grew out of a desire expressed by community health directors to use videoconferencing as a platform to generate ideas and learn about the creative solutions other communities have developed to address health issues facing First Nations people across the province," said Leah Walker, Associate Director with UBC Centre for Excellence in Indigenous Health. "These discussions often become real community events where people gather together (albeit virtually) to listen, learn and share ideas. Since the Learning Circle first started, it has been exciting to see such a huge increase in participant engagement and strengthening of the community voice on issues that matter to them."

PHOTO: JEN MACKIE

Kathryn Berry (UBC Learning Circle) facilitating a Circle on-location. Divina Ridley (Program Assistant), Kathryn Berry (Education Coordinator) and Leena Minifie (Program Coordinator and facilitator).

From its inception in 2006, the Learning Circle has steadily grown in popularity. In 2012, it was realized that one of the major barriers to increasing community participation was the availability of videoconferencing equipment. Currently, approximately only 50 percent of First Nations communities in BC have access to videoconferencing technology.

A webinar tool was introduced in September 2012 to enhance access to Learning Circle sessions in addition to videoconferencing technology. This has greatly increased participation because all that is required is a computer with an internet connection and speakers. Webinar technology has also allowed the Learning Circle to go 'on the road' and travel to presenters that are offering unique learning opportunities, such as conferences or workshops.

Last year, the Learning Circle team travelled to Ktunaxa territory (near Cranbrook) to broadcast a series of talks about Ktunaxa knowledge relationships to participants around the province.

"You inspire many through your circles and speakers, which offer(s) great hope and healing. Empowering communities makes the difference for generations to come," said Trish Scoular, a regular participant in the Learning Circles.

Through the 2013-14 year, there were 68 individual sessions offered (58 Learning Circles and 10 Youth Circles) compared to 21 total during the 2012-13 season. Participation increased by 358 percent (from 917 to 3,282 people).

Moving into the future, there are many ways this program will grow. The FNHA is currently leading a Telehealth Expansion Project which will provide access to telehealth services (both clinical and wellness) to 45 First Nations communities across BC. This project will include deployment of new telehealth equipment, so there will be more communities with the technical ability to participate in UBC Learning Circles.

Another area of growth is around increased programming on topics that communities have identified as priorities. One such priority is the mental health of First Nations and Aboriginal youth. The goal over the next year is to offer four sessions for First Nations and Aboriginal youth around mental health and wellness. The content of these Circles will be informed by directly engaging with youth on an ongoing basis throughout the year.

For more information about the UBC Learning Circle visit: http://learningcircle.ubc.ca. For more information about the First Nations Telehealth Expansion Project visit: www.fnha.ca/what-we-do/ehealth/telehealth

Sean Taylor is a Business Analyst, Innovation and Information Management Services, with the First Nations Health Authority in B.C. Kathryn Berry is Education Coordinator, UBC Centre for Excellence in Indigenous Health.

Telehealth-enabled ABR testing enhances infant hearing assessment

BY ALISON BEERS, M.Sc., R.AUD

The British Columbia (BC) Early Hearing Program is a province-wide, early hearing detection and intervention program. A program of BC Children's Hospital, it is managed and delivered in collaboration with the Regional Health Authorities, Ministry of Children and Family Development, contracted service providers and First Nations Health Authority.

Approximately 45,000 newborns receive hearing screening each year in BC. The 700 to 800 infants who do not pass screening are referred for a full hearing assessment at their local public health audiology clinic. The BC Early Hearing Program goal is to have hearing assessment completed before infants are three months of age.

Auditory Brainstem Response (ABR) testing is the in-depth hearing assessment provided for newborns who do not pass their hearing screening, or who pass their hearing screening but have certain risk factors for hearing loss.

ABR testing is conducted by a small number of specially-trained and certified pediatric audiologists in BC. Audiologists prepare infants for ABR testing by placing four electrodes on the head and earphones in each ear.

Once infants are prepared and sleeping, the audiologist conducts the ABR assessment on a computer. A detailed picture of an infant's hearing thresholds can be obtained by presenting sounds though the earphones and measuring how the brainstem responses to these sounds.

In October 2012, BC Early Hearing Program developed a telehealth-enabled ABR service model with the Northern Health Authority (NHA). Acceptance testing demonstrated a high level of clinical acceptability and indicated that the model was transferrable to other regional audiology clinics.

A case analysis comparing actual audiologist travel to regional points of care and site implementation costs was used to develop a value proposition. A partnership was developed between the NHA and the BC Early Hearing Program to transition all ABR assessment services in the NHA to a telehealth model.

Telehealth-enabled ABR services were rolled out in the NHA in July 2013 with Fort St. John, BC as the pilot site, using already established ABR assessment protocols and existing local staff. The Fort St. John ABR equipment was updated to support a secure remote desktop connection.

The Telehealth service is supported by a PC-based videoconferencing unit, a secure network share and cross-regional authentication for transiting regional firewalls. The Fort St. John hearing screener was trained to prepare the baby for ABR testing with electrodes and earphones, to be the audiologist's hands on equipment when necessary, and to sit with and support the family during the assessment.

