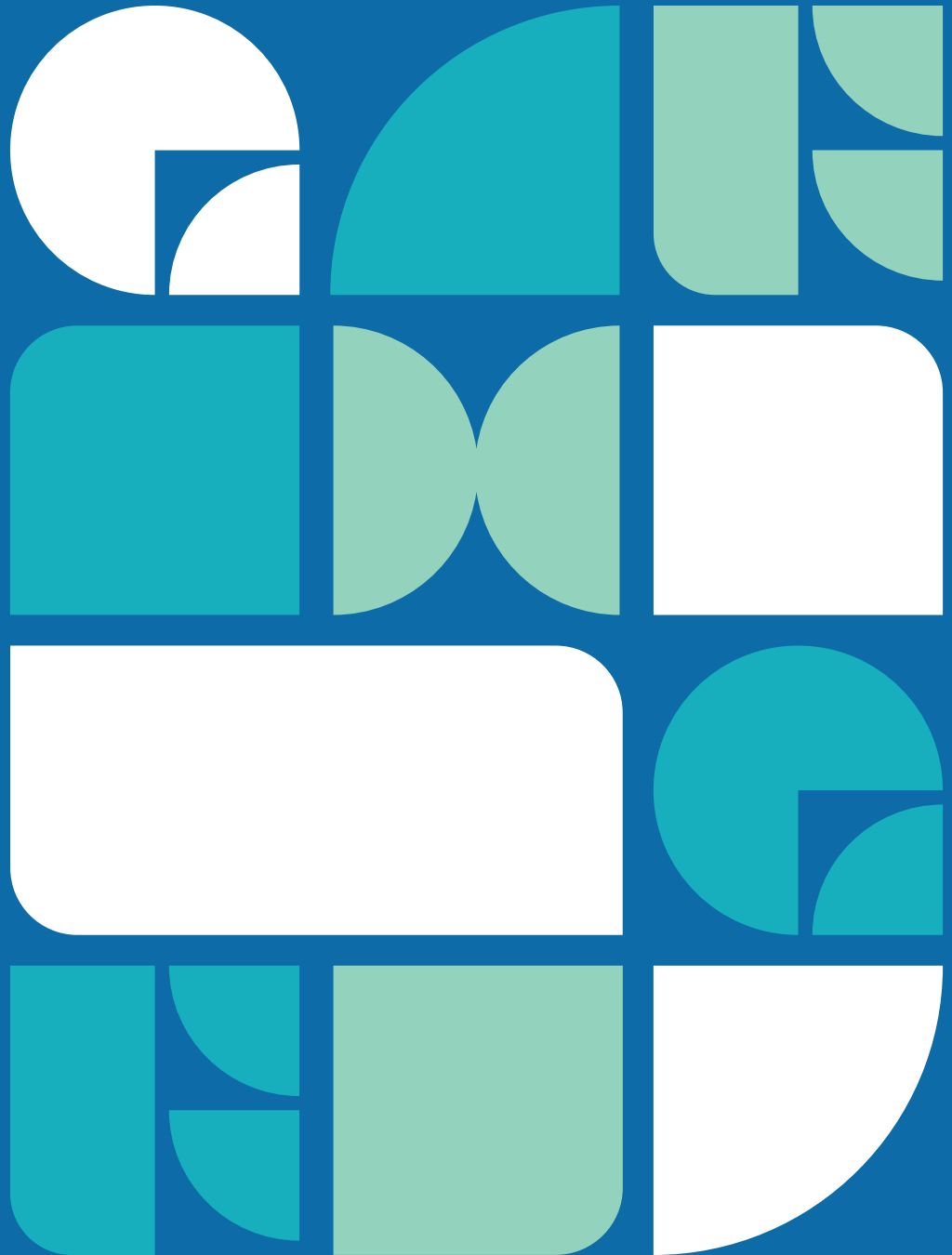




Glenrose  
Hospital  
Foundation

# 2022/2023 Annual Report



# Messages



It is with enormous gratitude that we share this year's annual report. As we reflect on the past year's achievements, we are humbled by the immense impact our donors' contributions have made in the field of rehabilitation healthcare. We have an amazing donor community, and with their unwavering support, we have continued to transform lives and empower individuals on their journey to recovery and independence.

