

Hamilton Health Sciences 2020/2021 Community Report: Rising Up



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A MESSAGE FROM OUR LEADERS

Hamilton Health Sciences (HHS) has faced one of the most challenging years in living memory.

The impact of the worldwide, COVID-19 pandemic affected all aspects of our operations, from the front lines to all of our support services. It has taken a deep toll on our patients and their families, our community, and our team.

We are so proud of everyone at HHS – staff, physicians, volunteers and learners – for rising up to meet every challenge head-on.

As one of the largest hospitals in Ontario, HHS was called upon to play a leadership role right from the beginning. Our people were intensely involved in the response planning effort locally, regionally and provincially. We were also an integral part of Ontario's response to provide care for patients with COVID-19.

No hospital acts alone, especially in a crisis. Our city has a long history of collaboration among health partners and it paid off over the past year. Working together with Hamilton Public Health, St. Joseph's Healthcare Hamilton, primary care physicians and other health provider partners, we established testing centres, vaccine clinics, a satellite health centre and more. Hospitals across the entire region similarly pulled together to ensure we were mounting the most effective and coordinated response possible.

In the meantime, the daily healthcare mission of our organization carried on. Babies were born, diagnoses made, and treatments and human support provided to many people. And the important transformation of our hospital also kept pace, including the work to start implementing a leading edge hospital information system, rebuilding our West Lincoln Memorial Hospital site, and the largescale acquisition of new medical technology and equipment.

As an HHS team, we have shown what we're made of over this past year. And although the challenges continue, we will keep rising up, together.

Rob MacIsaac
President & CEO

Charles Criminisi
Chair, Board of Directors

URGENT, UNPREDICTABLE AND COMPLEX: PANDEMIC YEAR ONE

How do we tell the story of a year like no other? It was a time of rapidly changing information. A testing ground for processes and partnerships. And throughout, a roller coaster of emotion.

Each chapter had its own unique challenges and accomplishments. At every point in the story, the expertise and leadership of the entire HHS team – paired with courage and compassion – got us through.

Here is our summary, and a salute to our people for demonstrating resilience and heroism during an extraordinary time.

THE BEGINNING

MARCH 11, 2020: The World Health Organization declares a global pandemic. On the same day, the first local case of COVID-19 infection is announced - a physician at Juravinski Cancer Centre.

Screening centres are set up at every hospital entrance. Hospital staff are redeployed and eventually more staff are hired for this work.

Administrative offices and non-clinical departments at HHS empty out as anyone who can work remotely is advised by Public Health to do so.

An assessment centre opens at our West End Clinic to test people for COVID-19.

The Hamilton Regional Laboratory Medicine Program begins processing test samples from across the province.

A team comes together to source personal protective equipment (PPE), drugs and other medical equipment in the midst of global shortages.

Hamilton General Hospital site designated one of five COVID-19 patient care sites in the region.

HHS, along with local partners, carries out assessments of the area's long-term care and retirement homes to ensure appropriate support for testing, outbreak management and other staffing needs.

Over 30 HHS staff volunteer to assist the team at Dundurn Place Care Centre to care for residents and to stabilize the home.

Local, regional and provincial meetings on pandemic response take place seven days a week from early morning until late at night.

The local community is so supportive of HHS that a process has to be set up to manage all the donations of food and other items.

Clinics pivot to providing virtual care wherever possible and elective surgeries are paused.

STABILIZING

LATE SPRING 2020: Case numbers start to decline, even as infectious disease specialists predict a coming second wave.

HHS and St. Joseph's Healthcare Hamilton work together to accept over 50 residents from the Rossllyn Retirement Home on a single night in May 2020 due to a COVID-19 outbreak.

Hospital services that were paused since mid-March gradually re-open.

Medical residents and other learners start to return.

Medical residents and other learners start to return.

PPE supply stabilizes, thanks to relentless efforts by the HHS team to source it from all over the world, and local partnerships and supports.

HHS creates the Pause, Reset, Nourish resource as a staff mental health support.

The Government of Ontario expands COVID-19 testing availability so that more people are eligible to get tested.

Visiting restrictions continue; St. Peter's Hospital develops a window-visiting program so patients can see their loved ones through main floor windows.

THE SECOND WAVE

SEPTEMBER 2020, increased COVID-19 testing continues as schools open for the first time since March 2020.

Infection rates start rising again locally and across the province.

