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ANNUAL REPORT 2021/2022

Advancing care, improving outcomes



Alberta Health Services

MESSAGE

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Cover photo: AHS Advanced Care Paramedic John Taplin.

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Dr. Braden Manns

Marc Leduc

Changing lives through innovation

WRITTEN BY DR. BRADEN MANNS AND MARC LEDUC

While the intensity of the pressures on the health system has fluctuated over the course of the pandemic, one thing has remained constant: Alberta has a thriving research and innovation ecosystem that's advancing our models of care across the province.

The stories you are about to read exemplify the ingenuity and drive of Alberta's researchers and innovators.

Whether it's creating and testing new solutions to improve treatments or expanding screening for our littlest patients, Alberta Health Services is striving to improve the health and wellbeing of Albertans across the healthcare spectrum.

Alberta is home to a rich talent pool of clinical innovators: scientists, researchers, physicians, pharmacists, nurses, nurse practitioners, allied health professionals and so many others, each pushing the boundaries of knowledge and each dedicated to making a difference to the people we serve.

Their work is enabled by the indispensable expertise and support of universities, foundations and governments. In Alberta, for example, clinicians have access to funding through the Partnership for Research and Innovation in the Health System, a joint program between Alberta Innovates and AHS aimed at translating great ideas into improved care for Albertans.

Connect Care, the new single health record of care that AHS is rolling out provincewide, streamlines processes for conducting clinical research. It also enables Albertans to participate in clinical research and empowers researchers with a rich and centralized data source.

As you read the following pages, you'll learn how staff across AHS-more than 110,000 of us-are working to improve healthcare in every corner of our province. Our four priority areas are currently: improving EMS response times, decreasing emergency department wait times, reducing wait times for surgeries, and improving patient flow.

Research and innovation are key to driving improvements like these. Researchers ask questions, collect evidence, then apply the knowledge they've gained for the benefit of our patients and their families.

In short, research and innovation form a necessary foundation on which to build the future of healthcare in Alberta. Given the work already under way, that future is a promising one. ■



Helping Albertans through virtual care

WRITTEN BY CHRISTINE HARRIS

An Alberta Health Services' project that connects Health Link callers with physicians is giving Albertans—and their healthcare providers—something to talk about.

Virtual MD started in early 2022 as a way to direct Albertans to appropriate care, while reducing potentially unnecessary visits to hospital.

The program works side by side with Health Link—a 24/7 phone service offering advice from Registered nurses to connect roughly 50 callers per day with Alberta physicians for virtual assessment. As of fall 2022, more than 10,670 patients have already been assessed as part of the program.

Dr. Jenny Edge is one of 40 physicians who works with Virtual MD. From her perspective, one of the initiative's most compelling aspects is its ability to help patients at home, increasing their access to physician services through remote technologies.

"Sometimes, patients just want to have their health-related questions answered in a timely manner by a medical professional, and I can address their concerns in a simple phone call," she says.

"Patients' anxieties are often relieved when I can answer their questions in real time, offer helpful explanations and provide clear-cut directions on when to seek higher levels of care or call 911 for help."

To access Virtual MD, patients call Health Link at 811, and a Registered nurse or clinical staff member will identify whether they're in need of further assessment with a physician. If they meet referral criteria, they will be assessed over the phone or via a secure Zoom link.

With the help of Virtual MD, more than 5,800 callers so far have been

able to manage at home with self-care. Many may have otherwise visited an emergency department but were able to avoid the trip as a result of the program.

Edge notes the program has been especially valuable for patients in rural and remote areas with limited access to medical care, for people with mobility or transportation issues, as well as for those affected by COVID-19 illness at home.

Chelsea Quigg, a Registered nurse with Health Link, sees how the program benefits patients and its potential to further improve the efficiency of healthcare in Alberta.

"A goal of Health Link is to connect callers with the right care at the right time," says Quigg. By connecting patients with physicians, the Virtual MD program helps improve patient flow by improving the availability of our urgent care and emergency departments to care for those with more medically complex concerns.



Denis Edwards administers his own chemo via an injection in his stomach. Here, he is with his wife, Bonnie.



Dr. Jason Tay, hematologist, at the Tom Baker Cancer Centre in Calgary. Photos by Erica Johnson

Study empowers chemo patients

Patients avoid hospital visits, gain freedom

WRITTEN BY GREG HARRIS

Alberta cancer patient Denis Edwards injects himself with a chemotherapy drug every couple of weeks as part of a research study believed to be a Canadian first.

The 80-year-old self-administers a drug called bortezomib for his myeloma, a blood and bone marrow cancer, which saves him a lengthy drive from his home in southeast Calgary to the Tom Baker Cancer Centre in the northwest.

"Doing it this way is fantastic," Edwards says of the chemo-at-home study.

"If I had to be at the hospital by 9 a.m., I would have to be up by 6 a.m., and then it would take three or four hours out of my day—not to mention the fuel and parking costs."

Edwards is one of about 20 participants taking part in the research trial, which began in May 2020. Most of the study participants are volunteer myeloma patients in Calgary, but there are also three in Edmonton taking part.

"This is a win-win," says Dr. Jason Tay, the Alberta Health Services hematologist leading the study. "Patients are happy because it prioritizes their time while paying attention to efficacy and safety. It saves them a trip to the hospital, and it also saves the health system money and frees up appointment times for other cancer patients."

The drug bortezomib has been wellstudied and used for many years, but the idea that patients might be able to safely give themselves their own chemotherapy injections is relatively new.

Tay, also an Associate Professor at the University of Calgary's Cumming School of Medicine, notes that people who need blood thinners routinely give themselves their own heparin injections; those with diabetes give themselves insulin shots. The thought that some chemotherapy drugs can be safely self-administered has been slower to take root, however.

In the Alberta study, patients like Edwards (or their caregivers receive hands-on training from nurses on administering injections. To be eligible, patients must have already received at least four doses of bortezomib, responding without significant side effects, and their oncologist must agree to their participation.