At the Glenrose Hospital Foundation, our focus is mobilizing resources to accelerate advances in human ability. We strongly believe that every individual, regardless of their circumstances, deserves an opportunity to reclaim their life and regain their physical and mental well-being. This belief has been the driving force behind our relentless pursuit of advancements in rehabilitation and our commitment to leveraging technology and research to enhance the quality of care we provide.

Advancements in rehabilitation medicine have ushered in a new era of possibilities, enabling us to reimagine the potential of every patient who walks through our doors. With innovative technologies, we have seen remarkable breakthroughs in restoring mobility, independence, and quality of life for our patients. These advancements would not have been possible without the support and generosity of our donors, whose contributions have fueled our research initiatives and enabled us to acquire ultramodern equipment and resources.

Technology has emerged as a game-changer in the field of rehabilitation—revolutionizing the way we approach patient care. Our hospital has embraced the power of technology, integrating it into every aspect of our programs. From advanced virtual reality systems to brain-powered assistive devices and telehealth, we are harnessing the potential of these innovations to accelerate recovery, improve outcomes, and extend our reach beyond the confines of our physical facility.

In addition to technological advancements, we have renewed our commitment to research that is instrumental in driving breakthroughs in rehabilitation medicine. Through collaborations with leading research institutions and healthcare partners, we are working towards an environment of innovation and discovery. The knowledge gained through these research efforts will enhance our understanding of the human body's remarkable capabilities and paved the way for groundbreaking interventions that were once unimaginable.

Our deepest gratitude to every one of you who has supported the Glenrose Hospital Foundation. Your belief in our mission and your contributions have propelled us forward on our journey to reimagine human ability. Together, we are making a tangible difference, instilling hope now and for the future.

A handwritten signature in black ink that reads "Wendy King".

**Wendy King**  
BOARD CHAIR  
GLENROSE HOSPITAL FOUNDATION

A handwritten signature in black ink that reads "Mark Korthuis".

**Mark Korthuis**  
PRESIDENT & CEO  
GLENROSE HOSPITAL FOUNDATION



## Welcome Dr. Chester Ho

In October 2022, Dr. Chester Ho was announced as the new Facility Medical Director for the Glenrose Rehabilitation Hospital.

Dr. Ho completed medical school at the University of Cambridge. He then moved to Harvard University where he undertook residency training in Physical Medicine & Rehabilitation, followed by a fellowship in Spinal Cord Injury Medicine at Kessler Institute for Rehabilitation.

Dr. Ho has recently served as the Interim Zone Clinical Department Head – Neuroscience in Edmonton Zone and is currently the Senior Medical Director for the Neurosciences, Rehabilitation & Vision Strategic Clinical Network. In addition, Dr. Ho is also a Professor and Spinal Cord Injury Research Chair at the University of Alberta. Throughout his 20+ year career, he has successfully combined many clinical, research and administrative skills with a goal to improve patient safety and quality of care.

On behalf of the Glenrose Rehabilitation Hospital's clinicians, staff, and leadership team, we are delighted to share the remarkable progress and accomplishments from the past year in this report.

At the Glenrose Hospital, our comprehensive approach is built on a foundation of compassion, expertise, and innovation. The past year has seen significant advancements, enabling us to provide cutting-edge treatments tailored to each patient's unique needs. Our dedication to staying at the forefront of medical research and technological advancements has translated into improved patient outcomes. The Imagination Centre, a project featured in this report, is a demonstration of that commitment.

As we celebrate the successes of the past year, we also acknowledge the resilience and determination of our patients, who inspire us daily with their stories of triumph over adversity. Their unwavering strength and perseverance fuel our commitment to providing the best possible care for every individual we serve. With more than 100,000 patient visits last year, the need for exceptional rehabilitation healthcare in Alberta is on the rise.

While forging ahead, we remain committed to pushing the boundaries of rehabilitation medicine. Our hospital is not merely a place of healing; it is a hub of understanding, collaboration, and excellence. We are continually grateful to the dedicated team of healthcare professionals, whose expertise, passion, and dedication have been the driving force behind our successes. Their tireless efforts, coupled with the transformative impact of technology and research, continue to redefine what is possible in the field of rehabilitation.