HHS and St. Joseph's Healthcare Hamilton free up hospital beds by opening a Satellite Health Facility for non-COVID-19 patients who no longer need hospital care and are awaiting care elsewhere in the community.

Members of HHS' Nursing Resource Team support all areas including COVID-19 units, the Satellite Health Facility and Grace Villa.

In December, HHS assumes temporary management responsibility for Grace Villa Long Term Care Home, site of the city's largest outbreak. Together with the Villa team, HHS staff work tirelessly to reduce the virus transmission and end the outbreak in the home.

Record numbers of COVID-19 patients are in the Hamilton General Hospital's COVID-19 unit and intensive care unit. To cope with the growing number of cases, Juravinski Hospital and Cancer Centre is designated an additional COVID-19 site.

Health Canada approves the Pfizer BioNtech COVID-19 vaccine for use in Canada on December 9, 2020; the first vaccine to be green-lighted for Canadian distribution.

The use of an artificial heart-lung bypass machine, considered a last-resort treatment, is expanded at Hamilton General Hospital. HHS is one of only four hospitals in Ontario to provide Extracorporeal Membrane Oxygenation (ECMO), which has been successfully used for critically ill COVID-19 patients.

A RACE BETWEEN VACCINATIONS & VARIANTS

DECEMBER 23, 2020, the first Hamilton vaccine clinic opens and vaccine is administered to healthcare workers. This kicks off clinics managed by HHS, St. Joseph's, Hamilton Paramedic Services, Hamilton Public Health and primary care physicians.

A province-wide shutdown is imposed on Dec. 26, 2020.

The first COVID-19 variants are discovered in Canada and steadily increase to represent the majority of infections.

COVID-19 infection rates continue to climb across Ontario, and outbreaks occur across HHS units. On January 14, 2021 the Province issues an Ontario-wide, stay-at-home order.

HHS is one of 12 hospitals selected to participate in a provincial Nursing Extern Program.

By March 2021, a third wave starts to gain speed with the emergence of COVID-19 variants.

Global supply shortages slow down the vaccine roll-out across Canada, as manufacturers struggle to keep pace with demand. The Government of Canada

expands the time between the first and second vaccine doses in order to mitigate the impact of slow supply.

Critical care capacity is increased by 43%. New team-based models of care are implemented and 240 staff are redeployed.

The rate of local vaccinations increases as more vaccine shipments arrive.

One of two provincial mobile health units is constructed adjacent to the Hamilton General Hospital. The 80-bed facility provides temporary hospital capacity.

Here is a salute to our people for demonstrating resilience and heroism during an extraordinary time. Click on each photo to read their stories.

“What keeps me in this role is the feeling of having a purpose,” says Allie Zarcone, a nurse at the West End Clinic COVID-19 Assessment Centre. “I’ve learned how strong I am as a person and as a nurse.”

“The thing that kept me going was the teamwork,” says David Burzynski, an occupational therapist on Hamilton General Hospital’s COVID-19 unit. “Staff really pulled together to help each other through hard days, regardless of their typical role.”

HHS emergency departments (ED) are often the first point of contact for patients requiring hospital care for COVID-19 symptoms. “We are safely equipped and fully capable of handling any crisis as long as we work together as a team,” says ED nurse Camille Marshall. “In times of crisis we can all choose to take the path of compassion, courage, understanding and hope.”

Since the early days of the pandemic, screeners like Blake Ellis have been the first faces patients, visitors and staff see when stepping inside our buildings. The screener’s role is vital in limiting the spread of COVID-19 at our hospital sites.

“I have formed close connections with patients just by being a friend they can talk to while I’m in their room cleaning,” says environmental aide Amy Stirling. Our Customer Support Services team – which also includes porters – is essential to maintaining the flow of the hospital.

“It’s very fast-paced,” says Candy Rutherford, a technical specialist in the Hamilton Regional Laboratory Medicine Program (HRLMP). Since March 2020, the HRLMP virology lab has processed nearly half a million COVID-19 tests from across southern Ontario.

“Our team supports the continuum of care from hospital into the community,” says social worker Debbie Jones, who works with patients and families at the Satellite Health Facility in downtown Hamilton.

“Those people really needed us,” says RN Alicia Crisostomo, who was redeployed to Grace Villa Long Term Care Home as HHS temporarily took over its management. Grace Villa was the site of the city’s largest outbreak.