Nurses provide instruction on giving subcutaneous injections and patients practice by self-injecting saline. They then receive pre-filled syringes from pharmacies at Tom Baker in Calgary or, in Edmonton, the Cross Cancer Institute.

"We were well-instructed," Edwards recalls. "Bonnie (my wifehelps get everything ready for me and then I do my thing. It's two fingers over from the belly button, squeeze the fat and then feed it in slowly," he says. "There's nothing to fear except fear itself."

The research study is supported through the Alberta Cancer Foundation's (ACF) R.K. Dixon Family Award, established through a gift to the ACF from the estate of Robert and Kathleen Dixon.

"The chemo at home project has the potential to improve the patient experience by offering more independence and freedom," says Alberta Cancer Foundation CEO Wendy Beauchesne. "We are grateful to the Dixon family for funding this important work."



Virtual program offers help, healing

WRITTEN BY SHELLEY BOETTCHER

A few years ago, Lisa Lagrelle became a client of the Alberta Health Services Virtual Opioid Dependency Program (VODP) after hearing an Elder speak about their opioid use.

"I got involved in opiates out of peer pressure. Before I knew it, I was addicted," Lagrelle says. "I was addicted for 20-plus years."

But the Elder's story inspired Lagrelle to get the help she needed. She connected with VODP and now she is an AHS Peer Support Worker with the program. She helps others take their own steps toward recovery when they are ready.

In 2021 and 2022, more than 4,085 Albertans accessed VODP. Currently, the program has more than 1,700 clients actively receiving services from across the province, adding roughly 500 new clients each month.

More than 70 per cent of clients refer

themselves to the program, while other referrals come from physicians, addictions programs, mental health workers, police services, correction services and Indigenous communities. Clients can receive services from VODP until they feel they no longer require the support.

"The program helps people who are addicted to opiates get off opiates and maintain stability in their lives," Lagrelle says. "The VODP program supports you in this journey that you go in. It helps you get your life back in a sober manner."

The VODP provides methadone or Suboxone initiation, or Sublocade injections, which clients get from their local pharmacy. "Directions are sent to the pharmacists, who review it with each client," says VODP manager Kelly Smith. "VODP staff and the pharmacist also explain any potential side effects, and how to use these medications." The program also includes long-term treatment with psychosocial support virtually for people dependent on opioids, helping them access the services they need to live healthy lives.

Being "virtual" means the program can offer much of its support via telephone or internet, allowing ready access to clients in their own homes, no matter where they live.

When people stop using opioids, they may have a hard time talking with their families. That's where VODP is important, Lagrelle says. It provides extra help, when and how people need it.

"I call and text clients," she says. "I'm that extra support person, so they can move on and heal."

It (VODP) helps you get your life back...

PROVIDING FLEXIBLE CARE OPTIONS

'Virtual hospital' treats patients in comfort of home

Complex Care Hub an award-winning alternative to traditional hospitalization

WRITTEN BY CHRISTINE HARRIS

Sleeping in your own bed, eating your own food and taking care of your pets these are the routine moments that define everyday life for most Albertans. For people in need of hospital-level care, however, they're comforts that are sorely out of reach. An innovative program is changing that for the better.

The Complex Care Hub (CCH) was first piloted by Alberta Health Services (AHS) in 2018 at the Rockyview General Hospital (RGH) and introduced to South Health Campus (SHC) in 2019. It's now part of the hospitals' regular services as it bridges the gap between acute care sites and the community.

"It's a virtual inpatient unit that allows eligible patients to receive the same kind of care and treatment they would in hospital, but within the comfort of their own home," says Dr. Michelle Grinman, a General Internal Medicine specialist at RGH, and the originator of CCH for Calgary Zone.

Following admission through the RGH or SHC Emergency Departments, patients who are recovering on an inpatient ward—and who need nonurgent treatment that would otherwise keep them in hospital—are then offered admission to the CCH. While they receive the daily acute care they would have during a conventional hospital admission, unlike traditional inpatients, CCH patients get to live and sleep at home.

For patients like Sarah Halprin, who receives hospital-level care from her home in Calgary, the program has dramatically impacted her quality of life.

"I had never heard of anything of its kind," says Halprin of the collaboration between physicians, nurse navigators, community paramedics and IT professionals. "I was absolutely blown away that this even existed."

Under the program, patients' vital signs—blood pressure, heart rate, oxygen saturation, temperature, weight—are monitored remotely. Tablets upload this data to a web portal that physicians can access on their laptops. Rigorous safety protocols ensure patients have a direct line to their care team should questions or concerns arise while they're at home.

"They can see it in real time," adds Halprin. "You can do a consultation with the doctor. So instead of having to go into the hospital, I was able to do that from home. It's incredible."

Similar initiatives—such as Edmonton Zone's Virtual Hospital—are also in place elsewhere in the province. As for the next phase of the CCH, Dr. Grinman has helped to create a similar home hospital program in Wetaskiwin, in collaboration with a research team from Harvard Medical School.

"The plan is to adapt this type of model to reach other populations," says Dr. Grinman. "That's one of AHS' priorities, not just to serve Calgary and Edmonton, but to also be able to serve rural and remote populations."

One of the most important aspects of CCH is that it doesn't sacrifice quality of life for quality of care. Praise and recognition came in May 2022 when the program garnered the Patient Experience Award from the Health Quality Council of Alberta.

Dr. Grinman adds with satisfaction: "Patients often use words like, 'I feel safe,' or, 'I'm happier,' or, 'I got to go to my 90th birthday party,' or 'I got to see my niece or my grandchild.' We hear that a lot."

The program has dramatically impacted her quality of life

AHS community paramedic Trent Gahan, right, gives care to Sarah Halprin, at her home in Calgary. Photo credit: Leah Hennel

Coming to work each day is filled with such purpose, knowing we are helping to save lives

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Using droplets of blood taken from newborns, Dr. Farshad Niri screens for spinal muscular atrophy (SMA), a rare neuromuscular condition.