**Lynette Lutes**  
SENIOR OPERATING OFFICER  
GLENROSE REHABILITATION HOSPITAL

**Dr. Chester Ho**  
FACILITY MEDICAL DIRECTOR  
GLENROSE REHABILITATION HOSPITAL

## 2022/2023 Board of Trustees

Wendy King, Chair

Maria Holowinsky

Katherine Husing

Maureen Lomas

Rajesh Ramakrishnan

Justin Riemer

Adam Sweet

Karen Wichuk

Lynette Lutes, GRH Representative

The Glenrose Rehabilitation Hospital is the largest freestanding, comprehensive tertiary rehabilitation centre in Canada. It is Alberta's only hospital dedicated to rehabilitation.

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The Glenrose Rehabilitation Hospital Foundation enables breakthroughs in human ability through innovation, research and technology.



# Community Support

## Courage Ride

The Courage Ride for Rehab took place mere blocks away from the Glenrose Hospital and featured a fun loop around the city's core on a beautiful July day. More than 100 participants joined the 2022 event and supporters crushed the fundraising goal, raising over \$55,000 for the Glenrose.



**The Courage Ride is made possible through the generous support of local volunteers and sponsors who dedicate their time and resources towards the organization and success of the event.**



## Shining a Light

In June 2022, a new event – Shining a Light, presented by UNITE HERE! Local 47 – provided the opportunity for Glenrose supporters to explore rehabilitation through locally created art and light installations. Attendees immersed themselves in the experience, learning about some of the innovative equipment and technology being used at the Glenrose Rehabilitation Hospital. The unique event took place on the 13th floor of Epcor Tower and welcomed donors, patients and community ambassadors.

**Over \$125,000 was raised to help fund critical technology and research to support Glenrose Hospital patients and their families.**



## Mandy

**Mandy had a stroke at 36 – something she never thought would happen to her.**

The days following Mandy's stroke were incredibly challenging. She was incoherent, unable to sit up, and she needed a feeding tube and catheter. After spending 18 days in an acute care hospital, Mandy's condition improved enough for her to be transferred to the Glenrose Hospital for rehabilitation.

At the Glenrose, Mandy met fellow stroke patients who shared similar journeys, forging deep connections along the way. She participated in physiotherapy, occupational therapy and art therapy. One of her favourite activities was the trampoline, where she worked on getting her step reflex back. Mandy remained an inpatient at the Glenrose for a month, dedicating her time to relearning essential skills like walking and eating solid foods.

Her ongoing journey serves as an inspiration to others, illustrating the resilience and determination required to overcome life's unexpected challenges.



# Celebrating Courage

On November 8, the annual Courage Awards took place, virtually, showcasing the courage and tenacity of three incredible Glenrose patients. Each year, staff nominate patients who demonstrate courage and serve as role models to others during their rehabilitation.

## Jan

Jan was seriously injured after the horse she was riding was spooked by bison and she had to make an emergency dismount. Jan sustained a spinal cord injury and doctors told her she would never walk again, let alone ride. She spent several months at the Glenrose Hospital where she underwent specialized rehabilitation in order to get back in the saddle, literally! Her empathy and motivation inspired patients and staff at the Glenrose Hospital.





## Jenna

Jenna's communication and mobility disabilities don't stop her from connecting with others in a meaningful way. With the help of her care team at the Glenrose Hospital, Jenna has embraced technology to aid in her communication with others. Her positivity and compassion inspired fellow patients and staff. She meets challenges head on and lives an active and fulfilling life. For Jenna, being able to communicate with a synthetic but naturalistic computerized voice eradicates many of the obstacles to participating fully in daily activities. Using communication devices, Jenna speaks publicly, writes as a freelance author and teaches an English as a Second Language course.

## Michael

Michael's wife tragically passed away during the pandemic and shortly after he was hospitalized for COVID-19. When Michael arrived at the Glenrose Hospital, he was in a wheelchair and required a high concentration of oxygen. He spent several months at the Glenrose, where he overcame many challenges as he endeavored to regain his independence. Michael's care team was touched by his kindness and his relationships with fellow patients.



