

CIRCULATE

MAZANKOWSKI
ALBERTA
HEART
INSTITUTE
ANNUAL
REPORT
2018

PREHAB
IN SHAPE FOR
CARDIAC SURGERY



CONGENITAL
HEART FORUM
WISE BEYOND
THEIR YEARS

Q+A
UNDER THE
MICROSCOPE

RESEARCH
IN ACTION



CONTENTS



FEATURE STORIES

2
Prehab
In Shape for
Cardiac Surgery

6
Congenital
Heart Forum
Wise Beyond
Their Years

10
Q+A
Under the
Microscope

12
Research
in Action



1. Leaders' Message
2. Prehab
In Shape for Cardiac Surgery
3. Maz Facts
6. Congenital Heart Forum
Wise Beyond Their Years
8. Mechanical Circulatory Support:
Ventricular Assist Device Program
From Life Saving to Life Changing
10. Q+A
Under the Microscope
12. Research in Action
14. Bright and Roomy
New Pediatric Cardiac ICU
16. The Circulation of Ideas
Quality Council Initiatives Guide
Ongoing Improvement
18. Be Prepared
Simulation Creates Real Life Drama
in the Maz
22. The Amazing Heart Facts

This Annual Report was made possible thanks to the generous funding provided by the University Hospital Foundation.



93%
**2017-2018 Overall
Patient Satisfaction**



LEADERS' MESSAGE

It feels like a very short time ago we were sitting down to introduce our second Annual Report, State of the Heart. Here we are now looking back on 2017-2018 and thinking about how quickly it went.

Over the past 12 months we saw many successes and a few challenges, but overall it was a year where we grew and became stronger as a team.

The heart of the Maz is our patients and their families and ensuring excellence for our patients is our number one priority. It seems to be working. Patient satisfaction surveys reflect greater than 93% satisfaction, indicating that we continue to meet or exceed the expectations of our patients and their families. Patients and their loved ones continue to express sincere appreciation for the care they have received and the impact it has had on their lives. The general sentiment is captured perfectly in this note from a patient who received an aortic valve replacement:

I will be forever thankful for such a fabulous facility with so many wonderful professionals who helped me through a difficult time. As a result myself, my

family and friends have all taken a bigger interest in our health, be it through education, diet or exercise.

We only have one life to live but I am so glad I have had my life extended through this scary yet rewarding experience!

The Maz's reputation for leading the way in cardiac care continues as we share our knowledge and expertise with healthcare professionals locally, across the nation and beyond. Conferences, such as the *Cardiac Surgery Update* and *Nurse Practitioner Forum*, have provided a platform for nursing and allied health professionals to network and learn about the latest innovations in cardiac care. Educational opportunities for physicians, including the first *Complex Revascularization Course*, saw Interventional Cardiologists from around the world gather at the Maz in late 2017. Through live case presentations led by our team of experts, attendees learned

about the latest treatment options and technologies utilized to treat complex coronary artery disease.

Looking to the coming months and the year ahead, we see many more exciting opportunities that will directly impact our program and the care that we provide. *Connect Care* will transform how we deliver care with the implementation of a common clinical information system. We are confident it will help us continue to build on our desire for excellence.

For this year's annual report, we have chosen an approach that brings together the amazing work you do in a collection of stories. The stories all have a common thread: the pride each member of our team shows in their work and commitment to our patients and their families. We hope you enjoy it!

Dr. Robert Welsh
Zone Clinical Department Head
Cardiac Sciences, Edmonton Zone

Mishaela Houle
Executive Director
Cardiac Sciences, Edmonton Zone





Alberta Health Services



MAZANKOWSKI
ALBERTA HEART INSTITUTE

FACT SHEET

Inspiring Innovation and Knowledge; Leaders in Patient Care



The Maz has established one of the leading heart programs in North America, providing care to medical and surgical patients in Edmonton, Northern and North-Central Alberta, Northern British Columbia, Saskatchewan, Manitoba, the Yukon and Northwest Territories.



The Maz is home to the Servier Virtual Cardiac Center - a leading edge research and technology lab that utilizes 3D technology. This is the 1st of its kind in Canada.

The Maz is the only center in Northern Alberta to provide care to patients requiring advanced treatment for cardiac and respiratory failure.



93% or higher patient satisfaction rate



The Maz is an international leader in education and a top designation for students seeking to specialize in the cardiac field.



A strong partnership with the University Hospital Foundation - has helped build and equip the Maz with the most advanced technology and innovative programs.



The Maz supports collaborative zone programs such as the Northern Alberta Cardiac Rehabilitation program, Transcatheter Aortic Valve Implantation (TAVI) program and Vital Heart Response (VHR), leveraging expertise across the Edmonton Zone.



The Maz supports research from bench to bedside supporting basic science through to clinical trials.

Multidisciplinary team members support **over 225 publications each year.**

Over \$1.5 million dollars in research funding received annually from a variety of funding sources.

Exceeding 600 adult and pediatric electrophysiology cases yearly



More than 5000 adult angiograms and angioplasties annually



Over 250 pediatric angiograms and interventions each year

State of the art hybrid operating room supports a collaborative approach with multidisciplinary team members working together on the same patient, in the same room, at the same time.

The Maz has the largest Adult and Pediatric Heart-Lung Transplant Program in Western Canada - serving an area over 65 million km².
Over 95 Adult transplants (heart, heart-lung, lung) per year

