

COVID-19 and the Future of Health Research and Innovation



Roundtable Report

On May 28th, 2020, Shift Health, in collaboration with Life Sciences Ontario, convened a diverse panel of leaders to discuss what COVID-19 is teaching us and how we can prepare our health research and innovation ecosystem for a resilient, productive and impactful future. Over 250 people across the globe joined this virtual roundtable. You can view the video [here](#) and read the full report [here](#).

COVID-19 is altering—perhaps irreversibly—the health research and innovation ecosystem, compressing into mere weeks structural and system-level adaptations that might otherwise have evolved over years, if not generations. COVID-19 is also proving that our research and innovation system has the potential

to perform with far greater agility, alacrity and ambition, inviting reimagination of the rules, conventions and practices that will guide us into the future. Five phenomena (see figure below) will have long-term implications on health research and innovation.

COVID-19 is shaping and sharpening our perspective on the future of health research and innovation by showing us what's possible when we put a 'wartime' mindset into action.

Dr. Ryan Wiley
Shift Health

The end of the beginning of health digitalization



By unleashing the power of data and digital tools, the COVID-19 crisis is setting the stage for a futureproofed data ecosystem that will dramatically enhance the long-term productivity, agility and impact of health research and innovation.

Regulations and practices at the intersection of safety, quality and speed



As COVID-19 inspires adaptation of regulations and practices that enable research, development and adoption of innovation, we can examine and approaches that both preserve the highest standards and accelerate science and innovation.

Nimble and intrepid collaborative models designed for the urgent pace of innovation



The unprecedented level of collaboration across sectors, jurisdictions and even competitors has created a context for reconsidering models of collaboration in research and innovation, and reflecting on how we create value together in the future.

Public trust and accountability propelling citizen-engaged science

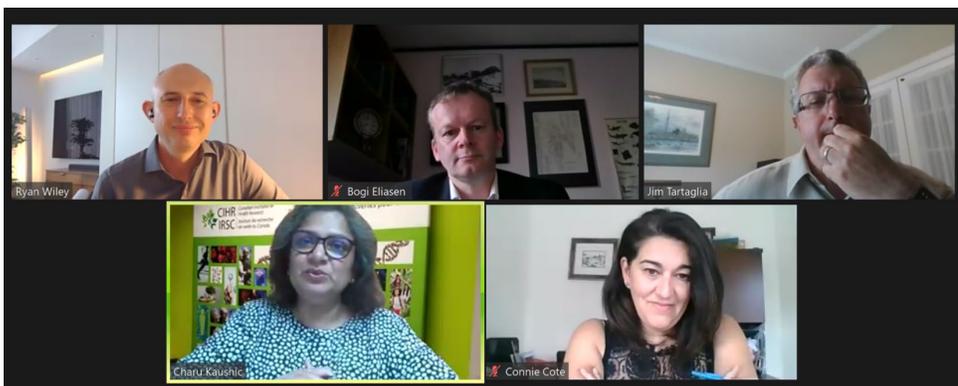


COVID-19 is altering the public's appreciation for, science, creating an opportunity to reinvigorate the relationship between the public and the scientific establishment, awaken science literacy and restore our collective faith in fact.

Focus on the global interconnectedness of science, innovation and human health



COVID-19 has cast a spotlight on tension between the global imperatives of health innovation and the globalization risks that fuel protectionism. While our connectivity may have contributed to the pandemic, it will also be fundamental to resolving it.



We are grateful to the panel of experts who joined us. Clockwise from top-left: *Dr. Ryan Wiley*, President, Shift Health; *Bogi Eliassen*, Director of Health, Copenhagen Institute for Futures Studies; *Dr. Jim Tartaglia*, Vice-President R&D, Global Head of Projects, Sanofi Pasteur; *Connie Côté*, Chief Executive Officer, Health Charities Coalition of Canada; *Dr. Charu Kaushic*, Scientific Director, CIHR's Institute of Infection and Immunity

How is COVID-19 shaping the future of health research and innovation?

COVID-19 IS STRENGTHENING OUR RELATIONSHIP WITH DATA AND DIGITAL TOOLS.

COVID-19 is presenting a rare opportunity to enhance our capacity to share and use data to drive decision-making. History tells us that we only use a fraction of the data we produce and that sustaining a commitment to data sharing is a challenge that requires focus and determination.

COVID-19 has and will sustain pressure on healthcare budgets and the pricing of pharmaceutical products. Pharmaceutical companies are therefore likely to seek smarter—and more efficient—ways of generating evidence for product development in the future. They will look to machine learning, AI and real-world data to facilitate process and clinical development and to improve the analytics that underpin decisions related to speed, efficiency and cost. Ensuring a sustained commitment to healthcare digitalization requires us to improve data quality, enhance digital and biological literacy among the public and policymakers and make the use of data in decision-making the standard.



I see progress, opportunity from COVID-19, but lasting change is not inevitable. It will require the will to make decisions to maximize the use of data and enforcement of these decisions.

*Bogi Eliassen
Copenhagen Institute for Futures Studies*

COVID-19 HAS TESTED THE RESEARCH COMMUNITY'S AGILITY, RESILIENCE AND RESPONSIVENESS.