# Research and Innovation

## Welcome Dr. Andrew Chan

Dr. Chan took the scenic route in his career. He completed his BSc in Mechanical Biomedical Engineering and then obtained his medical degree. However, his love for engineering design and technology drew him to complete a Ph.D. in Biomedical Engineering at the University of Alberta, developing medical and surgical tools for patients with scoliosis. As a post-doctoral fellow, he shifted gears towards older adults, evaluating technologies for home health monitoring and rehabilitation. He is the new senior program lead for research and innovation at the Glenrose Rehabilitation Hospital and leads the Edmonton arm of the Program to Accelerate Technologies for Homecare (PATH), a national partnership to develop, test and evaluate technologies for aging-in-place.

**"Our strategy is to integrate research and innovation with clinical care and to collaborate with our community partners to drive clinically relevant and impactful innovations. The Glenrose Hospital Foundation is a key partner in enabling us to sustainably drive the exploration and development of solutions that will help enable our patients to 'build abilities for life'."**



## Future Vision – Research & Innovation Program

The Glenrose Rehabilitation Hospital is revitalizing its research and innovation program. The new leadership team includes Glenrose Site Director, Lisa Froese; Research and Innovation Program Manager, Doug Hill; Research and Innovation Program Lead, Dr. Andrew Chan; and Scientific Program Lead, Dr. Jessica D'Amico. This interdisciplinary leadership team combines a clinical approach with biomedical engineering and practical implementation. These components together drive research and innovation to have a long-lasting impact on our patients.

The aim of the program is to develop a culture of inquiry that harnesses research and innovation to improve patient experience and reduce healthcare costs. The program does this by integrating clinical expertise with academic, industry, and community partners to improve the quality of life of Albertans undergoing rehabilitation.

There are many examples of research and innovation at the Glenrose, including the stories shared in this year's annual report.





## NanoTess

NanoTess is a new, Alberta-based enterprise focused on helping patients with chronic pressure injuries, such as diabetic foot ulcers. In 2021, NanoTess won the \$100,000 grand prize of the REHAB Innovation to Commercialization (i2c) competition. This competition was sponsored by the Glenrose Rehabilitation Hospital's Research & Innovation program and Prairies Economic Development Canada. In addition to prize money, the sponsors provided NanoTess and other entrants with business mentorship and coaching to grow the health technology industry in Alberta.

NanoSALV, the company's first product, is an antimicrobial wound dressing gel designed as a liquid dressing. It facilitates self-healing and re-epithelialization by providing a gel medium for the natural healing processes to occur. The company is currently working with Dr. Chester Ho and Dr. Hardeep Kainth at the Glenrose Rehabilitation Hospital to evaluate the product for different patient populations. They are hopeful that through further evidence the NanoSALV will be used by patients worldwide.

## True Angle

True Angle is an Edmonton-based biofeedback technology company whose origins can be traced back to Dr. Jana Rieger's lab at the University of Alberta. Dr. Rieger, Dylan Scott and Dr. Gabriela Constantinescu developed a new device and system to help patients have accessible swallowing rehabilitation exercises.

The innovative system, called Mobili-T® (short for mobile therapist) includes a wireless sensor that uses surface electromyography to detect muscle excitation under the chin during swallowing exercises. The system also includes an iOS app that gives patients direct feedback about swallowing muscle excitation and personalized targets to beat. Speech-language pathologists (S-LPs) can access a web portal to track patient progress, customize and adjust workout programs. S-LPs can access adherence to rehabilitation prescription, determine how to intervene, and have meaningful conversations based on the data observed. This contributes important clinical data to the field to develop specific treatments for each patient.

The Mobili-T® system addresses two key challenges in swallowing rehabilitation. First, there are not enough trained clinicians to provide intensive dysphagia exercise rehabilitation. Second, the current standard of care does not sufficiently transfer to the home environment. Appropriate therapy for this condition can prevent aspirating or choking.

Glenrose Research & Innovation assisted True Angle in conducting usability/feasibility studies to develop its Mobili-T® system. True Angle has raised over \$5 million in investment and grant funding, and now sells across the United States and Hong Kong. True Angle's pocket-sized scalable technology allows people to take charge of their health, overcome their swallowing disorders, and improve their quality of life. The Glenrose Hospital Foundation's involvement is a crucial part in the development of these innovations.