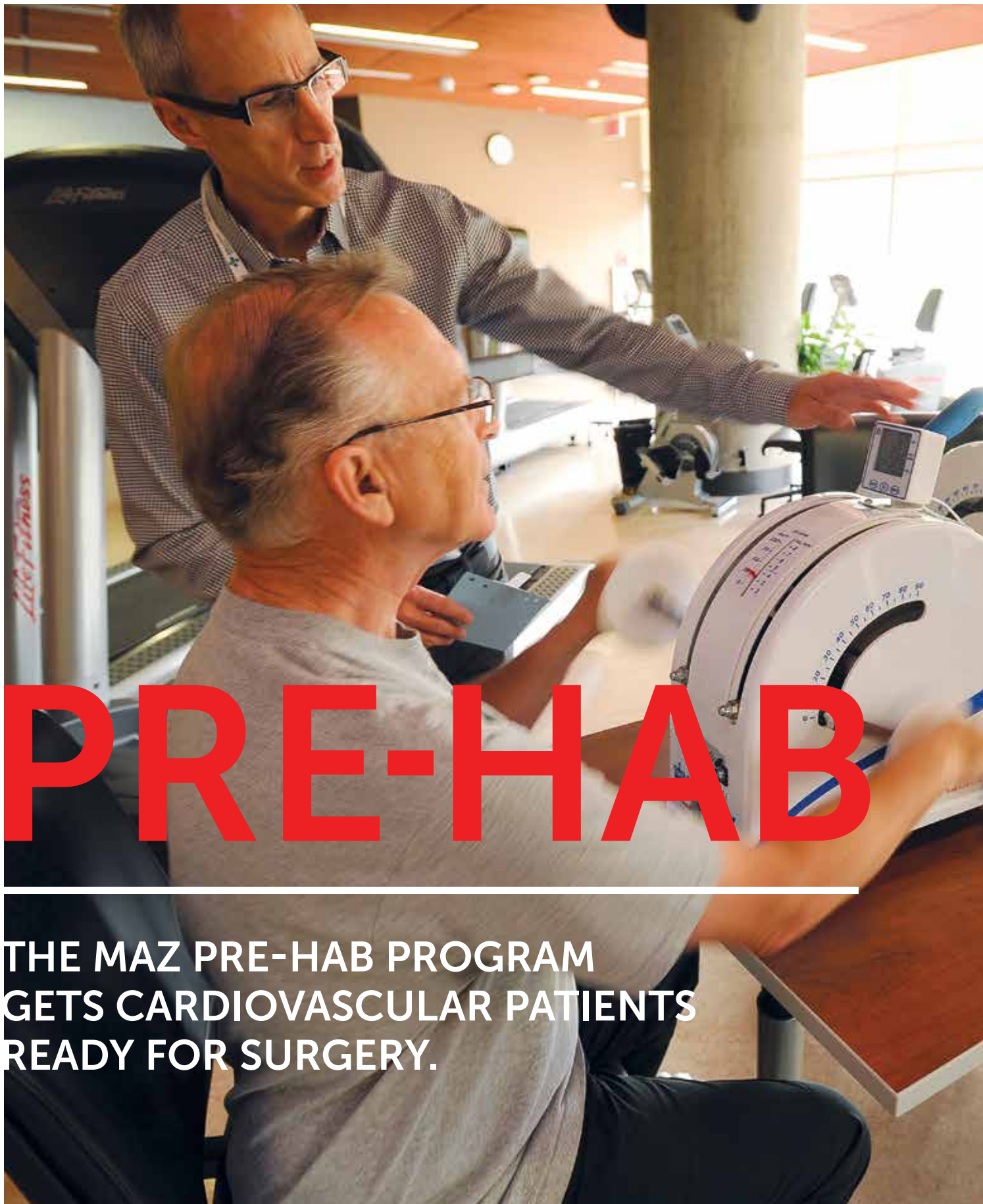
The Maz features the unique Guru Nanak Dev Healing Garden, a peaceful setting of indoor waterfalls and lush foliage for patients, families and staff.



Nearly 7,000 admissions to inpatient units

Over 18,000 multidisciplinary outpatient visits to cardiac clinics

Nearly 1,500 adult and 400 pediatric open heart surgeries performed each year.



PRE-HAB

THE MAZ PRE-HAB PROGRAM
GETS CARDIOVASCULAR PATIENTS
READY FOR SURGERY.



IN SHAPE FOR CARDIAC SURGERY

How do you help prepare a patient for cardiac surgery?
Enter Cardiac Pre-habilitation (Pre-hab). And no, that is not a typo!

“Pre-habilitation” has long been used to improve a patient’s health, strength and stamina ahead of orthopedic surgeries (such as knee, hip and shoulder procedures) and oncology procedures (treatments for cancer). The pre-hab program at the Maz builds off this knowledge and expertise.

A NEW ROUTINE IN CARDIAC CARE.

Pre-hab is a relatively new concept in the field of cardiovascular surgery.

Inspired by findings from published research that demonstrated improved outcomes for heart patients who underwent pre-habilitation, efforts were made to establish the Pre-hab Program

at the Mazankowski Alberta Heart Institute in 2014.

Nurse Practitioner, Andrea Van Damme is the first point of patient contact for those who have been referred to the program by their physician and a peer review panel. In most cases, patients begin exercising four to eight weeks before surgery.

“In the patients we have worked with, increasing cardiovascular capacity had the biggest impact on post-operative outcomes. So that is a major focus,” Van Damme says.

Those participating in the Pre-habilitation Program receive supervised exercise sessions and education. Exercises include moderate

aerobic activity, typically on a treadmill or stationary bike. In some cases, resistance training is recommended. Patients are closely monitored by measuring blood pressure, assessing heart rate and changes to their heart rhythm. The goal is to steadily improve cardiovascular performance.

“We see significant improvement in the patient as early as a month into the program,” Van Damme observes.

The Pre-habilitation Program at the Maz goes beyond exercise. On top of the dedicated work of the Maz’s exercise specialists, the entire multi-disciplinary team works together to contribute to the



patient's success. Patients are supported in many ways, including: education on medication management, diet, lifestyle changes and stress management.

HELPING PATIENTS INITIATE CHANGE.

Starting an exercise routine can be intimidating for anyone. Just look at how many people get gym memberships over the New Year but quit within a month. Those with heart conditions have the added worry that they might overdo it and make things worse. Andrea Van Damme says helping patients overcome this fear is a major benefit of the Pre-hab program.

"Those who are anxious can feel safe. They are comforted by the fact that a professional is there to supervise their workout in a controlled environment. Seeing others in similar situations builds confidence, provides motivation and gives patients a sense that they can do it too."

SETTING GOALS: FOR PATIENTS AND THE PROGRAM.

According to Van Damme, the Maz's Pre-habilitation Program has two key objectives.

The first is to get patients in optimal physical condition for surgery. This results in fewer complications – allowing patients to return to their pre-surgery state sooner.

Second is to help patients introduce fitness and lifestyle changes that will carry through post-surgery and beyond. By getting patients in a routine prior to surgery, the Maz has found at least 90% of pre-hab patients are signing up for rehabilitation following cardiac surgery.

