

# ONTARIO UNIVERSITIES: REBUILDING A WORLD-CLASS HEALTH-CARE SYSTEM



**The Issue:** A healthy economy depends on a healthy population. As Ontario rebuilds its health-care system from COVID-19, it needs a highly skilled health-care workforce and ground-breaking innovation to address increasingly complex challenges, such as the long-term impacts of the pandemic, the needs of an aging population, as well as a backlog of elective surgeries and routine procedures.

## Background

- The COVID-19 pandemic has exposed gaps in our health-care system, along with the need to increase self-sufficiency and resiliency to help protect us against future risks.
- A 2021 report released by Ontario's Financial Accountability Office estimates that it will take more than three years to eliminate the backlogs and cost approximately \$1.3 billion. This need was further highlighted by the province's \$324-million investment to help run hospitals at 115 per cent to catch up on surgeries.
- At the same time, many doctors, nurses and other health-care professionals are burning out and plan to leave the profession due to the challenges they've experienced during the pandemic. It means the health-care sector is facing an unprecedented wave of unplanned early retirements and resignations.
- Ontario will need a strong pipeline of workers in health care, life sciences and medical technologies to address the labour shortage and backlog within Ontario's health-care system.
- In addition, innovation in health care is critical to navigate through COVID-19 and beyond, through future outbreaks and the rapidly changing needs of the province's health-care system.

## How Universities Are Supporting Ontario

- Amid the challenges brought on by COVID-19, Ontario's universities are helping Ontario rebuild its health-care system by meeting the need for a strong health-care workforce, creating Ontario-made innovations and advancing health-focused research.
- Universities graduate more than 10,000 students each year from health-care programs. They have the ability to educate and train greater numbers of doctors, nurses, nurse practitioners and other health professionals and managers needed to navigate COVID-19 and beyond in order to reduce the growing burden placed on our province's health-care system.
  - There is strong demand in the health-care programs universities offer and record-high applications to these programs. This highly skilled, in-demand talent is ready to meet the need today and into the future, ensuring Ontario's patients receive critical care.
  - University researchers are also conducting ground-breaking research in health care that has led to vaccine development, treatments and outcomes modeling, supporting the fight against COVID-19.



**254,800**

Total estimated job openings within the health-care sector by the year 2028, that typically require a university education, according to the Canadian Occupation Projection System.

## Partnering to Rebuild Ontario

Ontario's universities are prepared to expand at least 880 nursing (Baccalaureate in Nursing) spaces in the fall of 2022 with potential further increases in the future. With a 35% increase in applications to our nursing programs since March 2020, there is no shortage of qualified and interested applicants to fill these new spaces.

Universities also have the capacity to expand nurse practitioner (NP) programs by at least 70 positions in the fall of 2022.

With investments into these vital programs, Ontarians will benefit from an additional 2,685 RN graduates and an additional 280 NP graduates within five years.

Vibrant universities will continue to develop adaptable talent, help rebuild our health-care system, as well as drive innovation and regional economic development.

It is why in order to fully unleash this potential, Ontario's universities are asking that the government – through increases to university revenue sources, such as expanding spaces in high-demand programs to ensure a strong health-care workforce – make critical investments in the sector today to rebuild a better Ontario for tomorrow.

By working together, we can navigate through this pandemic, safeguard Ontario's health and economy and build a brighter future – not just for the students we teach and the communities we serve, but for Ontario's future and all who live here.

# PARTNERING TO REBUILD A WORLD-CLASS HEALTH-CARE SYSTEM



Through community partnerships, innovative research, mental health supports and vaccine clinics, Ontario's universities continue to educate the doctors, nurses and other health professionals that provide our communities with the highest-quality care, while conducting the research that will help Ontarians live independent, fruitful lives and reduce the growing burden placed on our province's health-care system.

Below are just some of the ways universities are leveraging their expertise and resources to support the health of patients and communities across the province and help meet the health-care challenges of today and tomorrow.

## ● Strengthening Ontario's health-care workforce

- To help students gain a holistic understanding of individual and community health and well-being, **Algoma University** launched a minor degree in Health, Wellness and Addictions. The minor integrates both Indigenous and non-Indigenous teachings as they relate to their lived experiences navigating the Canadian health-care system.
- Partnerships between universities and public health can help support the health and vitality of local communities. An expanded partnership between **Brock University** and Niagara Region Public Health and Emergency Services is helping identify new research areas to address and improve the long-term health of Niagara residents.
- In response to the regional nursing shortage, nursing students at **McMaster University** are joining the frontlines of Hamilton's two hospital systems through a paid externship program that helps nursing students build both hard and soft skills while helping fill vital roles within community hospitals.