# Research and Innovation



Dr. Maria Castro-Codesal, Assistant Professor,  
Department of Pediatrics, U of A/GRH  
Research Affiliate, GRHF Clinical Research  
Grant Recipient-PI

## Establishing Criteria for Early Initiation of Non-Invasive Ventilation in Children with Neuromuscular Disorders

Children with neuromuscular disorders like Duchenne muscular dystrophy or spinal muscular atrophy may be rare but these debilitating diseases affect how patients move, feel and even how they breathe. An affected child's breathing becomes less efficient during the Rapid Eye Movement (REM) stage of sleep and becomes progressively worse over time. Early detection of these diseases can be done by monitoring REM. If caught in the initial stages, a non-invasive ventilation (NIV) support through a mask or similar device can be used to prevent future restrictive lung diseases and breathing issues.

The optimal clinical criteria and timing is still unknown for NIV. Dr. Maria Castro-Codesal's work in validating early implementation of this treatment has the potential to help prevent further respiratory illness and preserve respiratory function. Her study findings will inform changes in the treatment of children with neuromuscular diseases and will assist clinicians in determining who should receive NIV initiation. This preliminary data can be used to leverage larger funding opportunities to drive changes in clinical practice in other national and international centers. This critical research was generously supported by a grant of \$25,000 from the Glenrose Hospital Foundation Clinical Research Grant program.





## Welcome Dr. Jessical D'Amico

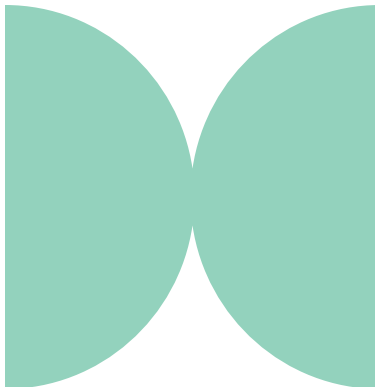
Dr. D'Amico is the scientific program lead within the Research and Innovation Department at the Glenrose Rehabilitation Hospital. This is a new position, funded by the Glenrose Hospital Foundation, aimed at developing and supporting the integration of clinical research and innovation activities within the hospital. Jessica completed her doctoral studies at the University of Alberta where her work was supported by Alberta Innovates, the Alberta Paraplegic Foundation and the Natural Sciences and Engineering Research Council of Canada. She then completed a postdoctoral fellowship at Neuroscience Research Australia (Sydney, Australia) before accepting a position as an assistant professor and scientific director at the University of Louisville, Kentucky Spinal Cord Injury Research Centre, Frazier Rehabilitation Institute (Louisville, USA). She has been an invited plenary speaker to conferences in the field of neurorehabilitation and has been recognized internationally for her work. Working closely with clinicians at GRH, GHF, and academic and industry partners, she is passionate about utilizing her skills and experience to establish a robust clinical research program at GRH to ensure that patients have access to novel, cutting-edge therapies and treatments to support their ability to live independently and with improved quality of life.

## Karma Medical Products

Karma Medical Products is an Edmonton-based company with the goal of assisting patients in "Gaining Flexibility, Strength, and Functional Independence." Glenrose therapists identified a need for an all-in-one progressive upper limb rehabilitation device. Karma Medical Products was born out of Karma Machining and Manufacturing out of a desire to develop a solution for patients with upper limb impairment.

The team developed the FEPSim<sup>®</sup>, a device used to train patients in the natural wrist movements of "Flexion, Extension, Pronation and Supination (FEPS)". This device enables treatment of conditions that impair the use of the hand, wrist, and forearm such as stroke, osteoarthritis, or bone fractures. The FEPSim<sup>®</sup> was developed with the assistance of Gwen Dziwenko and Robert Hirsche, two occupational therapists at the Glenrose Rehabilitation Hospital.

Through close communication with therapists, the FEPSim<sup>®</sup> was developed to be a versatile tool in rehabilitation. Its lightweight and portable design makes it a suitable device for both clinical and remote rehab. The FEPSim<sup>®</sup> uses an adjustable torque resistance system, and a set of modular handle attachments that can be gripped and turned by the user in various ways. The modular handle attachments allow the user to simulate practical actions such as turning a doorknob, twisting a key, or opening a jar. The system's adjustability allows the resistance to be tuned to the physical abilities of each individual patient and increased as the patient progresses. Dr. Antonio Miguel-Cruz carried out rigorous clinical evaluation to demonstrate its acceptability and effectiveness. The FEPSim<sup>®</sup> is now sold and distributed across North America, improving the lives of both patients and therapists.