"This is good news, because we know that in addition to medication compliance, a combination of eating right, proper exercise and decreasing stress lowers the risk of a repeat event," Van Damme says.

In less than four years, the Mazankowski Alberta Heart Institute's Pre-habilitation Program has assisted over 100 patients.

Currently, it is helping those scheduled for coronary artery bypass graft and mitral valve surgeries. In the future, they hope to extend the program to other cardiac surgical populations that may not have previously been considered.

– Circulate

NP Forum for Nursing & Allied Health

April 12, 2019
8:00am-4:00pm
Bernard Snell Hall,
University
of Alberta Hospital

For more information go to:
npforum.ca

NOT MISSING A BEAT

Cal only learned he had heart issues following an annual checkup. He'd experienced no signs or symptoms, so it caught he and his family completely off guard.

When Cal was told he'd need open heart surgery, it was suggested that he participate in the Cardiac Pre-habilitation Program at the Mazankowski Alberta Heart Institute. The goal was to get him exercising and give him additional knowledge to prepare for surgery, as well as obtain

"I spent the whole day yesterday pulling boats and docks at the family cabin like I was 20-years old," Calvin (Cal) Phare says with a laugh. You would never guess that he underwent quadruple bypass surgery just nine months earlier.

baseline information to guide his recovery. He didn't hesitate a second.

During his visit, the Cardiac Rehabilitation team gave Cal a series of cardiovascular and strength exercises to follow ahead of surgery. They set out a plan and a strategy to guide him from pre-surgery, to post-op and beyond.

"I can't speak highly enough about the entire team at the Maz. The support I got was incredible. They're like the Stanley Cup champions in the medical field – a well-oiled machine," Cal says, adding his family cheered him on every step of the way.

Cal Phare attributes pre-habilitation to his quick recovery. A week after surgery, he was going up the stairs 12 times a day. Today, he takes daily 50-minute walks and golfs whenever he can.

Thanks to the "All Stars" at the Maz, and the focus on keeping fit, Cal continues to live an active life and do the things he loves. He feels fortunate for the early diagnosis and care he received – and considers Albertans to be really lucky to have such a world-class facility in our province.



Give a Gift with Heart

Open Monday to Friday from 8:30 AM to 3:30 PM,
the Heart to Heart Boutique offers a wonderful selection
of unique merchandise and greetings to welcome patients,
visitors and staff of the Maz.

**Visit us soon and visit us often
because you never know what you'll find in store!**



is a charitable organization dedicated to providing a caring, comforting hospital experience for patients, families, volunteers and staff supported by gift shop sales, social enterprise, innovative programs, community engagement and the arts. Our vision is to ensure that the hospital experience is one of exemplary **healing, caring and compassion!**

WISE BEYOND THEIR YEARS



CONGENITAL HEART FORUM

Registered nurse helps young heart patients transition to adult care.

Thanks to advances in pediatric cardiology, patients with congenital heart disease are advancing into adulthood in unprecedented numbers. To prepare them, Pam Heggie, RN, organizes an education day in Edmonton for patients and families to learn about living with their disease.

In April 2017, 50 patients and their families connected with adult care providers to learn more about congenital heart disease.

Pam has taken on this role on top of her regular duties as an RN. She is driven by a passion for helping these patients.

"Our patients are an amazingly resilient group, but living with chronic illness is tough," says Pam, a Clinic Nurse Coordinator for the Northern Alberta Adult Congenital Heart Program.

Young patients with congenital heart disease form strong bonds with their pediatric health-care team after years of treatment and open-heart surgeries. Pam's education day helps patients transition from this environment to the adult world.

"I strongly believe that educating patients and letting them know that they are not alone in trying to manage the challenges of living with their condition helps them to cope," she adds.

Pam invited surgeons and cardiologists to speak at the event to help young people learn to manage their condition throughout adulthood. The event covered a range of topics, including fitness, pregnancy, new surgical interventions, managing stress, what cardiac tests tell the medical team, and coping with depression and anxiety.

Pam spoke at the event as well, encouraging patients to be active participants in their own health. Her session, *Becoming Your Own CEO*, likened the job of a CEO to the role patients have in their own care.

According to Pam, patients must be leaders in seeking knowledge about their condition and develop a plan and strategy to manage their care. This includes decision making around medications and lifestyle choices, when to seek assistance from a family doctor

or cardiologist, and how to get help with mental health issues such as anxiety or depression.

Knowing that patients need peer support, she also recruited guest speakers from Edmonton's Pediatric Peer Support Group and Canadian Congenital Heart Alliance (an adult support network) to facilitate this.

The next education event will take place on May 4, 2019.

"As a nurse who has worked with patients who have congenital heart disease for over 15 years, I feel I have a unique role as patient educator and advocate," says Pam.

– Russell Working, CARNA

MAZ SPIN-A-THON

12 BIKES | 12 HOURS | 1 GREAT CAUSE



Held Each February

Mazankowski Alberta Heart Institute

The Impact of Community Support

The Maz has and continues to benefit from the University Hospital Foundation and the dedicated donors that support Cardiac Care. It is with this support that we continue to bring in the latest advancements in innovation and we are able to recruit some of the best and brightest. All of this has a direct impact on the care that we provide.