Photo by Evan Isbister

AHS expands newborn assessments

Provincial program adds spinal muscular atrophy to infant screening

Within a few days after birth, babies in Alberta undergo their first lab test, starting with a simple procedure that could dramatically change the course of their lives.

A tiny prick to the heels of their feet yields a few drops of blood that are placed onto special filter paper and sent to Alberta Precision Laboratories' (APL) newborn screening lab in Edmonton.

There, expert technologists and genetic scientists conduct tests on the more than 200 blood samples that arrive each day—searching the genetic code of each newborn for rare inherited disorders, many of which could be fatal if not diagnosed and treated in the earliest stage of life.

"Coming to work each day is filled with such purpose, knowing we are helping to save lives," says Dr. Dennis Bulman, APL's Medical/Scientific Director of Genetics and Genomics. "Newborn screening tests are always our top priority because we know that time is of the essence when it comes to starting treatment for these conditions."

Bulman's team is part of the Newborn Metabolic Screening Program, a partnership between APL, Alberta Health Services (AHS) and the Government of Alberta, that screens the province's newborns for 22 serious-buttreatable conditions.

Newborn screening in Alberta started in 1967 with a single condition— Phenvlketonuria—or PKU for short.

"This rare inherited disorder causes phenylalanine, an amino acid, to build up to levels that are toxic to the brain and nervous system," says Dr. Ross Ridsdale. He is a Biochemical Geneticist and head of Newborn Metabolic Screening, Genetics & Genomics, APL, as well as Associate Clinical Professor, Medical Genetics, University of Alberta. "Clinical laboratory geneticists and pathologists in Alberta have come a long way since then, and screening has evolved dramatically thanks to the advances in technology and genetic analysis.

"In the years since the first condition was screened, our diverse group of lab scientists have pivoted time and time again to assess, analyze, research and apply stringent quality processes and procedures to improve the testing process."

The latest addition to the newborn screening program is spinal muscular atrophy (SMA), a rare neuromuscular condition that weakens muscles by affecting the motor nerve cells in the spinal cord. SMA is a genetic motor neuron degenerative disease and is the leading genetic cause of infant mortality, but its effects can be dramatically reduced through treatment if it's caught early before symptoms appear.

Screening for SMA began in February 2022, thanks to funding from Muscular Dystrophy Canada.

Alberta was the third province in Canada to screen all newborns for SMA so they can be treated earlier and more effectively.

"My family and I are so grateful to the Alberta Children's Hospital and to



Dr. Ross Ridsdale is head of Newborn Metabolic Screening, Genetics & Genomics, at Alberta Precision Laboratories.

Dr. Dennis Bulman, APL's Medical/Scientific Director of Genetics

and Genomics.

Muscular Dystrophy Canada and all the people who rallied with us to get where we are now," says Jessica Janzen Olstad, whose infant son Lewiston was lost to SMA in 2016.

"Back then, there was no screen test for babies with SMA, nor did we know a lot about treatment. For Lewiston, it was too late, but I thought to myself, 'We could either let this swallow us whole, or put grief into action, and be part of the solution.' "

The Calgary family launched the *Love for Lewiston Foundation* to advocate for improved diagnosis and treatment of SMA. The foundation has raised more than \$1.3 million toward the cause, which has also been supported by The Alberta Children's Hospital Foundation.

In 2020-21, more than 48,000 babies born in Alberta were screened. Of them, 214 received an abnormal result and were referred for diagnostic testing, and 57 babies were diagnosed and treated for one of the screened conditions.

Brain-computer interface gives budding artist freedom to create

New technology opens up interactive possibilities

WRITTEN BY SHARMAN HNATIUK

At four years old, Olivia Terry was diagnosed with Rett syndrome, a rare genetic neurological and developmental disorder that causes a progressive loss of motor skills and speech.

Now 13, she can show off her artistic side at the Glenrose Rehabilitation Hospital, with a brain-computer interface (BCI), an innovative technology that can be used to play and create art.

"Olivia is unable to communicate verbally or through the use of her hands," says Stephen Terry, Olivia's father. "When she is using BCI, she has control of her actions and can show us what she is capable of. It's an amazing program that gives her the opportunity to showcase her abilities."

Glenrose Rehabilitation Hospital pediatric patients with restricted communication and physical control are exhibiting their independence with BCI, which creates a direct pathway for communication between the brain's electrical activity and an external device.

Users control their BCIs by thinking about specific things, which are translated to a command. Through practice, the BCI learns the specific patterns of one's brain to perform a task, such as controlling music or playing a game.

"Patients can drive a wheelchair with BCI, play with remote-controlled cars, or make changes to their environment by turning on lights or music," says Corinne Tuck, an Alberta Health Services occupational therapist and Clinical Practice Lead for Assistive Technology at the Glenrose.

"This technology is showing us just how smart these kids are. The applications we're using here are just the tip of the iceberg. BCI is one type of neuroadaptive technology whose potential we are only beginning to understand."

The Glenrose Rehabilitation Hospital Foundation raises funds that fuel innovation, research and technology to enhance the exceptional patient care at the Glenrose Rehabilitation Hospital. Donors to the foundation have so far contributed \$385,000 toward BCI at the site, offering pediatric patients new possibilities and new ways to interact with their environments.

In addition to BCI sessions, patients such as Olivia receive foundation-funded home BCI kits with commercial headsets, which allow them to practice their skills at home while playing with robots, video games or other customized applications developed by the Glenrose team.

Olivia's parents know she loves having access to the technology just from seeing the smile on her face during her BCI appointments.

"It's wonderful to see her engaged in age-appropriate activities and be able to express herself," says Stephen.