Dr. Antonio Miguel-Cruz, Darryl Short and Robert Hirsche with vertical and horizontal versions of the FEPSim<sup>®</sup>



# Impact in Action



## Amelie

Amelie became a Glenrose Rehabilitation Hospital patient at just two months old after it was discovered she had significant hearing loss. Amelie was fitted for hearing aids at five months old and her speech pathology and physiotherapy journeys began one month later.

At eighteen months old, Amelie’s hearing rapidly deteriorated at which point it was recommended that she receive cochlear implants. After the procedure, the Merciers noticed a life-changing difference.

Now, Amelie is a thriving university student who is even bilingual! The experience at the Glenrose Hospital inspired her family to become monthly donors, supporting the critical care provided through the wonderful staff and specialized programs.

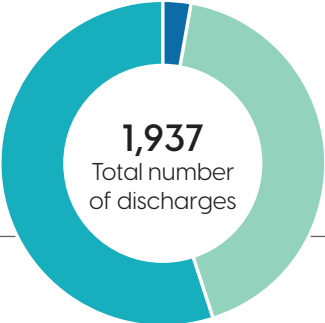
**2,149 admissions**  
Total inpatient admissions for 2022  
(Jan 1st to Dec. 31st, 2022)



**41 days**  
Average length of stay



**77%**  
Patients were discharged home



Discharges by age group

- 1-17
- 18-69
- 70-100 & above

55  
817  
1,065



**106,191**  
Total visits



**25,435**  
Unique patients



**53,000**  
Virtual visits



**2,286**  
Group visits



**845**  
Virtual group visits



## Advanced Prosthetic Robotic Machine

Thanks to the Edmonton Civic Employees Charitable Assistance Fund, The Stollery Charitable Foundation and the Allard Foundation for helping to fund the state-of-the-art robotic carver. Because of their generosity, the Prosthetics and Orthotics department is able to continue producing high quality, life-changing prosthetic limbs, orthotic devices and wheelchair cushions onsite.

The new equipment plays a pivotal role in delivering exceptional patient care and maintaining a smooth inpatient flow. It has allowed the Glenrose Hospital to expand service delivery to include custom cushion forming and the creation of larger orthotic devices, all while enhancing the level of detail and reducing costs.

The carver is the only one of its kind in Alberta. In addition to the 900 patient carvings at the Glenrose each year, the hospital has extended its reach by producing approximately 400 carvings for the Alberta Children's Hospital, approximately 50 helmets for the Stollery Children's Hospital along with braces for the Scoliosis Clinic at the University of Alberta. With the introduction of the new carver, the Glenrose Hospital remains at the forefront of innovation and research for bracing and prosthetics.



## TheraStairs

A common mobility challenge a patient faces in their daily life is walking up and down stairs. During the rehabilitation process, therapists tailor a patient's activities according to their current ability. TheraStairs are a height adjustable set of stairs that can be modified to the patient's needs. The standard stair height of 7" can be lowered to 4" for patients in the early stages of a patient's rehabilitation journey or raised to 10" for patients requiring an extra challenge.

With generous support from the Glenrose Hospital Foundation, in collaboration with the Red Deer Polytech Centre for Innovation in Manufacturing Centre, a new version of the stairs was created making them mobile. This allows the stairs to be easily and readily moved throughout a therapy space. The stairs can be used in a patient's room or in conjunction with other rehabilitation equipment.

# Impact in Action



## Imagination Centre

The Imagination Centre at the Glenrose Rehabilitation Hospital is home to the Brain-Computer Interface (BCI) program.

BCI technology is enabling participation and improving functions for individuals in ways not possible before. Using BCIs, individuals can learn to control devices using commands generated from their brain's electrical activity. This game-changing technology makes it possible for an individual to control robots, video games, computers, power wheelchairs, and environmental controls using only their thoughts.