“Caring for COVID-19 patients in the intensive care unit comes with a lot of unknowns and challenges,” says respiratory therapist Ally Ruzycski- Chadwick. “But what I’ve learned is, people are more resilient than you think.”

When the city’s first vaccine clinic opened, HHS’ chief of emergency medicine, Dr. Kuldeep Sidhu and team had done their planning and were ready to start vaccinating. “We have an extremely organized and streamlined process in the clinic, which helps to create a positive and welcoming atmosphere for patients.”

“Throughout the pandemic we have implemented various measures to reduce exposure and transmission of COVID-19,” says infectious diseases specialist Dr. Sarah Khan, part of the team that sprang into action after the world’s first cluster of cases was reported. “These collective efforts will help keep us safe.”

“The vaccine is the light at the end of the tunnel,” says pharmacist Rida Batool, whose team prepares the vaccine and ensures there is just enough available for all scheduled appointments without wasting a single dose. “I am so grateful to contribute even a little bit to the vaccine efforts in Hamilton.”

CARE THAT DOESN’T QUIT: HHS EXPERTISE GOES VIRTUAL

Virtual care services for patients of HHS – including medical appointments by phone or video conferencing – have skyrocketed by 1,500 per cent since the start of the pandemic. Other forms of virtual care, which were already increasing even before the pandemic, include at-home monitoring. Patients receive monitoring devices to bring home following hospital stays or surgery and are followed remotely by healthcare providers.

Here are some examples of achievements in virtual care made by HHS during the past year.

REMOTE CARE FOR KIDS IN REMOTE REGIONS

Indigenous children from the James Bay and Hudson’s Bay regions now have access to eye care at McMaster Children’s Hospital (MCH). In early 2021, Dr. Kourosh Sabri, a pediatric ophthalmologist working in collaboration with the Weeneebayko Health Authority (WAHA) and a team of software developers from McMaster University, launched a new Indigenous Children Eye Examination (ICEE) program. Through virtual

consultations with eye care professionals at MCH, the program makes it possible for children to receive eye care they may not be able to access otherwise.

PROVIDING VIRTUAL HOSPITAL CARE TO LONG-TERM CARE RESIDENTS

An average of 2,000 long-term care residents are transferred annually to a local emergency department, and approximately half need to be admitted. Now long-term care home residents can receive emergent or urgent care without the risks of a physical transfer, through a program called LTC-CARES HAMILTON. In April 2020, HHS teamed up with St. Joseph's Healthcare Hamilton to provide 24-hour access to emergency care physicians via telephone or video conferencing, enabling patients to stay in their own residence and the on-site care teams to be involved.

KEEPING A VIRTUAL EYE ON HEART PATIENTS

People who have had heart failure often experience recurring hospital admissions and reduced quality of life, and up to 50 per cent can die within five years of diagnosis. During the pandemic, the HHS Heart Failure Program worked with the Community Paramedic Remote Monitoring Program to monitor patients' vital signs in real-time and provide early warning of deteriorating health so that quick intervention could take place.

MENTAL HEALTH TEAM STAYS CLOSE TO VULNERABLE YOUTH

When the pandemic forced the closure of the Child and Youth Mental Health Program (outpatient) at the Ron Joyce Children's Health Centre, teams quickly mobilized to ensure high risk, vulnerable youth and their families continued to receive services. Throughout the year, the virtual team maintained the same pre-pandemic service levels and visit volumes through online and phone visits.

UNIQUE PARTNERSHIP ADVANCES CARE FOR SERIOUSLY ILL BABIES

In a southern Ontario version of "doctors without borders," experts in the Neonatal Intensive Care Unit at McMaster Children's Hospital (MCH) are providing virtual consultations for critically ill babies being cared for at Niagara Health. Using video conferencing technology through the Ontario Telemedicine Network, the team from MCH can assess the patient and help develop a plan of care. This reduces the need for Niagara infants to be transferred to Hamilton, which can be stressful on families.

HOME MONITORING TECHNOLOGY KEEPS PATIENTS AND STAFF CONNECTED

Going home from the hospital quickly and safely is more achievable than ever thanks to home monitoring technology that keeps recently-released patients under the watchful eye of clinical staff. Specially-trained nurses run a central command centre where they receive regular information from patients recovering at home. Patients are given a tablet computer and monitoring equipment that records blood pressure, heart rate, respiratory rate, oxygen levels, temperature and weight. As their vital signs are recorded, nurses receive the information instantly and can bring in physicians if needed for immediate intervention. COVID-19 patients, surgery patients and others are benefiting from the monitoring system to safely recover at home.