And she is paying it forward: Olivia has gifted one of her artworks to the Glenrose Rehabilitation Hospital Foundation to help raise funds for BCI research. ■

BCI offers patients new ways to interact with their environments

Olivia Terry gets ready to paint a picture during her brain-computer interface appointment at the Glenrose Rehabilitation Hospital in Edmonton. Olivia has restricted physical control of her hands, but can express her creativity by wearing a headset that acts as a direct communication pathway between her brain's electrical activity and a Bluetooth robot.

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Photo by Evan Isbister

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Right on target Alberta physicist's cancer imaging and treatment technology is a game-changer

X-rays reveal dense matter in the body, such as broken bones and solid tumours. But X-rays of tumours in soft tissue, such as those in the lung, breast, or prostate, are often ill-defined and hazy.

Magnetic resonance imaging (MR) improves the ability to see cancer tumours clearly. After the target is identified, however, moving patients from an MR machine to a linear accelerator (Linac) for x-ray radiation treatment creates a new problem, because tumours in soft tissue often shift during movement.

Now, thanks to an Alberta innovation, those two technologies have been integrated into one device. The new machine may make treatment more effective and potentially will reduce the number of radiation sessions patients with soft-tissue tumours must undergo.

Medical physicist Dr. Gino Fallone thought of combining the two technologies–MR and a Linac, which delivers therapeutic radiation–to track and treat a tumour in real time. Radiation is capable of destroying cancer, while MR provides increased visibility. The combination, however, was widely believed to be impossible. The opposing technologies could interact or compete, with dangerous effects.

"These technologies are 'allergic' to each other. The machines have to be installed at least 10 metres apart in a treatment centre, because one interferes with the operation of the other," says Fallone, Director, Medical Physics, Cross Cancer Institute and Professor and Director, Medical Physics, Dept. of Oncology, University of Alberta.

"The result? No effective radiation, no working image of the tumour," he says.

Despite those challenges, the concept of a hybrid machine stayed with Dr. Fallone and, over the following yearswith competitive grant support from the Alberta Cancer Foundation (ACF), Alberta Innovates, and others-he led the Linac MR development at the Cross Cancer Institute (CCI) in Edmonton.

By 2008, they had the world's first working prototype, publishing their landmark paper in Medical Physics a year later. A series of worldwide patents were awarded to AHS. Refinements to the modular design allow it to be installed in existing clinics, as well as rotate around patients of different sizes, and treat tumours in any location in the body.

The Linac MR is currently undergoing clinical trials after being certified and licensed by the Canadian Nuclear Safety Commission in 2021 and 2022.

The team hopes the Linac MR will be standard of care within the next five years. Until then, trials will continue.

The Linac MR was commercialized as the Aurora-RT and, in May 2022, the U.S. Food and Drug Administration cleared it for sale in the United States. Regulatory approval for sale in Canada is forthcoming.

For his scientific contributions, Fallone was knighted by the President and Prime Minister of Italy, his birthplace. In 2021, he was awarded the Gold Medal of the Canadian Organization of Medical Physicists, and inaugural Alberta Lifetime Contribution Award in Cancer Research. ■



Linac MR patient trials begin

In 2021, Dr. Nawaid Usmani asked if his former patient, Len Friedenberg, would be interested in helping to test the new Linac MR technology in Alberta.

Friedenberg, who lives in rural Alberta, near Edmonton, didn't hesitate to help.

"It was more about confirming that it worked the way it was supposed to," Friedenberg says.

Linac MR technology promises to be of particular benefit to rural patients like Friedenberg, since it reduces the number of radiation sessions needed to treat soft tissue tumours, and therefore cuts travel time to hospital.

As of press time, 38 patients have been enrolled in the trials at the Cross Cancer Institute.

"As researchers, we dream of new technology that has the potential to make a huge difference in treating cancer," says Dr. Usmani, a radiation oncologist and University of Alberta Professor.

He is leading the clinical trials of the Aurora-RT, as part of a program entitled Northern LIGHTS.

"Not only will the hybrid design give us live MR imaging, allowing us to clearly see and treat more types of soft-tissue tumours, but we can confidently increase the radiation dose because the tumours are so much more visible."

The new technology also offers better treatment and can be done in less time. "We can reduce the number of treatment sessions down to five, possibly, when as many as 39 sessions might have been necessary 15 years ago," Usmani says. "For patients from Grande Prairie, or Yellowknife, who are being treated far from home, that is huge."

Linac technology reduces the number of sessions needed As an Albertan with a background in tech and imaging, Friedenberg is excited about what the opportunity means for other Albertans. "It's very interesting,' he says.

David Dyer, CCI Executive Director, agrees. "To expand the use of radiotherapy to things we couldn't treat this way years ago is wonderful. It's a real tribute to the expertise here at AHS and the University of Alberta."

BY THE NUMBERS

In 2022, Alberta Health Services received **1,379 requests** to initiate clinical studies (including surveys, physical tests and highly regulated clinical trials).

AHS also supported cancer clinical trials, with **855 patients** enrolled.

A further **1,555 patients** were involved in clinical studies that involved drugs or devices at AHS sites where Connect Care is active.



Ultrasound device expands accessibility

WRITTEN BY GILLIAN RUTHERFORD

Ultrasound is one of the most commonly used diagnostic tools in Canada, and a new AI-powered portable ultrasound system makes scans and diagnoses accessible from anywhere. It can analyze thousands of previous results and provide remote diagnostic support within seconds.

Using the device created by Alberta Health Services (AHS), radiologist Dr. Jacob Jaremko and his team, a non-expert can learn, with brief training, how to use a portable ultrasound device to scan for thyroid cancer, hip dysplasia in infants, breast cancer, arm fractures and even heart and lung problems.

The images are uploaded to a secure AI app, which then compares them with the results of other tests to determine whether there is an abnormality.

The goal is to make access to healthcare more equitable and improve outcomes for patients, said Jaremko. He is the project lead, a radiologist and associate professor in the U of A Faculty of Medicine & Dentistry and the Canadian Institute for Advanced Research (CIFAR) AI Chair at the Alberta Machine Intelligence Institute (Amii).