The scientific community has responded to the COVID-19 pandemic with speed, agility, and generosity. In less than six weeks, CIHR, in collaboration with other federal funding agencies, was able to

announce and fund nearly 100 novel research projects and deploy \$54.2M of new money to support research. Demonstrating the resiliency and adaptability of the health research community, over 1,000 national and international researchers volunteered to be peer reviewers and the first round of open competition yielded nearly 1,500 applications.

Though the response from the scientific research community has been tremendous the compressed timelines for submitting research proposals may have created conditions that favour more tenured researchers with pre-established expansive networks, while disadvantaging women and early career investigators. Sustaining progress that has been made in equity, diversity and inclusion in the scientific community—and maximizing research productivity and excellence—will require a balance between the opportunity to embed speed and agility, with the need to ensure science benefits fully from Canada's diverse pool of talent.



We never anticipated this level of response; people are very resilient and adaptable... There has never been a better time for us all to advocate for increased research funding.

*Dr. Charu Kaushic
Institute of Infection & Immunity, CIHR*

COVID-19 PROVIDES AN OPPORTUNITY TO LOOK AT WHAT HAS PREVIOUSLY SLOWED MEDICAL INNOVATION.

In response to COVID-19 there has been an unprecedented amount of information, data, reagents, and resources shared to support vaccine development. The pandemic also presents an important opportunity to assess the broader R&D and regulatory landscape and to identify bottlenecks and/or steps that don't add value in terms of evidence generation, ensuring safety and optimizing efficacy. Harmonizing global regulatory processes is a notable opportunity to accelerate access to new products through the standardization or development of master protocols that are vetted by regulators.



We need to be entrepreneurial in managing portfolios/products, leveraging AI, machine learning and real-world data to progress as quickly as possible.

*Dr. Jim Tartaglia
Sanofi Pasteur*

THE FUNDING ENVIRONMENT WILL NEED TO TACKLE THE CHALLENGE OF ADVANCING WORK ON COVID-19 WITHOUT NEGLECTING OTHER HEALTH PRIORITIES.

COVID-19 has placed great pressure on the health research ecosystem, driving many scientists to redirect their research to COVID-19 or risk temporarily shutting down their lab. It has also severely reduced the financial capacity of health charities and NGOs to support research. Sustaining Canada's health research ecosystem will require greater investment and availability of funds for diverse health research priorities, increased coordination of international health research efforts to minimize redundancies, an emphasis on team science to tackle complex scientific questions and availability of platforms (e.g. vaccine manufacturing, coordinated clinical trials) that can provide infrastructure and research capabilities of value to a wide range of disciplines.

THE RESPONSE TO COVID-19 HAS UNDERSCORED THE IMPORTANCE OF COLLABORATION IN MANAGING RISK AND FILLING PRODUCT DEVELOPMENT GAPS.

COVID-19 has exposed the critical importance of collaboration across sectors (e.g. academia, governmental agencies, NGOs), stakeholders (e.g. regulatory agencies, CROs, CMOs, healthcare system) and event competitors for an effective pandemic response. As private sector players prepare to scale-up products for the prevention and treatment of COVID-19, strategic partnerships provide a powerful mechanism for managing and sharing risk. Partnerships will also be critically important in addressing gaps in product development (e.g. fill finish capacity). Coming out of this crisis there will be a need for a more global effort to assess these gaps and detrimental risks in product development and how we can better partner to address these.

IN COVID-19 AND BEYOND, PATIENTS CONTINUE TO CALL FOR GREATER ENGAGEMENT IN HEALTH RESEARCH.

Although patients are the most directly impacted by COVID-19, the speed of the pandemic response has made it difficult to optimize patient engagement. Patients are eager to understand how the disease is impacting their health and how to prepare to manage their health in the context of COVID-19. We must therefore pursue opportunities to engage patients—especially those with lived experience of COVID-19—from design through implementation of research studies.



NOW IS THE TIME TO CREATE A CITIZEN-ENGAGED RESEARCH MODEL THAT IS MORE ACCOUNTABLE, MORE PRODUCTIVE AND MORE EQUITABLE.

Worldwide, the public has never been more engaged—actively and in real-time—with science. This interest will translate into a demand for accountability and transparency in the future. The public will expect major health research investment decisions to be based on relevance and potential impact to the world. Nevertheless, science and innovation have historically focused on the needs of wealthy populations and there will be an expectation that science and innovation meet the

needs of populations that have traditionally been underserved.

We need to advance science, health research and innovation in a way that benefits all people.

Bogi Eliassen

Copenhagen Institute for Futures Studies

COVID-19 has demonstrated our ability to work together in crisis. We want to continue doing that in the future and continue to involve patients when doing so.

Connie Côté

Health Charities Coalition of Canada

CREATING THE FUTURE

Preparing our health research and innovation ecosystem for a resilient, productive and impactful future will require us to:

1. Learn and do better for the future of health research and innovation.
2. Reinvigorate investments in health research and innovation to create the best system possible.
3. Shape the 'new normal' with unprecedented courage, creativity and collaboration.

The moment is now. We have a generational opportunity to create this future together.

Shift Health brings a science mindset to strategy consulting for the health research and innovation ecosystem. To connect with one of our consultants please visit shifthealth.com.