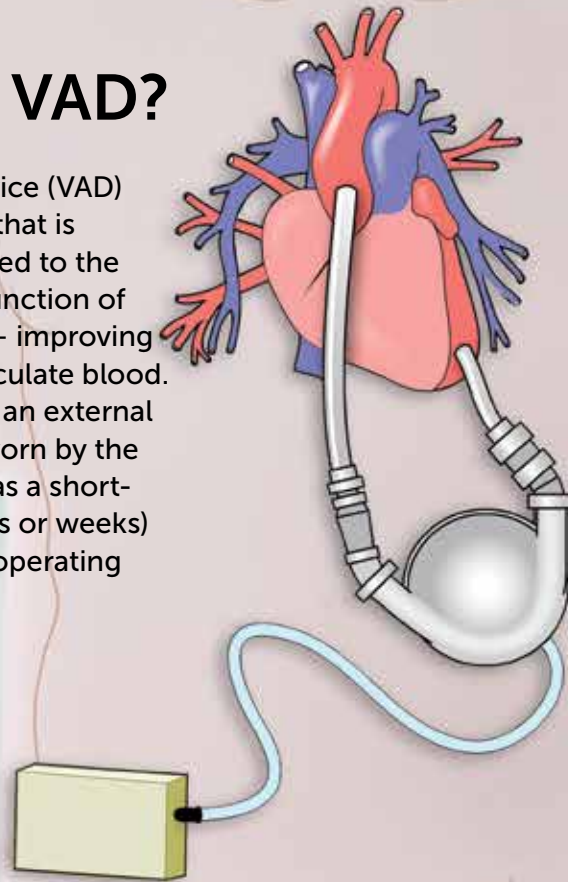


FROM LIFE SAVING TO LIFE CHANGING

- Canada's youngest Canadian long-term VAD implant patient.
- Canada's first Berlin Heart patient to live at home.
- Canada's only combined adult and pediatric VAD program.
- Leading the way in supporting and educating VAD programs across North America.

WHAT IS A VAD?

A Ventricular Assist Device (VAD) is a mechanical device that is implanted and connected to the heart. It supports the function of one or both ventricles – improving the heart's ability to circulate blood. The VAD is powered by an external battery pack which is worn by the patient. It can be used as a short-term treatment (for days or weeks) or long-term solution (operating for months or years).





THE EVOLUTION OF THE VENTRICULAR ASSIST DEVICE PROGRAM AT THE MAZ

When Dr. Holger Buchholz accepted an invitation to leave his native Germany to help establish a Ventricular Assist Device (VAD) Program at the Mazankowski Alberta Heart Institute (the Maz) in 2006, the desired patient outcome was pretty simple.

"In these early days, it was to bridge the gap for patients we thought might not survive to transplant," Dr. Buchholz recalls.

Over the past 12 years, the technology behind Ventricular Assist Devices has come a long way. VADs have evolved from being a rescue device to a device that can be utilized long term for specific patients.

Through a combination of new technology and a unique integrated multidisciplinary program, the Maz has seen many patient firsts: including the youngest Canadian patient to receive a long-term VAD implant and the first Berlin Heart patient in Canada to live at home. It is also the only Canadian mechanical circulatory support program with a combined adult and pediatric focus.

In a field where there is no blueprint the Maz VAD program is leading the way.

FROM HOSPITAL TO HOME.

Back in the program's early days, a ventricular assist device was technologically unsophisticated and cumbersome. Patients were bound to their hospital beds... hoping and waiting for a heart transplant.

As components became more durable, more compact and more advanced, the door began to open for patients

to return to the community. However, the team at the Maz realized that a successful transition required more than just new technology.

According to Osiris Zelaya, Mechanical Circulatory Support Program Manager, the Maz believed it was vital to assemble a multi-disciplinary team to prepare long-term VAD patients to make the transition to home. This team, comprised of doctors, nurses, therapy assistants, pharmacists, dieticians, physiotherapists, and social workers, all work together to give patients the comprehensive support systems they need.

"This approach has helped us support patients to live normal, healthy lives and to feel great," Zelaya reveals.

The Maz has supported over 50 long-term VAD patients successfully transition home. All continue to receive ongoing follow-up and support as required.

"Thanks to the work of this multidisciplinary team, patients are set up to succeed. They can do things that were not possible when we started the program: such as work, raise families, travel and enjoy hobbies. We've had patient who have returned to golfing... and those who are back working on the farm," Zelaya says.

SHARING THEIR KNOWLEDGE.

The Mazankowski Alberta Heart Institute's VAD Program is involved in research to improve outcomes, and is committed to sharing their knowledge and practices with others.

"We have team members guiding training programs at heart centres across Canada in Winnipeg, Halifax, and St. John's and even in Costa Rica and Brazil. As well, many health professionals come to the Maz to spend time with us – to train, learn and observe," Dr. Buchholz says.

Thanks to the ongoing efforts of the Maz's multidisciplinary Ventricular Assist Device team, "normal" is now the new normal for long-term VAD patients.

UNDER THE MICRO SCOPE



A LOOK AT THE CARDIAC SCIENCES RESEARCH CABINET & CARDIAC RESEARCH IN THE EDMONTON ZONE

In the summer of 2017, the Cardiac Sciences Research Cabinet was formed with a goal of creating a framework to support enhanced integration and collaboration for cardiac sciences research in the Edmonton Zone.

The Cardiac Sciences Research Cabinet brought together senior leadership from the University of Alberta's Faculty of Medicine and Dentistry and Alberta Health Services. We spoke with Mishaela Houle, Executive Director, Cardiac Sciences, Edmonton Zone to learn more about this Cabinet and the work they are doing as well as cardiac research in the Edmonton Zone.



Circulate: Why was the Cardiac Sciences Research Cabinet established?

Mishaela Houle: *The Cardiac Sciences portfolio is a very active group when it comes to research. It is a major strength. By unifying efforts among various cardiac sciences research groups and programs, it was felt we could yield an even greater impact and continue to build on this already impressive reputation.*

Circulate: How many researchers currently support cardiac research?

MH: *There are currently 123 core Cardiac Sciences Faculty Researchers, representing a diverse range of faculties and departments. (See story right).*

Circulate: What are some of the funding sources for research?

MH: *The Canadian Institute of Health Research (CIHR) is a major federal granting agency. Since 2009, 23% of all CIHR funding to the University of Alberta was awarded to Cardiac Sciences faculty. This equates to nearly \$87 million dollars.*
The Cardiac Sciences faculty was awarded 10% of all U of A CFI funding dollars in the last five years.

Circulate: How are research findings shared?

MH: *Research findings are shared through various types of publications. Cardiac Sciences faculty have a substantial publication record. Since 1970 they've had nearly 9,500 publications and 360,700 citations. Publications include articles, reviews, books and book chapters, conference papers, letters, editorials, and surveys.*
Nearly half (43.4%) of the publications by the Cardiac Science faculty have been published in the top 10% of the journals worldwide. Recent publications are cited 109% more times than the world average and 26% are in the top 10% most cited articles world wide.

Circulate: Where can readers find out more about the Cardiac Sciences Research Cabinet?