- By supporting staff in intensive care and emergency units in hospitals across the Greater Toronto Area, nursing students at **Ryerson University** stepped up to help support Ontario's health-care system and assist on the frontlines of the COVID-19 pandemic.
- Throughout the COVID-19 pandemic, medical students at **Western University** supported front-line workers and members of the local community through outreach activities. A team of students founded Accel Labs, a social entrepreneurship incubator, to help strengthen the reach and impact of student-led initiatives.
- Work-integrated learning provides students with valuable experiential learning opportunities and helps support community partners. **Wilfrid Laurier University** is strengthening community health care by connecting students with work-integrated learning placements through partnerships with local public health and long-term care.



## ● Mitigating the spread of COVID-19 through research innovations

- Some COVID-19 patients can have severe respiratory responses to the virus. Researchers at **Carleton University** are helping prevent life-threatening COVID-19 symptoms by using artificial intelligence to identify protein interactions that will prevent inflammation and other severe responses associated with the virus.
- Limiting the spread of COVID-19 in hospitals is key to ensuring patient safety. Researchers at the **University of Guelph** have developed a hand-held thermal camera-based imaging tool powered by machine learning that detects COVID-19 symptoms to help health-care workers better triage patients with potential infections.
- The challenges brought on by the COVID-19 pandemic have placed a significant strain on the mental health of health-care workers. Researchers at **Lakehead University** are leveraging an artificial intelligence powered staff scheduler to help reduce burnout among health-care workers.



- Research from **Queen's University** is helping explain why some patients might experience blood clots after receiving a COVID-19 vaccine. As a result of this research, a pathogenic model is being established to help physicians and experts better understand and prevent vaccine-induced blood clots now and in the future.
- As COVID-19 variants continue to be cause for concern, researchers at the **University of Toronto** have created chemical compounds that can neutralize the virus that causes COVID-19 and several of its variants. They have also expanded their program to create compounds that target all coronaviruses to safeguard against future pandemics.
- In order to better predict, prevent and respond to emerging infectious diseases, such as COVID-19, researchers at **York University** are developing the One Health Modelling Network for Emerging Infections. One Health will leverage multidisciplinary knowledge to help inform future disease prevention, surveillance and response.

## ● Continuing to support the vaccine roll-out

- Addressing the specific vaccination concerns of a population can help increase vaccine confidence. Students and faculty at **Laurentian University** met with residents in remote communities and workplaces in northern Ontario to address top vaccine questions unique to residents in the north in an effort to increase vaccination rates.

- Accessing accurate vaccine information can be a challenge for at-risk populations. To reduce COVID-19 vaccine hesitancy among residents visiting Toronto shelters, **OCAD University** researchers designed buttons to be worn by physicians that include a QR code leading to a webpage with answers to top vaccine questions.
- Digital communication can help physicians reach more patients and increase awareness of the COVID-19 vaccine. Physicians at the **University of Ottawa** are leveraging email and text message to share evidence-based resources with patients in an effort to help mitigate vaccine hesitancy and address key concerns and barriers.
- To help increase access to COVID-19 vaccinations and the province's vaccination rate, the **University of Windsor** is offering on-campus clinics that do not require residents to have a health card on-hand and is providing free parking in all clinic lots to remove barriers to getting the jab.



## ● Supporting community access to health care

- Knowing when and how to assist youth experiencing a mental health crisis could save lives. Researchers at **Nipissing University** developed an artificial intelligence powered smartphone software for police officers that uses algorithms to assess risk and behavioural levels and connects police with community partners to help streamline care.

- The COVID-19 pandemic increased mental health challenges in communities across the province. Researchers at **Ontario Tech University** designed a free digital peer-support chatbot powered by artificial intelligence that helps users foster empathy by anonymously sharing their pandemic struggles with others.
- To help advance teaching, research and innovation around aging and long-term care, **Trent University** is working with a retirement home company to build a university-integrated Seniors Village. The Village will offer students hands-on learning opportunities and provide an additional housing option for seniors in the community.
- Existing methods of glucose testing can be painful. Researchers at the **University of Waterloo** are leveraging nanomaterials to develop a less invasive and more effective method of glucose monitoring. This method will test saliva instead of blood and provide more accurate results through the detection of smaller amounts of glucose.

"Ontario's universities produced the scientists, public health professionals, and policy advisors that are on the front lines in the battle against the COVID-19 pandemic. Ontario's universities will continue to play a role in our ability to tackle complex, cross-sectoral issues, be they future pandemics, poverty and food insecurity, the consequences of climate change or the development of new energy systems. These issues necessitate the kind of engagement across disciplinary boundaries that universities make possible."

– Research provided by the Business+Higher Education Roundtable (BHER), Nov. 2021