Studies have shown that patients living in low-income neighbourhoods and rural, remote and Indigenous communities access ultrasound less than other Canadians.

"The further away you are from the

main hospital—either geographically or socio-economically or culturally—the more likely this will be to help you," said Jaremko, who co-founded MEDO.ai, an Edmonton-based company, to commercialize the technology. "It really enhances the equity of care for Albertans."

"You're taking expertise learned from the experts in the hospital and delivering it to the patients, rather than having the patients come to the hospital."

Dr. Julie Hernberger is a family doctor in Red Deer who has scanned about 40 newborns' hips since October using the handheld ultrasound device plugged into a tablet.

She takes less than a minute to do the scan, uploads the images and gets a result back immediately. In the past, any babies in Red Deer suspected of having hip dysplasia had to be sent to Edmonton or Calgary for formal ultrasound scanning.

"This can save a lot of time for the patient and money for the healthcare system," Hernberger said.

Hip dysplasia occurs in about one in a thousand births and is more common in females, breech babies and some ethnic groups. It is treatable if caught early, but can lead to lifelong arthritis if it isn't.

"If I can scan every baby I take care of and prevent them from having to face that kind of surgery when they're 20 years old, then I feel like I've accomplished something great," said Hernberger.

The hip dysplasia ultrasound system is being tested at Westview Primary Care Network in Spruce Grove and Saint Mary Clinic in Red Deer. Plans are in the works to expand the system to other parts of the province.

The project is being tested across Alberta thanks to a \$450,000 grant from TD Bank Group. It expands on a pilot project originally funded by Alberta Innovates.

Jaremko held the Alberta Health Services Endowed Chair in Diagnostic Imaging at the U of A from 2011-2021 and is a partner at Medical Imaging Consultants. His research is also supported by the Stollery Children's Hospital Foundation through the Women and Children's Health Research Institute and Alberta Innovates. ■



Dr. Jacob Jaremko is leading a project to expand access to a new portable ultrasound system.

Photo by Laughing Dog Photography



New hospital gives patients access to 'smudge button'

WRITTEN BY SHELLEY BOETTCHER

The new Grande Prairie Regional Hospital (GPRH) is the first Alberta Health Services (AHS) facility to have built in a "smudge button" to support Indigenous clients, patients and staff to be able to smudge in the facility.

Smudging is a traditional Indigenous ceremony. It involves the burning of sacred medicines such as sage, sweetgrass, cedar and tobacco accompanied by prayer.

Smudging is offered at all AHS facilities but at some it can take time to set up to ensure the patient has privacy to pray and other patients are not disturbed.

The ventilation system at GPRH has been adapted to ensure nearby patients aren't able to smell the minimal smoke created from a smudge. Any smoke is contained within the room where the smudge ceremony is occurring.

"The ability to smudge within a patient's room at Grande Prairie Regional Hospital is a huge step toward reconciliation," says Shannon Dunfield, manager, North Zone Indigenous Health and Diversity. To access a smudge, a patient first requests one from the hospital's Indigenous Health Coordinator. The Indigenous Health Coordinator then connects with the appropriate staff, who activate the smudge button in the building management system.

Within a few minutes, the air flow in the patient's room is closed off from the rest of the hospital; fresh air still comes into the room but is then ventilated outside, instead of recirculated. The patient or Indigenous Health Coordinator can then facilitate the smudge. Once smudging is complete, they then let staff know to turn ventilation back to normal operations.

"It's about better support for the Indigenous communities that the hospital serves, and it supports the AHS patient-first strategy," says Brendan Martins, AHS Lead, Facilities Maintenance and Engineering.

Martins, who is from the Carry the Kettle Nakoda Nation in Saskatchewan, worked with the rest of the team at GPRH as well as the GPRH Indigenous Engagement Committee to make the smudge button a reality. He says the change never would have happened without the support of the management team on site.

"It's been an extremely positive experience," says Martins. "The Elders who were involved were impressed that we were making efforts to make it possible."

Dunfield is Cree and Metis from Kelly Lake, British Columbia. She says the ability to smudge has been very well received, improving Indigenous patients' experience when in care.

"It helps our people feel welcome and culturally safe when they come into the hospital," she adds.

Patients and families who wish to request to hold a spiritual ceremony at any AHS site can connect with Site Leadership, or the Indigenous Health Coordinator at the hospital. They can also email ceremony@albertahealthservices.ca.



Trial may change stroke treatment globally

WRITTEN BY KELLY JOHNSTON

In the largest stroke clinical trial ever run in Canada, researchers have shown Tenecteplase (TNK)—a safe, welltolerated drug commonly used as a clot-buster for heart attacks—is also an effective treatment for acute ischemic stroke.

Led by researchers at Foothills Medical Centre, the study included 1,600 patients at hospitals throughout Canada.

"Through this collaboration, these findings could revolutionize stroke treatment throughout the world," says Dr. Bijoy Menon, a neurologist in the Calgary Stroke Program and principal investigator on the study.

"TNK is known to be an effective clot-dissolving drug. It is very easy to administer which makes it a game changer when seconds count to save brain cells."

Based on current guidelines, Alteplase (tPA) is the recommended drug for acute ischemic stroke patients. The challenge is that the drug is more complex to administer. It takes up to an hour and requires an infusion pump that needs to be monitored. The pump can be cumbersome when transporting a patient within a hospital, or to a major stroke centre for treatment.

Because TNK can be administered as a single, immediate dose, it saves critical time for patients and makes transportation—by ambulance or STARS —much easier. It will also make the treatment more accessible to patients in less-affluent countries where infusion pumps aren't available.

The AcT study compared TNK to tPA in a randomized trial. The results, published in July 2022 in The Lancet, showed that TNK worked as well as, if not better than, the current recommended drug, tPA.

AHS is now switching to TNK for acute stroke. The first patient received the drug in normal practice in Red Deer in late 2022. It will be available across the province by the end of February 2023.