MH: *Information can be found either on the University of Alberta Faculty of Medicine and Dentistry website or the Alberta Health Services website. This includes progress updates, meeting minutes and notices of events such as Town Halls.*
<https://www.ualberta.ca/medicine/research/cardiac-sciences-research-cabinet>

AN IMPRESSIVE RESEARCH TEAM

Currently, there are 123 core Cardiac Sciences Faculty Researchers within Edmonton. They represent a diverse range of departments and programs.

- Medicine • Pediatrics • Surgery • Anesthesiology & Pain Medicine • Biochemistry • Biomedical Engineering • Critical Care Medicine • Emergency Medicine • Laboratory Medicine & Pathology • Medical Genetics • Medical Microbiology & Immunology • Obstetrics & Gynecology • Pharmacology • Physiology • Radiology & Diagnostic Imaging • Basic Science

Also involved are the Faculties of Agricultural, Life and Environmental Sciences, Nursing, Pharmacy & Pharmaceutical Sciences and Rehabilitation Medicine.



RESEARCH IN ACTION

MADE-IN-ALBERTA DEVICES
PROMISE TO IMPROVE
QUANTITY AND QUALITY
OF DONATED ORGANS.



Tevosol earned a TEC Edmonton 2017 Venture Prize as one of the province's most promising early-stage technology ventures. Left: Darren Freed, Right: Jayan Nagendran.

Photo Credit:
Faculty of Medicine and Dentistry



“...THIS NEW ALBERTA-MADE DEVICE BUYS MORE TIME FOR AN ORGAN TO BE ASSESSED, REPAIRED AND TRANSPORTED...”

Technology developed and being commercialized by University of Alberta medical researchers may solve two of the biggest problems in organ transplantation—the limited number of healthy organs available and the short window of time to get a donated organ to a patient.

Technology developed and being commercialized by University of Alberta medical researchers may solve two of the biggest problems in organ transplantation—the limited number of healthy organs available and the short window of time to get a donated organ to a patient.

The Ex-Vivo Organ Support System (EVOSS™) was developed by surgery professors Darren Freed and Jayan Nagendran. It uses negative pressure ventilation in a portable organ perfusion device to replicate the way our chest cavity expands and contracts with each breath. It ensures a constant supply of blood and oxygen to the donated lungs, keeping them warm at a level similar to the temperature inside the body, until they are transplanted.

A PROMISING FUTURE, ONE ORGAN AT A TIME.

Currently, after removal from the donor, a donated organ is stored and transported on ice with only a six-hour window before it's no longer viable. But this new Alberta-made device buys more time for an organ to be assessed, repaired and transported, giving it the potential to double or even triple the number of available donor organs worldwide.

EDMONTON'S GEOGRAPHY STIMULATES INVENTION.

Freed and Nagendran—who together founded Tevosol, Inc., a U of A spinoff company to commercialize their product—expect to start a clinical trial of their lung perfusion device soon.

“Not only is it an opportunity to improve the quality of donor organs around the world, but it's an Alberta-specific problem that we are addressing as we are frequently facing difficulties because an organ has been out of the body for a long time, in spite of trying to get it here as soon as possible,” said Nagendran.

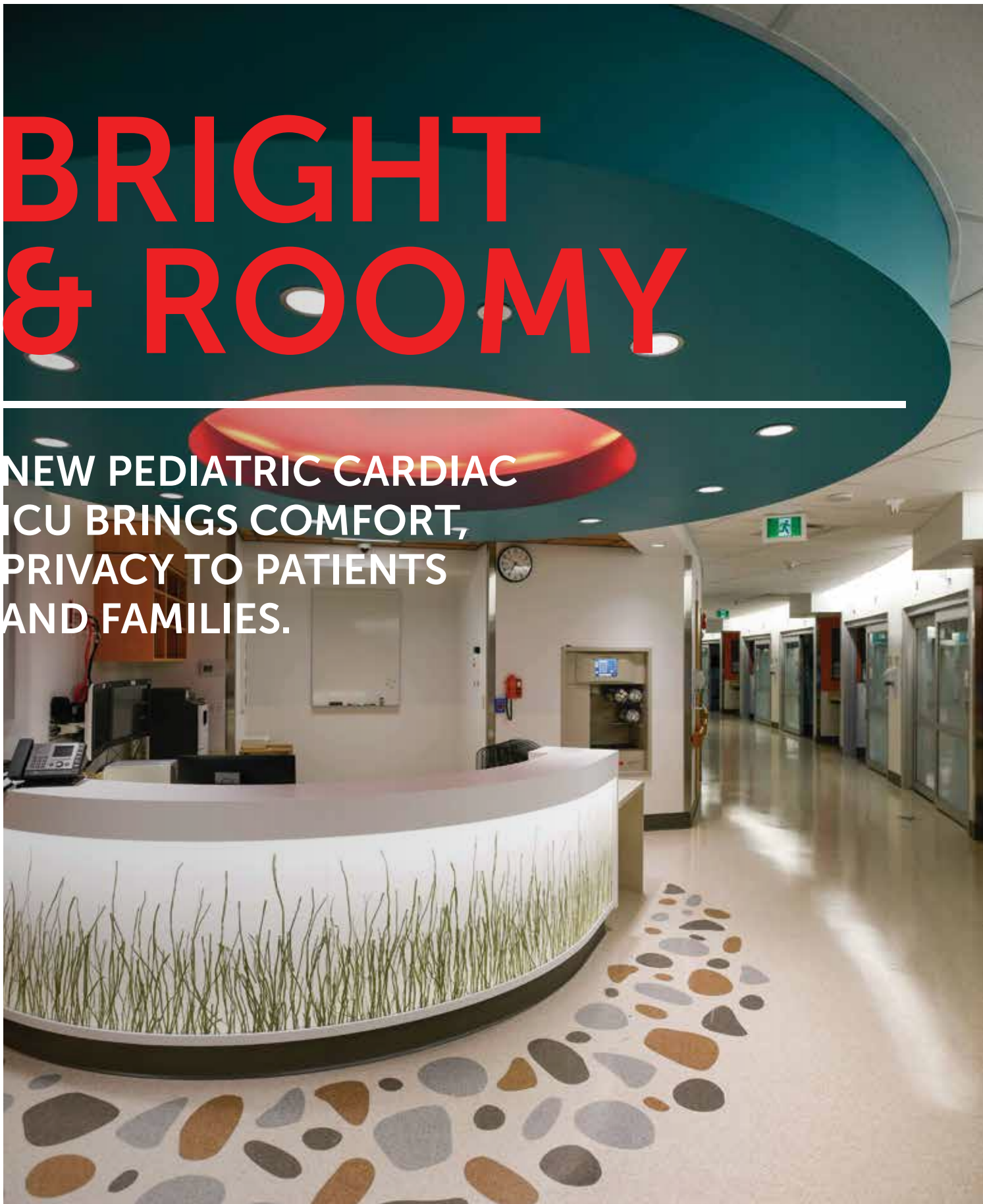
The Mazankowski Alberta Heart Institute has the largest geographic service area in the world for a single transplant centre, covering more than six million square kilometres.