The BC Early Hearing Program Audiologist located at BC Children's Hospital in Vancouver was then able to conduct the ABR assessment using the remote desktop connection and videoconferencing unit. Once the Telehealth-ABR clinical model was established and deemed clinically acceptable, the other three NHA audiology clinics (Prince George, Prince Rupert and Terrace) were set up for telehealth-enabled ABR testing. All four NHA audiology clinics have been providing telehealth-ABR services since March 2014.

Implementation of telehealth-enabled ABR in the NHA has reduced travel costs within the BC Early Hearing Program and has increased availability of its Program Support Audiologists.

An analysis of actual Program Support Audiologist travel to NHA audiology clinics shows that telehealth-enabled ABR capital costs are recovered in a single fiscal year and that up to 225 hours of audiologist availability is gained each year.

Families' feedback regarding the telehealth-enabled ABR services has been positive to date.

Vancouver Island

CONTINUED FROM PAGE 2

nect with clients over telehealth to provide cognitive testing, physical examinations, and occupational therapy assessments. The adoption of new tools, such as digital stethoscopes to transmit heart and lung sounds, further enhances the distant consultations. Remote diagnostic devices allow for a complete physical assessment during the consultation, performed by the nurses under guidance from the geriatrician.

One challenge of implementing telehealth in geriatric medicine is managing the unique nature of senior care. Seniors are often faced with an array of sensory, mobility, and cognitive impairments, such as dementia.

For example, an Island Health geriatrician, social worker and client experienced a challenging telehealth consultation; the client had moderate dementia and could not comprehend that the physician was a real person and not a TV show.

Many clients with dementia do experience successful telehealth consultations, thus determining client suitability prior to using telehealth is essential. Before each telehealth session, the local seniors care team meets with the clients and their families to determine if telehealth should be included as a care delivery modality.

If the client is uncomfortable with the technology during the session, the appointment may be rescheduled for a face-to-face visit.

In addition to client suitability, provider preparedness is also critical to the success of telehealth.

Provider experience and comfort level working with seniors and the technology has a direct impact on telehealth uptake and fluidity. "You can give anyone technical training, but nurses need experience working with seniors," notes Sylvia Pham, an experienced telehealth user and seniors team nurse.

The telehealth team worked with the seniors team to optimize the telehealth experience for both client and provider. To accommodate seniors with sensory impairments, speaker position was adjusted, a larger monitor was installed, and the room was reconfigured. Client feedback showed a marked increase in satisfaction with telehealth consultations after the updates. One recent client expressed his perception of telehealth as an "excellent system with benefits for me and my doctor."

Defibrillating the Obamacare website

CONTINUED FROM PAGE 9

the team was to give priority to urgent issues that had an immediate impact.

All these interventions led to a dramatic reduction in error rates and downtimes. However, despite the best efforts, there were still hiccups. In this case, competence, focus, dedication and believing in the outcome gave the team the energy and bearing to succeed. Fortunately, they did succeed and the patient recovered!

What do we learn from this situation? Yes, there were technical problems, like the system architecture issue. However, the real problem was the same dilemma faced by any group trying to do something: metamorphosing into an integrated team, unifying as to purpose and internalizing the importance of the project. That and establishing the communications circulatory system and the information lifeblood that enables the team to be effective.

Out in the real world, some may be members of medical teams. Others participate in sports teams. Still others function in military units. Most of us, on the other hand, are members of eHealth teams, focused on delivering what we believe are the innovations that eHealth will enable.

Every team has the same challenges. Teams need good tools. They need a competent staff that understands the tools but also understands the 'why' and the importance of what we are trying to do. It will always come down to people – people united and coordinated, functioning under formal rules and all working towards the agreed purpose.

Back in the 1960s, 70s and 80s, in the infancy of the Computer Age, technology was the limiting factor. Now, in the mature years of the Computer Age, people are the issue and technology has truly become just a tool. We all know the KISS principle. Let's make sure competent people are doing the KISSing. Maybe this will result in the birth of an eHealth revolution!

The interoperability to make breakthroughs

We offer a platform for Strategic Interoperability.
Our technology is essential if you want to make breakthroughs in strategic initiatives such as coordinating care, managing population health, and engaging with patient and physician communities.

Add our HealthShare platform to your EMRs.
InterSystems HealthShare® will give you the ability to link all your people, processes, and systems – *and* to aggregate, analyze, and share all patient data. With HealthShare, your clinicians and administrators will be able to make decisions based on complete records and insight from real-time analytics.

InterSystems®

InterSystems.com/Ability1W

TOSHIBA

Leading Innovation »»

When time is critical, the new generation ViSION CT with 16 cm whole organ coverage in a single rotation is your gateway to volumetric imaging.

AuntMinnie.com
BEST RADIOLOGY DEVICE OF 2013

CLINICAL IMPACT of FULL VOLUME CT Scanning

- ☐ **CARDIAC** scanning in a single beat – no "irregular" reconstruction!
- ☐ **SURE SUBTRACTION** between data sets – one from one
- ☐ **DYNAMIC SCANNING MSK** – movement evaluation
- ☐ **DYNAMIC SCANNING BLOOD FLOW** – for optimum temporal resolution
- ☐ **PEDIATRIC SCANNING** – fast single rotation for movement capture
- ☐ **TRAUMA** – full body CT, ultra high speed acquisition at minimum dose

For more information, visit **www.toshiba.ca**

Made for Life™

ULTRASOUND CT MRI X-RAY SERVICES