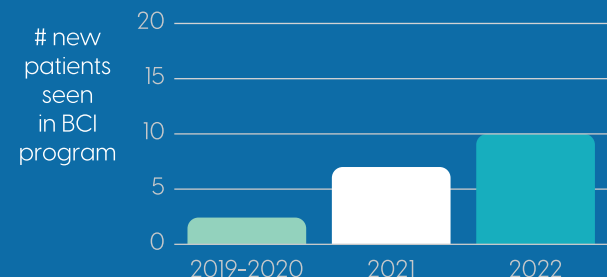
We are entering a new age for human ability – and by unlocking new possibilities through research and technology, we can help patients live their best possible lives. We are driven to be at the forefront of this transformation by bringing together and enabling clinicians, researchers, families, donors and partners in the common pursuit of a better future for our patients and to reimagine the limits of human ability.

The BCI program is just the beginning. As the Imagination Centre grows to include other neuroadaptive technologies and translational research, the impact will be exponential.

### WE ARE MAKING NEW DISCOVERIES & INNOVATIONS

- ✓ We have developed a BCI-enabled digital art application
- ✓ We have developed an app to allow multiple people to play BCI video games together

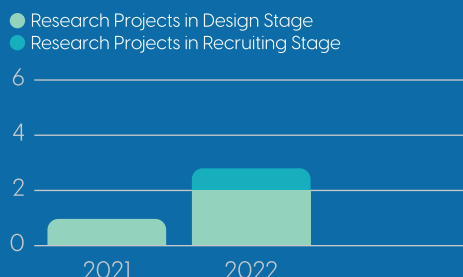
### CLINICAL PROGRAM CONTINUES TO GROW



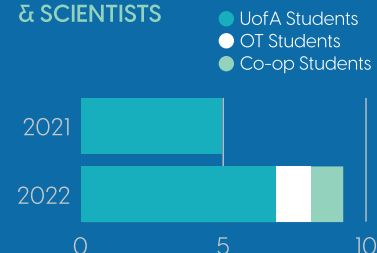
### PATIENTS & FAMILIES HAVE MEANINGFUL EXPERIENCES FOR THE FIRST TIME



### WE ARE LEADING & PARTICIPATING IN RESEARCH



### WE ARE TEACHING THE NEXT GENERATION OF BCI CLINICIANS & SCIENTISTS



## Ted & Iona

Ted and Iona Degner demonstrate philanthropic leadership, showcasing their unwavering dedication to both the community and the Glenrose Rehabilitation Hospital through their support of the Brain-Computer Interface Program, an initiative that empowers patients facing significant communication and mobility obstacles.

Through their generous contributions, the Degners are helping to make a profound impact on the lives of children with disabilities. Ted and Iona's commitment ensures the continued advancement of this vital work. Their support not only brings joy and empowerment to individuals but also creates a legacy of inclusivity and progress within the community.

**"We chose to support the Glenrose Hospital to help make a difference for people less fortunate than ourselves. With all the new and great technology in North America, the Glenrose is able to help their patients experience a more normal life that they would not have been able to achieve on their own."** ~ The Degners



## Transforming Tomorrow: Cryptocurrency Powers Technological Innovation

The Glenrose Hospital Foundation is one of the only healthcare foundations in Canada to accept donations of cryptocurrency. The Canadian Blockchain Consortium and its members committed to raising \$100,000, through both crypto and traditional donations, to fund innovative technologies at the Glenrose Hospital.

# Our Finances



Fiscal Year	2023	2022
<b>REVENUE</b>		
Donations and fundraising	\$1,243,282	\$2,446,621
Casino/Gaming revenue	\$148,164	\$210,704
Government grants and assistance	\$142,983	\$273,335
Investment revenue	\$104,400	\$421,989
<b>Total</b>	<b>\$1,638,829</b>	<b>\$3,352,649</b>