– Shelby Soke and Michael Brown
Faculty of Medicine & Dentistry,
University of Alberta

“It's one of the reasons why innovation is at the heart of what we do in Edmonton,” said Nagendran.

BRIGHT & ROOMY

NEW PEDIATRIC CARDIAC
ICU BRINGS COMFORT,
PRIVACY TO PATIENTS
AND FAMILIES.





Melissa Eastcott couldn't wait to share in the excitement when moving day finally arrived for patients and families in the Stollery Children's Hospital's Pediatric Cardiac Intensive Care Unit (PCICU).

On December 12th, 2017 the unit was relocated to its new home on the sixth floor of the Mazankowski Alberta Heart Institute.

Her son, Callen Spooner, has already required several stays in the PCICU as part of his healthcare journey. The three-and-a-half-year-old lives with hypoplastic left heart syndrome, a rare congenital heart defect in which the aorta and left ventricle of the heart are severely underdeveloped and cannot pump blood properly.

"The old space was very dark," says Eastcott. "We're very excited for windows, the private rooms and the pull-out beds. It will make being closer to my son easier and our stay here much more comfortable."

Families participated in every step of the planning and design of the new unit — an intensive care space that will improve the healthcare journey for more than 500 patients a year.

As one of four parents who have contributed to the "family voice" on the Stollery PCICU redevelopment committee, Kevin George has provided insight on the designs.

"My role is to advocate for families and help design a space that is as inclusive as possible," says George. "The lack of privacy on the open-floor critical care units has been one of the most common complaints from families. The new single-patient rooms will help create privacy, but the unit's design featuring family areas will still allow parents and caregivers to connect in spaces specific to PCICU families."

The new PCICU has 16 beds, each located in single-patient rooms that offer more privacy and sufficient space for family members to comfortably sleep overnight.

"By moving to single-patient rooms, we can enhance infection-control measures, improve sleep patterns for patients and create privacy for families," says Dr. Dominic Cave, Medical Director of the Stollery PCICU. "Children's healing is a team activity, and having families present and comfortable at the bedside is vital to the best possible outcomes for our patients."

– Sharman Hnatiuk



THE CIRCULATION OF IDEAS



QUALITY COUNCIL INITIATIVES GUIDE ONGOING IMPROVEMENT.

In medicine, we continually hear about how quickly technology is evolving, and how it is extending lives in ways never thought possible.



Yet often overlooked are the important small changes and improvements involving patient care that take place every day. Processes and protocols may not seem as glamorous as shiny new machines and ground-breaking procedures, but the impact that these initiatives can have on patient care is significant.

Quality Councils were established at the Mazankowski Alberta Heart Institute specifically to address these issues. Quality Councils are comprised of multidisciplinary team members; including frontline. These teams meet regularly and rely on the expertise of each individual to bring forward ideas and suggestions to improve patient care.

“As a leadership team, we know that these individuals have the best understanding of the day to day problems on the unit and what strategies could be implemented to address these problems. The goal of the unit council was to empower these individuals to make change,” says Dr. Robert Welsh, Zone Clinical Department Head, Cardiac Sciences, EZ.

“At the Cardiology Unit Quality Council, we look at all things big and small. We work to identify any issues or concerns that impede our ability to deliver the best care possible,” says Lisa Marco, Unit Manager, Cardiology.

Recently, the quality council focused on two larger initiatives, development of a standardized communication algorithm to notify physicians when a patient needs rapid support from the health care team; and development of a standardized checklist for the health care team to use when discharging patients who are waiting for open heart surgery.

ENSURING A QUICK RESPONSE WHEN PATIENTS NEED IT MOST.

When a patient requires urgent care by a physician on the Cardiology Wards, response time is absolutely crucial. The Cardiology Unit Quality Council at the Mazankowski Alberta Heart Institute identified a gap in response times involving patients who required a rapid response from the healthcare team on the cardiology unit during evenings and weekends.

There were concerns and uncertainty about which member of the on-call response team nurses should be contact in these types of situations.

An Acute Response Algorithm (ARA) was created to improve communication, standardize nursing response and provide a structured approach to manage these patients. The aim was to improve timely access to physician assessment and enhance quality patient care.

"We developed a comprehensive list of concerns that constitute urgent care. Then we established which on-call staff should be contacted, and in what order," explains Marco.

"First, the charge nurse is notified. The algorithm identifies for the charge nurse which provider should be contacted to discuss the patient with."

Over the course of a pilot study to test the new ARA, 73 on-call concerns were recorded. The ARA was activated in 13% of these calls. In these cases, 90% were handled correctly according to the new guidelines.

"With any new system, there is a learning curve. Our goal is to have staff adhere to the ARA process in the appropriate manner 100% of the time," Marco says.

AWAITING HEART SURGERY UNDER YOUR OWN ROOF.

At the first sign of a heart attack, patients are rushed to hospital for urgent care. Those who require open heart surgery but have stabilized and been categorized as semi-urgent may be discharged home to await open heart surgery. A big challenge is how to make sure these patients are properly prepared for surgery on their return.

Through the work of the Cardiology Unit Quality Council at the Mazankowski Alberta Heart Institute (Maz) it was identified there was a need for a semi-urgent pre-operative patient package. Staff participated in an innovative quality improvement project to create a patient resource package and tools for staff to ensure patients were surgery ready.