NEJM Journal Watch also named the trial one of the top 10 research breakthroughs in neurology in 2022.

"This trial is already changing guidelines and practice worldwide including in Europe, Asia and the U.S.," says Dr. Menon.

"We are now designing a large platform for multiple TNK trials that will be truly global in scope." TNK attaches itself to the clot for a longer period of time than tPA—which means that blood flow is restored faster and for a longer period of time.

Along with discovering a better way to treat acute ischemic stroke, the team also established a more cost-effective and efficient way to conduct clinical trials.

The trial engaged patients and their families in study design and completed all enrolments between Dec. 10, 2019 and Jan 25, 2022, during the pandemic when health systems were under significant stress.

The study involved 22 primary and comprehensive stroke centres across Canada and was supported by the Canadian Institutes of Health Research, Alberta Strategy for Patient-Oriented Research, Alberta Innovates, Heart and Stroke, Quality Improvement and Clinical Research Alberta Stroke Program, and the Canadian Stroke Consortium.

TNK saves critical time for patients



Buzzworthy project boosts mental health, mindfulness

WRITTEN BY CHRISTINE HARRIS

A buzzworthy new initiative has come to Alberta Hospital Edmonton (AHE) with the introduction of beekeeping to its on-site horticulture program.

The sweet idea is in partnership with YEG Honeycomb, and it's part of an urban beekeeping pilot to bring colonies and beekeeping to six historic sites across the Edmonton area.

As well as receiving treatment for mental health issues, AHE patients participate in horticulture programs as part of their therapy and care. YEG Honeycomb gives them the opportunity to gain first-hand knowledge of beekeeping, beginning with the basics and eventually helping to manage the hives.

"Our larger mission within Addiction and Mental Health is patient-centred care," says Darren Crawford, Program Manager, Allied Health and Patient Experience at AHE. "We look at an individual's interests, goals and what will help them sustain a healthy, positive life as they leave the hospital and become involved in their community."

"Creating opportunities to see



patients engaged, harvesting the honeycombs and supporting that process will help them with their mental health and attaining goals to move forward and, transition out of the facility and into the community."

The pilot was introduced to AHE in 2021 and will continue to develop at the hospital over the coming years.

"I feel extremely privileged to be working with Alberta Hospital Edmonton," says Enessa Habib, beekeeping expert and YEG Honeycomb owner.

"Sometimes we're inclined to start looking after something that is smaller or more fragile than we are like honeybees, which are on the decline. I think that can really reflect positively back on us—and help us with what we need to do to take care of ourselves."

FORGING HEALTHCARE PARTNERSHIPS

Better finances, better health

Registered nurse Lacey Smoole describes meeting Mark, a patient with diabetes, at Life Medical Clinic in Whitecourt.

"He seemed engaged and eager to manage his diabetes," says Smoole, a chronic disease nurse and practice facilitator with the McLeod River Primary Care Network (PCN).

"But as we started reviewing his home readings and lab work together, things were still the same, if not worse from his last appointment. His blood sugars were wildly out of control."

She and Dr. Joseph Ojedokun, a Life Medical Centre co-owner and physician who works in Alberta Health Services' emergency department in Whitecourt, began to ask questions: Have you been taking your insulin, or have you forgotten any doses? What are your meals like?

It became clear that Mark's income at the time was insufficient, a powerful factor impacting health. Financial strain is linked to higher rates of cancer, chronic disease and higher healthcare utilization.

The experience was a catalyst for creating the Reducing the Impact of Financial Strain (RIFS) project. In 2021, RIFS received a Patient Experience Award from the Health Quality Council of Alberta. It has also received funding to expand provincially.

Several AHS and community groups began collaborating in April 2018 to create RIFS, screening and referring patients to supports in their communities. Groups included AHS, the Alberta Medical Association and several Northern and Central Alberta communities and their PCNs, including the McLeod River PCN and Life Medical Clinic.

Participating healthcare teams asked more than 600 patients questions such as: Do you ever have trouble making ends meet? Do you feel lonely? Are you able to afford your medications? Do you have transportation issues? What's important to you?

Of that patient group, about 30 per cent reported a need for further resources. Of that smaller group, about 80 per cent accepted referrals for financial assistance, mental health, and medication assistance.

PCNs and AHS worked closely with various local organizations to develop initiatives, driven by community and patient needs and availability.

Patients see their healthcare provider, who, depending on the community and patient needs, then connects them to appropriate initiatives and partners including AHS Addictions and Mental Health, housing agencies, social workers, Alberta Works, food banks, employment agencies and local libraries.

The libraries provide Wi-Fi access, and in some cases, a computer lending program so people can access healthcare benefits, social services and employment opportunities. Patients such as Mark, and people who may not have been accessing



the healthcare system, now have more holistic support—even transportation vouchers if needed.

"The entire healthcare team-not just physicians-worked together," says Dr. Ojedokun, also an assistant clinical professor in the Faculty of Medicine and Dentistry at the University of Alberta. "We had to train our staff to encourage patients to bring up these issues."

In Mark's case, three months later, as a result of RIFS support, he was receiving help from a chronic disease nurse and the local food bank. He received resume support, and he found employment. As his life situation improved, his overall health improved.

LEARN MORE

Reducing the Impact of Financial Strain (RIFS) may help improve health in your community. Find out more: financialwellness.healthiertogether.ca

RIFS RECOGNIZED

In 2021, RIFS received a Patient Experience Award from the Health Quality Council of Alberta. The annual award goes to initiatives that improve the way patients receive healthcare services.

In particular, it recognizes the contributions of the McLeod River Primary Care Network and Life Medical Clinic.

Jessica teaches the Music for People with Dementia program in Lacombe. Photo by Evan Isbister

Finding a voice through music

WRITTEN BY KIM BRADLEY

People living with dementia often lose the ability to communicate with family members as the disease progresses, but the *Music for People with Dementia* program in Lacombe is helping one man regain his voice.