NEWS IN RESEARCH, INNOVATION & EXCELLENCE

HHS RECOGNIZED FOR EXCELLENCE IN RESEARCH

In 2020, HHS was once again named among the top research hospitals in Canada. Research and discoveries at HHS are transforming the way healthcare is provided locally, nationally and around the world. These research achievements are made possible through strong partnerships between HHS physicians, researchers and patients and our commitment to collaboration. HHS' many valued partners include McMaster University, other hospitals, academic institutions and private enterprises in Canada and beyond.

HHS PIONEERS NEW HEART VALVE TREATMENT IN CANADA

HHS' interventional cardiology team was the first in the country to perform a lifesaving cardiac valve repair procedure as part of the TRILUMINATE trial, an international study underway at select hospitals in Canada, the United States and Europe. The trial is evaluating the safety and effectiveness of a catheter-based, non-surgical treatment for patients with severe tricuspid regurgitation – a condition where the tricuspid heart valve doesn't close properly, allowing blood to flow backward into the heart. This forces the heart to work harder and in severe cases can lead to heart failure and death. Without the need for surgery, patients recover faster and typically spend only one night in hospital.

CLINICAL TRIAL SHOWS PROMISE IN LATE-STAGE LUNG CANCER

A clinical trial involving patients at Juravinski Cancer Centre is offering hope that advanced lung cancer can be treated more like a chronic disease, where people receive treatment for longer periods to suppress the cancer. The trial, led by Dr. Rosalyn Juergens, combines chemotherapy and immunotherapy, and is showing positive outcomes. Several trial participants have lived beyond four years and are still receiving treatment, with no sign of their cancer progressing.

REDUCING SOCIAL ISOLATION THROUGH DANCE

Exercise keeps the brain and body healthy as people age, and can also help reduce social isolation during COVID-19. The GERAS DANcing for Cognition and Exercise (DANCE) is a new evidence-based program that provides social connection with virtual livestream dance classes. Researchers at HHS' GERAS Centre for Research in Aging are studying the impact of these dance classes on frailty, falls and cognition. The program is in partnership with McMaster University, and the YMCA Hamilton, Burlington, Brantford, and is funded by the Centre for Aging + Brain Health Innovation (CABHI).

HHS RESEARCHER WORKING ON “GOOGLE FOR PATHOLOGY”

Digital pathology could transform the way pathology is conducted around the world and lead to better, faster patient care. Instead of diagnosing disease one slide at a time under a microscope, there could be thousands of images to compare it to online – like Google for pathology. Dr. Clinton Campbell is leading a one-year pilot project in digital pathology in partnership with Canadian company Huron Digital Pathology. Harnessing artificial intelligence, it's the only project of its kind in Canada.

HHS PHYSICIAN LEADS EFFORT TO EXPAND BRAIN CANCER RESEARCH IN CANADA

Pediatric neurosurgeon Dr. Sheila Singh is a leading researcher in glioblastoma (GBM) – an aggressive, incurable type of brain cancer. Dr. Singh's passion for this research motivated her to co-found the Canadian research company Empirica, acquired last year by the American company Century. A newly-created subsidiary, Century Therapeutics Canada, is now based at the McMaster Innovation Park, helping HHS continue to attract top-flight researchers to Hamilton to address one of the most difficult and complex cancers.

HHS APP FOR CHRONIC CONCUSSION REHAB POISED FOR GLOBAL IMPACT

A homegrown innovation with the potential for worldwide impact, the MyHeadHealth mobile app will help people manage the effects of concussion in their daily lives. The app provides a personalized treatment plan, instructional videos, educational tools and a way to log symptoms. It was developed by HHS physical medicine and rehabilitation specialist Dr. Gihan Perera in partnership with HHS' CREATE (CentRE for dAta science and digiTal hEalth). HHS is the test base for this app, but the plan is to scale it out to other healthcare systems. The app could become the international standard of care for chronic concussion rehabilitation.

EXPANDING REGIONAL CANCER CARE

The long-awaited Ron and Nancy Clark Stem Cell Transplantation and Cellular Therapies Unit opened at the Juravinski Hospital and Cancer Centre in fall 2020. The

new unit means more people can receive stem cell transplants, either allogeneic (from a donor), or autologous (using the patient's own stem cells). HHS is one of just three Ontario hospitals providing all forms of adult stem cell transplants.