Feedback from patients indicated that the semi-urgent pre-operative patient package has been effective in explaining integral parts of their open heart surgery and alleviated their anxiety while preparing them for surgery. Staff were satisfied that patients were consistently better prepared, preventing operating room delays or postponements. The program is now being introduced to all Edmonton Zone sites that will be sending semi-urgent patients to the Maz for surgery.

QUALITY IMPROVEMENT IS ONGOING.

The Quality Councils at the Maz are driven to continually improve results in patient care.

"There is always room for improvement somewhere," says Cardiology Unity Manager, Kim Simpson. "It's a collaborative process where all perspectives, insights and suggestions are welcome and encouraged."

This commitment to always wanting to do better is often credited as a key reason the Mazankowski Alberta Heart Institute has received a 93% satisfaction rate in its patient surveys.

"By setting high standards, and outlining a path for achieving them, we are able to meet the high expectations of our patients and their families," Simpson says.



– Heartbeat Run – Sunday, September 22, 2019

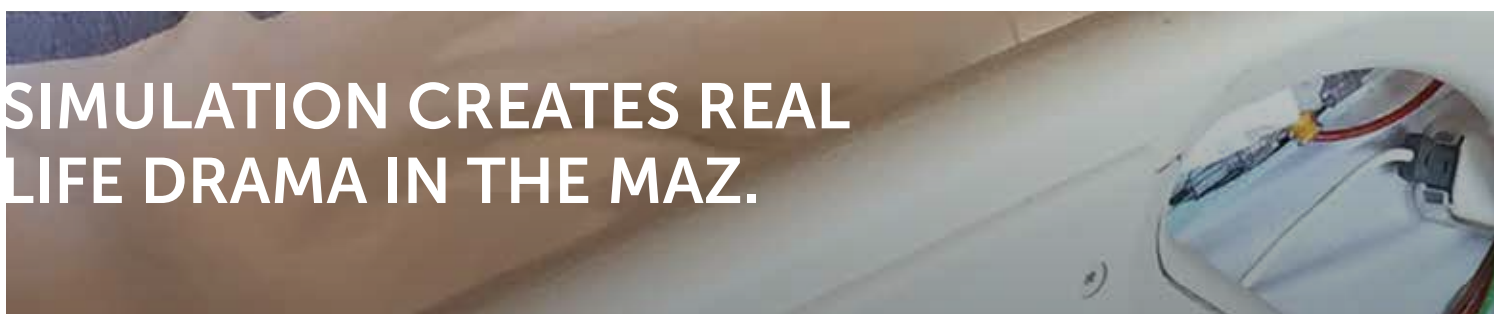
The Maz, in partnership with the University Hospital Foundation, holds the Heartbeat run each year.

The 2019 event will be held in September. To Register, please go to heartbeatrun.ca/events/edmonton



BE PREPARED

SIMULATION CREATES REAL
LIFE DRAMA IN THE MAZ.





HOW DO YOU PREPARE HEALTHCARE PROVIDERS TO DEAL WITH THE HIGH-PRESSURE SITUATIONS THEY CAN FACE WHILE WORKING AT THE MAZANKOWSKI ALBERTA HEART INSTITUTE (MAZ)?

The Maz has introduced simulation as a tool to educate staff and physicians by re-enacting real life scenarios that they may encounter.

The benefit to simulation is that staff are able to experience these situations in a safe, controlled environment.

Most recently, the Maz utilized simulation to further equip staff with the knowledge and skills to respond to cardiac arrests. If you've watched a medical drama on TV, you've probably heard the term *Code Blue*. It refers to a situation where a patient's heart stops beating and they go into cardiac arrest.

In Code Blue simulations, nurses, along with the multidisciplinary team, assume their roles and perform duties as outlined by the Code Blue protocol. The team walks through the scenario in an environment that allows them to ask questions and bring forward concerns, the goal is to improve their confidence when they respond to a true emergency. Invariably, staff are thrown curve balls during the simulation exercise, just as could occur in real life, where they must respond to unexpected scenarios and situations.

These multidisciplinary simulations are typically four-hours long but can be adapted to meet the teams needs.

According to Sapna van Gaalen, a Clinical Nurse Educator for Cardiology, these simulations provide a safe environment where staff can practice skills they may not use on a day to day basis. She stresses that simulations are used for strictly teaching, not evaluation.

"The goal is to put staff in a position that encourages them to think and act as they would in real life, allowing them to identify their own learning needs," Van Gaalen says.

In addition to hands-on training, simulation helps the team build confidence, enhance skills, improve communication and gain trust within the multidisciplinary team.

THE AMAZING HEART

Clench a fist.

That's roughly the size of your heart.

115,000

Approximate times per day a healthy adult heart will beat.

2,000 gallons

That's the amount of blood your heart will pump daily!



Men are **2x** more likely to suffer a heart attack than women.*

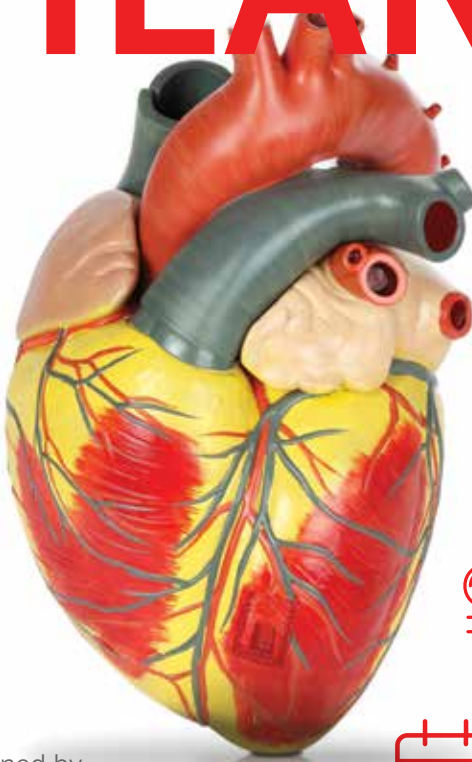


Heart size is determined by body size, which explains why male hearts are two ounces heavier than female hearts on average.

If your blood vessel system was stretched out, it would be more than **96,560 km** long.

1967

The year a first human heart transplant was done in Cape Town, South Africa by surgeon Christiaan Barnard, using a technique developed in America. Unfortunately, the patient died of pneumonia 18 days after the procedure.