Frank was diagnosed with dementia in 2020, but his wife Jackie had noticed a decline about five years before that. His memory loss began impacting his ability to speak to Jackie and sometimes even recognize her. "He seldom recognizes me, and when he does, he's surprised that I am his wife," says Jackie. (The couple has requested that AHS not include their last name in this story.)

But since he joined a music program for dementia patients in Lacombe, taught by Jackie's niece Jessica, he started singing Jackie love songs.

"He's a romantic, that's for sure. Every once in a while, he'll put his arm around me and sing me Elvis, *Love Me Tender*," Jackie says. "He is very musical and loves to dance, and he loves the rhythm. If I play something on the radio and if I get him up moving and dancing, he's a lot happier. He has trouble with orientation and recognition so this is helping with that."

Frank, 71, lights up when he talks about the program. "I like it very much," he says. "I dance a little bit, sing a little bit, happy songs. Oh my darling, Oh my darling, Jaa....ckie. Oh my darling, oh my darling, Jaaa...ckie," Frank sings to his wife of 20 years while talking about his classes.

Jessica, a certified music teacher, told them about the music program and after the first class, Frank's mood and demeanor improved.

"It is so much fun--and really moving as well. There are times when I get pretty emotional if I think about it," Jessica says. "Certain songs trigger certain memories and they become different people. It's so special. Frank loves *Rocket Man* by Elton John and *Bugle Boy* [by The Andrews Sisters]. He will get up and dance to that one."

Alexandra Seefeldt is an Alberta Health Services (AHS) Community Recreation Therapist in Lacombe. She says that the music program, which is part of the Dementia Friendly Lacombe Working Group, is improving the lives of the people with dementia.

The Dementia Friendly Lacombe Working Group participates in the Connecting People and Community for Living Well initiative. Through the initiative, they are able to access resources, share their successes and challenges, and learn from others across the province doing similar work.

"We have seen great engagement with those living with dementia," she says. "They have expressed a feeling of acceptance within their local community, as well as a better mood. Music is a great way for those living with dementia to express themselves in a different, but unique way."

INNOVATING TO IMPROVE HEALTHCARE



Championing Connect Care

WRITTEN BY SUZY THOMPSON

Dr. Tony Truong says his patients often face a lifetime of health effects from intensive childhood cancer treatments. Connecting the dots and seeing patterns in these patients can be difficult when records are scattered.

But data derived from patient histories through Connect Care at Alberta Health Services (AHS) could prove invaluable to help patients in the future, he says.

"What kind of interesting research can we explore, now that we have pooled provincial information?" says Truong, a pediatric oncologist at the Alberta Children's Hospital, where Connect



Care was implemented in May 2022. "The data are there. Now we can

ask questions and try to find out some answers."

Every day, AHS is involved in an array of clinical studies. The AHS Health System Access team works with researchers, academic institutions and affiliated research institutes and centres to support health research across the province.

For researchers and those supporting clinical trials, Connect Care's pooled data will enable better research and, from that, higher-quality care, says Breanne Stewart, a former AHS research coordinator now with the University of Alberta's Quality Management in Clinical Research team.

"Connect Care is a very useful tool for research," Stewart says. "It can streamline processes, improve efficiency and improve patient recruitment across the board."

Connect Care's continuous record of care further strengthens the safety of patients participating in clinical trials and ensures access to better information for healthcare providers. For instance, before Connect Care's centralized record, information about a patient's involvement in an experimental

Dr. Tony Truong is a pediatric oncologist at the Alberta Children's Hospital.

treatment might not have been available to all members of the care team. Now all of a patient's information is close at hand, and available to all care providers.

Connect Care has also been a game changer for efficiency and staff and patient safety during the COVID-19 pandemic. When University of Alberta researchers were conducting 11 concurrent COVID-19 related trials in 2021, COVID-19 protocols made it difficult to meet directly with patients for screening or follow-ups.

"But with the help of Connect Care, patients were able to do almost everything virtually," says Scott Jamieson, Director of Clinical Operations for the University of Alberta's Clinical Research Unit, who oversees quality management in clinical research.

Before Connect Care, tying information together meant visiting sites, searching charts and records manually and then compiling information to study. "Now, everything is available remotely," Jamieson says.

With Connect Care, he notes, "you're learning about the patient. You can see if there was an adverse event. Was it reported in the research data? It's a world of difference."



Speaking in one's own voice vital to well-being

Program helps patients tailor how they communicate

WRITTEN BY SHARMAN HNATIUK

Parker Pothier, who identifies as a nonbinary transgender person and uses they/ them pronouns, learned to create a voice that matches their self-image, thanks to guidance and support in the Voice and Resonance Program at the Glenrose Rehabilitation Hospital.

"When I got excited or energetic, I felt like my voice was breaking," says Pothier. "My job is largely on the phone and I found it very stressful in situations on the phone where I was misgendered. I was struggling to perform my job while being able to represent myself in the way I wanted to be heard."

Pothier learned of the gender-affirming voice training through a local Facebook group; they discussed the option with their family physician, who then referred them to the program.

Once there, Alberta Health Services' speech language pathologist Teresa Hardy assessed Pothier's voice and communication characteristics, including vocal pitch, resonance, intonation, loudness, voice quality and articulation.

"In my role, I present options for voice change and guide clients through exploring different sounds and manners of speaking to find one that feels right for them—and to do so in a way that promotes healthy voice function," Hardy says.

For Hardy, helping individuals feel comfortable and confident in their day-today interactions is incredibly rewarding.

"Many of the people who come to this program have experienced marginalization at home, school, work or in their community. Many have experienced harassment or physical harm at the hands of others because of the way they communicate," she says. "For some individuals, making their voice and other aspects of their communication congruent with their self-described gender identity and/or desires for gender expression can be life-saving."

Pothier is eager to help create awareness about the service by sharing their experience at the Glenrose.

"For each trans person, each nonbinary person, each queer person, their experience is so unique. To be able to have the power and control to tailor your experience for what works for you is extremely empowering," says Pothier.