The expansion results from \$25-million in funding from the Government of Ontario and a \$5-million investment from community donors through the HHS Foundation's successful, Tomorrow Stems From You® campaign.

HELPING INDIGENOUS CHILDREN TO THRIVE

In 2020, a new partnership was created between De dwa da dehs nye>s Aboriginal Health Centre (DAHC) and the Ron Joyce Children's Health Centre at McMaster Children's Hospital to improve access to diagnostic assessment for Fetal Alcohol Spectrum Disorders (FASDs) for children, youth and families who identify as Indigenous. Together, DAHC and MCH are providing comprehensive, multidisciplinary assessment and diagnostic services to indigenous communities regionally.

SAME DAY/NEXT DAY HOME SURGERIES

Against the backdrop of growing surgical wait lists and constrained bed availability due to the pandemic, a new Arthroplasty Unit (AU) at Juravinski Hospital ensures that hip and knee total joint replacement surgeries proceed as scheduled. The new AU, opened in November, supports patients to return home on the same day or the day after their surgery. Up to 40 per cent of total joint arthroplasty patients are able to return home the same day as their procedure.

STROKE PROGRAM RECOGNIZED FOR NATIONAL LEADERSHIP

HHS earned a distinction in stroke services from Accreditation Canada, recognizing our national leadership in the delivery of high quality stroke care and meeting best practices. Hamilton General Hospital is the designated Regional Stroke Centre for Central South Ontario, and home to the Integrated Stroke Program. This centre of excellence uses innovative approaches to stroke care, providing treatment including stroke prevention, emergency stroke care including the delivery of clot-busting medication and life-saving clot retrieval procedures, specialized post-stroke acute care and rehabilitation.

VALUING EQUITY, DIVERSITY AND INCLUSION

The President's Task Force on Equity, Diversity and Inclusion (EDI) to provide leadership on our commitment to EDI was established. The task force is co-chaired by Dr. Smita Halder, Chair, HHS Medical Advisory Committee; Dr. Sunjay Sharma, physician site lead, Hamilton General Hospital; and Bruce Squires, President, McMaster Children's Hospital. It will take action to ensure that everyone who enters HHS feels safe, welcome, and respected.

INVESTMENTS IN OUR PEOPLE & TOOLS

The best patient care in the future will require new processes, equipment and partnerships to keep up with new technology, changing demographics and increasing patient expectations.

We have stayed the course on investments that will ensure Hamilton Health Sciences remains a high-performing hospital that delivers exceptional and safe care to the patients we serve.

Over \$105 million was invested in equipment and tools to aid in patient diagnosis and treatment, and to make critical upgrades to facilities and systems.

- \$105 million total invested
- \$33 million facilities: expanded stem cell unit at Juravinski Hospital and Cancer Centre
- \$6.1 million computer technology
- \$11.6 million facilities: infrastructure upgrades at West Lincoln Memorial Hospital
- \$13.9 million other facilities
- \$5.9 million health & safety
- \$21 million medical equipment
- \$4.3 m new imaging and ultrasound system at Hamilton General Hospital
- \$720,000 new fleet of incubator warmers at McMaster Children's Hospital

THE COST OF COVID-19: An additional \$14 million in extraordinary funding was provided by the Government of Ontario to support our COVID-19 pandemic response.

- \$500,000 computer technology
- \$4 million facilities
- \$1.3 million health & safety
- \$8.8 million medical equipment
- \$2.5 m additional 250 stretchers to support pandemic response

BY THE NUMBERS

- Serving a region of 2.3 million
- 300,000+ patients served
- 3,640 babies born
- 139,101 emergency visits
- 1,200+ COVID-19 patients cared for
- 142,429 COVID-19 tests performed in assessment centre
- 354,795 virtual visits

- 1,500% increase in virtual care in 2020
- Ranked 4th in Canada's top 40 research hospitals 2020
- 400+ researchers
- 140+ new clinical trials per year
- Global research studies across 1,600 sites, 6 continents, in 102 countries
- \$1.6 billion dollar organization
- One of Forbes Canada's best employers for the second consecutive year
- 13,000+ employees
- 1,200+ physicians
- 1,200+ volunteers
- 9 sites