1/12

(or 2.4 million) Canadian adults age 20 and over live with diagnosed heart disease.*



A woman's heart typically beats faster than a man's.

Your heart beats thanks to an electrical system in the human body.



An aorta can be the diameter of a garden hose, yet some capillaries are 10x finer than a human hair.



Statistics have shown that more heart attacks happen on Monday than any other day. This may be due to stress, which can increase levels (known as "the stress hormone").



The Jarvik 7 was the first permanent artificial heart. It was successfully transplanted into patient, Barney Clark in 1982 by Dr. Robert Jarvik in Utah.

* Source: Government of Canada: <https://www.canada.ca/en/public-health/services/publications/diseases-conditions/heart-disease-canada.html>



Hearts Memorial

An annual event held for family and friends of those who have passed away from heart disease.

Next event is May 5, 2019

Guru Nanak Dev Healing Garden,
located on the 4th floor of the
Mazankowski Alberta Heart Institute

2:30 pm – 4:30 pm

Tree of Remembrance



Allard Foundation PATIENT EDUCATION CENTRE

The Allard Foundation Patient Education Centre at the Maz offers easy access to heart health education information.

Cardiac patients and their families are encouraged to access resources on current heart related education focused on heart disease, conditions, treatment information, nutrition and community resources.

The Allard Foundation Patient Resource Centre also offers a comfortable sitting area, computers with free internet access and printer capabilities, and telephones.

Volunteers are available in the Allard Foundation Patient Resource Centre to assist in information and way finding.

Hours of Operation

Open weekdays

Monday to Friday, 0830 to 1700.

Closed on Weekends and
Holidays.

MAZWORD

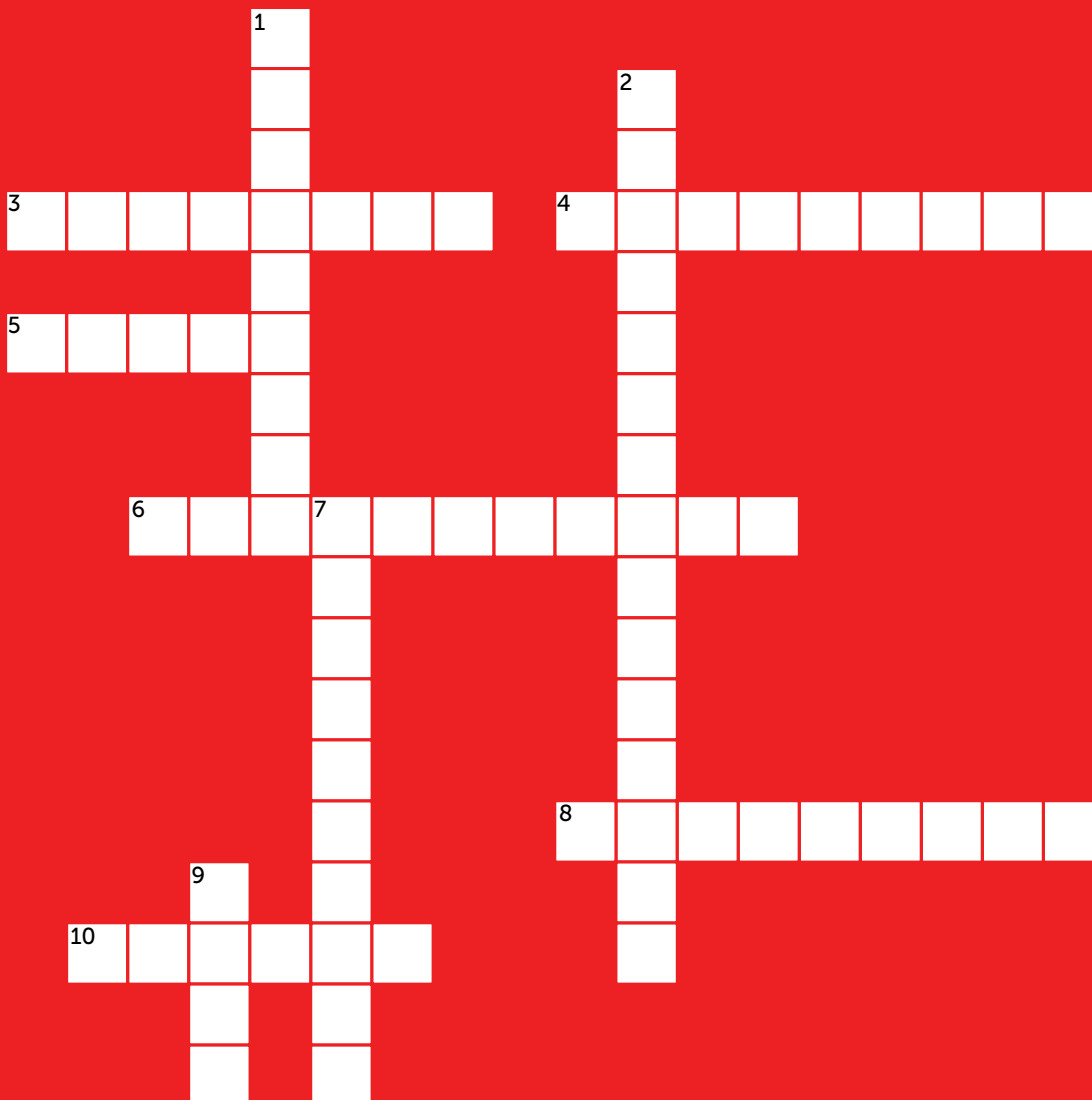
Do you have your finger on the pulse of the Maz?
Complete the crossword below to find out.

ACROSS

3. Home of the Maz
4. The Maz provides care to adult and _____ patients
5. The organ responsible for circulating blood is?
6. _____ Assist Device (VAD)
8. Title of the 2017-2018 Mazankowski Alberta Heart Institute Annual Report
10. Mazankowski Alberta Heart Institute short form

DOWN

1. Pedalling fundraiser for the Maz
2. Pre-surgery health and fitness program
7. Replacing a failing organ with a donor organ
9. Hearts do it. Drummers keep



Answers:
1. spinathon
2. prehabilitation
3. edmonton
4. pediatric
5. heart
6. ventricular
7. transplant
8. circulate
9. beat
10. themaz