"Although it isn't talked about very much, there are a lot of people struggling with their voice. Having access to this program and working with people like Teresa helped me feel validated, and that my voice is important."

Many who come to this program have experienced marginalization.

EMS research making a difference

First Nations experiences with paramedic services in Alberta

An analysis of the experiences of First Nations members and paramedics is providing AHS Emergency Medical Services (EMS) with a foundation for service improvement.

The researchers studied the firsthand experiences of virtual sharing circle participants, including Elders, First Nations patients and caregivers, paramedics, other health professionals, EMS medical directors and provincial EMS leadership.

"One of the main takeaways of this work is that First Nations should lead in designing and setting priorities for paramedic services in their communities," says John Taplin, Advanced Care Paramedic and one of the researchers on the project. "There is also a need for greater support for First Nations members to enter and remain in the paramedic profession."

Other key findings:

- First Nations members face discrimination and systemic barriers when accessing paramedic and other health services.
- First Nations members may avoid care based on previous negative experiences with paramedic and other health services, contributing to poor health outcomes.
- · Redefining how paramedics view their roles and the service they provide could improve care interactions and promote referrals to necessary services including primary care, through which access to family physicians is available. "This study confirms that gaps in

care exist when paramedics respond to First Nations members", says Dr. Mark MacKenzie, Senior Medical Director for AHS EMS. "It also provides direction for actions that EMS will take to improve service delivery while building partnerships with Indigenous peoples."

The study is led by Lea Bill, Indigenous Knowledge Holder and the Executive Director of the Alberta First Nations Information Governance Centre and a partnership with the AHS Emergency Strategic Clinical Network[™], AHS EMS, the University of Alberta, and the University of Calgary. ■

Exploring AHS EMS workplace culture

Assessing Workplace Culture at Alberta Health Services EMS is a research project that surveyed close to 800 EMS staff in 2021.

Led by Nicola Cavanagh, AHS EMS researcher and senior project manager, the study identified several themes common across roles, zones, and work areas. Findings suggest common feelings and themes among all staff, including:

- a need for personal and professional respect and value;
- a desire for enhanced collaboration;
- consideration of power dynamics and identity in the workplace;
- and a need for opportunities for growth and development.

Combined with results from the 2022 Our People Pulse Survey, an AHS-wide assessment of employee engagement and well-being, recommendations from the culture assessment have been integrated into the EMS service plan, and initiatives

aimed at strengthening EMS workplace culture are currently being developed, Cavanagh says.

"The lived experience of those who took part in the EMS study help show where we can focus on improving," she says. "Until now there hasn't been a good understanding of the factors that contribute to EMS workplace culture and how to improve it." ■

National Paramedicine Research Dav

Alberta Health Services was a key partner in the first national Canadian Paramedicine Research Day in 2022, bringing together more than 800 virtual attendees from coast to coast.

"Paramedicine Research Day is our day to reflect on how we can use research and evidence to improve the care we provide to our communities," says Dr. Ian Blanchard AHS EMS Scientist and principal co-organizer of the event.

This national event is an important milestone for the fledgling profession of paramedicine, evolving from the annual Alberta Provincial Research Day. The next Paramedicine Research Day will be held May 25, 2023, during Paramedic Services Week, with Alberta paramedics once again taking key leadership roles in the organizing committee. To find out more please visit: www. canadianparamedicineresearch.ca.

EMS research helps improve service delivery and ultimately contributes to our priority goal of reducing EMS response times.

AHS garners global awards for innovation

Alberta Health Services (AHS) has won two prestigious awards.

The achievements come in the field of intelligent automation combining artificial intelligence and machine learning to automate business processes—while using the software of SS&C Blue Prism Group Plc, an organization based in the United Kingdom.

"The Blue Prism Customer Excellence Awards celebrate groundbreaking successes our customers have achieved with their digital workforce in building the future of work," says Emma Kirby-Kidd, head of Blue Prism's Robotic Operating Model. She announced the winners in June 2022.

"These awards showcase our customers' inspiring innovations, creative projects and bold use of Blue Prism to transform their businesses and free their people to do what they are good at."

AHS won the Business Value Driver-Global Award, and the Best Newcomer-Americas All-Star Award, out of more than 180 submissions.

"The work is helping transform AHS by developing automation

programs that create efficiencies and allow us to reinvest and support clinical care," says Sean Chilton, AHS Vice President People, Health Professions and Information Technology.

Over the past 18 months, AHS successfully designed intelligent automation to do repetitive, timeconsuming tasks such as job-offer letters, forms, financial spreadsheets, patient refunds, staffing documents, reports and more.

Intelligent automation has benefited multiple AHS departments and freed up time equal to 21 full-time jobs, adding much-needed capacity and flexibility to these departments.

"Robotic Process Automation (RPA) technology is software that literally mimics the work that people do," says Jesse Tutt, AHS Program Director, IT Intelligent Automation.

"It's software that can log into a computer, open an application, do some work, log out, and repeat the process over and over, 24 hours a day, seven days a week. It can mimic keystrokes and mouse clicks of people for simple tasks. It will never automate a person, but it can automate specific steps.

"One of my favourite expressions is this — 'If you hate it, automate it' especially when it comes to high-volume, boring work that people hate doing. We're not taking people's jobs here. We're freeing up needed capacity so teams and staff can get caught up with increasing demand."

Ana Neves is a Vendor Maintenance Administrative Assistant with AHS. She says the new software has made a big difference in her workload. "Prior to automation, we would receive Excel files daily, sometimes containing more than 100 patient accounts to set up; this could sometimes take up hours of my day," says Neves.

"Since the automation, I just need to correct any errors that come up after setup, which now takes just minutes out of my day. It has made a huge impact as my time is freed up to focus on more complicated vendor setups and changes."

Penny Rae, AHS Chief Information Officer, adds: "This work frees our staff from repetitive tasks so they can do more complex, value-added and rewarding work."