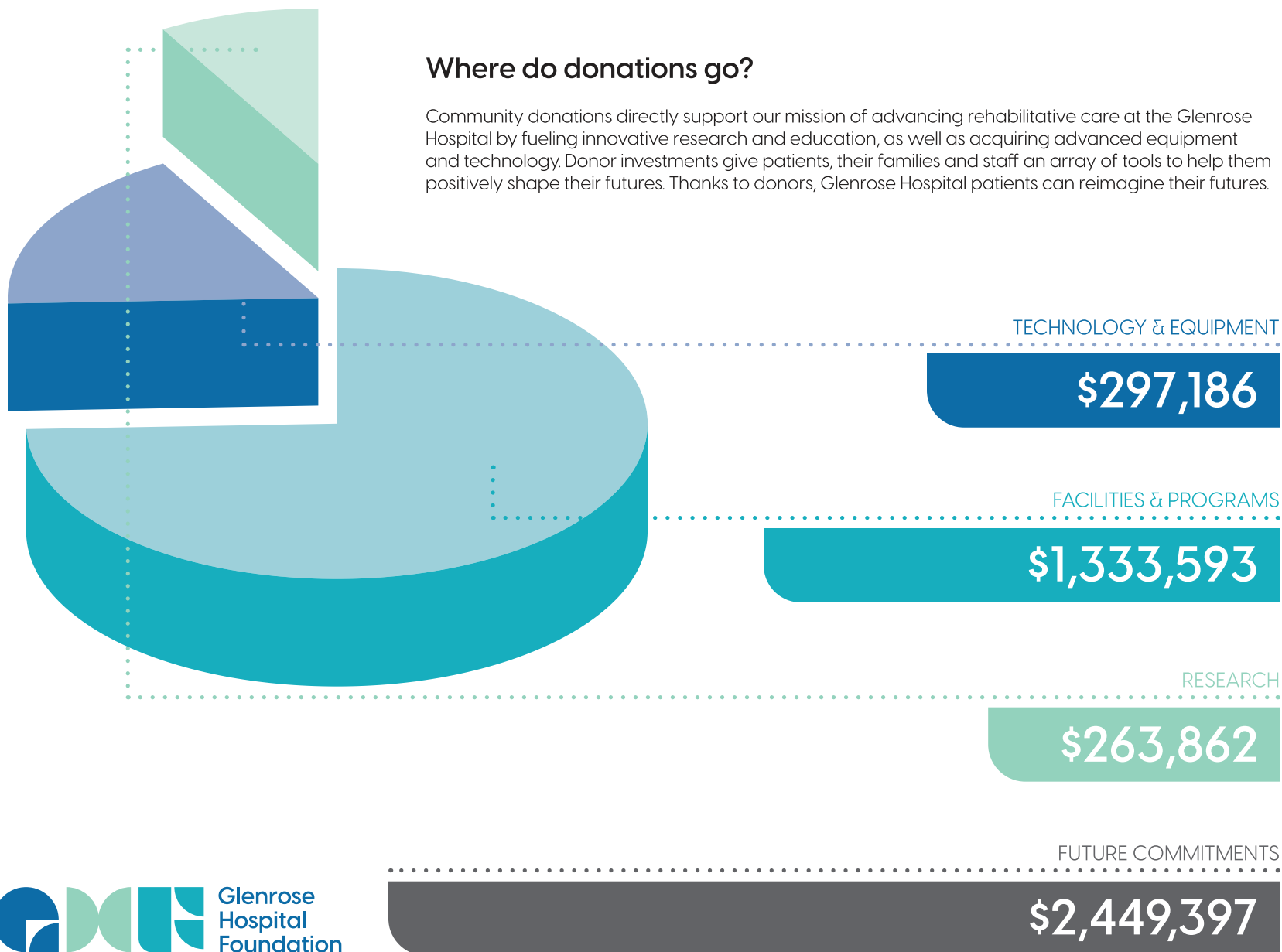
<b>EXPENSES</b>		
Administrative	\$312,596	\$282,739
Fundraising	\$1,126,461	\$1,026,818
<b>Total</b>	<b>\$1,439,057</b>	<b>\$1,309,557</b>

Revenue over Expenses before Distributions	\$199,772	\$2,043,092
Distributions to Glenrose Rehabilitation Hospital	\$1,894,641	\$1,500,946
<b>Revenue over Expenses</b>	<b>(\$1,694,869)</b>	<b>\$542,146</b>



## Where do donations go?

Community donations directly support our mission of advancing rehabilitative care at the Glenrose Hospital by fueling innovative research and education, as well as acquiring advanced equipment and technology. Donor investments give patients, their families and staff an array of tools to help them positively shape their futures. Thanks to donors, Glenrose Hospital patients can reimagine their futures.





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