

Invigorating the Biopharmaceutical Sector's Contribution to Canada's Health Research and Innovation Ecosystem

Report of Research Canada's Expert Advisory Panel
Executive Summary

23 April 2021



“I am happy to participate in an historic opportunity to turn our exceptional collective expertise in science and health policy into a world leading health research and innovation ecosystem that maximizes global social, economic and health impacts. It is essential that we make the most of this moment to secure Canada’s future.”

—Dr. Pierre-Gerlier Forest

The pandemic has reminded us of the importance of a strong health research and innovation ecosystem—and laid bare the weaknesses we must address.

Pan-Canadian, trans-sectoral partnerships are enhancing our ability to understand COVID-19, inform decision-making and build capacity for future pandemics.

Funding for trans-sectoral, multidisciplinary research has accelerated the development of diagnostics, therapeutics, vaccines and digital health solutions.

But...

Years of decline in Canada's biomanufacturing base has constrained our ability to produce homegrown vaccines for clinical testing, as well as approved global vaccines.

Interruption of clinical trials over the past year has compromised patients' access to innovation and the viability of hospital-based research operations.

Canada's health research and innovation ecosystem can achieve remarkable speed, productivity and impact when stakeholders work together as a united community. But the trans-sector partnerships that sustain our ecosystem cannot be taken for granted. If a vibrant health research and innovation ecosystem is to be a cornerstone of our post-pandemic future, we have an opportunity to invest in and strengthen the partnerships essential to our resilience and impact.

There is a gap in our understanding of the role of biopharmaceutical industry partnerships within our health research and innovation ecosystem.

- Biopharmaceutical policies, including planned amendments to Canada’s pricing regulations, have triggered questions and unease across the health research and innovation ecosystem—but limited consensus.
- There is concern that biopharmaceutical policy discourse has become polarized, eroded trust and distracted us from the bigger picture: ***impactful health research and innovation happen in an ecosystem.***
- We believe that our collective success must begin with a better understanding of the integrated connections, interdependencies and multi-sector alliances, including those with the biopharmaceutical industry, that empower our ecosystem to advance research and develop innovative health solutions.

Realizing the full health, social and economic potential of Canada’s health research and innovation ecosystem—our academic institutions, research hospitals, networks, incubators, start-ups, bioscience companies, investors, health charities and patient groups—and ensuring a more prepared, resilient and sustainable ecosystem in the future requires a strong, active and engaged biopharmaceutical sector.

“Life sciences companies don’t reduce their decision to invest, remain and grow in Canada to a single policy or incentive. They consider the vitality of the ecosystem as a whole.”

—Dr. Scott Halperin

Research Canada convened an Expert Advisory Panel to close gaps in our understanding of biopharmaceutical partnerships across the ecosystem.

Overseeing an independent study supported by Shift Health, the Panel appraised the evidence, applied their experience, and aligned on a consensus-based description of the role and value—both actual and aspirational—of Canada’s biopharmaceutical sector.



Dr. Rose Goldstein
Professor of Medicine and
Former Vice-Principal of
Research and Innovation,
McGill University
Chair, Research Canada

Expert Advisory Panel Chair



Dr. Elizabeth Douville
Co-Founder and Managing
Partner, AmorChem
Chair, Genome Canada



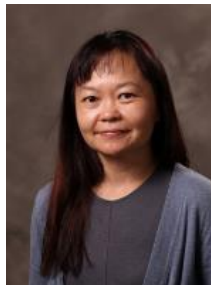
Dr. Pierre-Gerlier Forest
Director, School of Public
Policy, University of Calgary



Dr. Scott Halperin
Director, Canadian Center for
Vaccinology



Jacques Hendlisz
Executive President, CATALIS
Québec



Sue Mack-Klinger
Program Head, Pharmacy
Technician Program,
Saskatchewan Polytechnic



Gordon McCauley
President and CEO, adMare
BioInnovations



Dr. Catharine Whiteside
Former Dean of Medicine and
Vice Provost, Relations with
Health Care Institutions,
University of Toronto



Dr. Bradly Wouters
Executive VP Science and
Research, UHN

The biopharmaceutical sector plays a unique and irreplaceable role in a functional health research and innovation ecosystem.



Contributes to basic and applied biomedical research at universities and institutes across Canada



Helps academic health sciences centres drive drug discovery, enhance clinical services and improve patient outcomes



Fuels the innovation pipeline and enhances the success of homegrown Canadian enterprises



Develops talent by employing highly-skilled personnel and training the next generation of life sciences leaders



Spearheads initiatives aimed at preparing the health system for 21st-century innovations

We need to encourage much greater industry engagement if Canada is going to be able to meet the health challenges and crises we face today and will experience in the future.

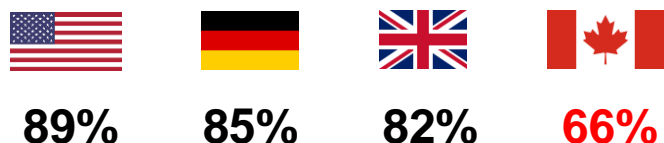
“The innovation model is changing—increasingly dependent on transdisciplinary, trans-sector sharing of ideas, data and resources. If Canada is to be at the forefront of 21st century innovations that benefit patients, we need to create an environment in which partnerships across our ecosystem, including the biopharmaceutical industry, can flourish.”

—Dr. Catharine Whiteside

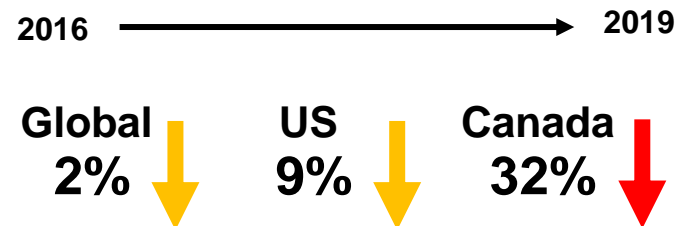
Persistent weaknesses in our partnership are handicapping the competitiveness of our ecosystem.

Weaknesses in our partnership with the biopharmaceutical industry are compromising our ability to deliver innovations to patients.

Proportion of New Active Substances Launched (2000-2019)



Industry-sponsored clinical trial activity in Canada has decreased more rapidly than in other jurisdictions, impacting early patient access to medicines.



The environment for global pharmaceutical companies reflects broader industrial, capital and structural barriers for homegrown companies.

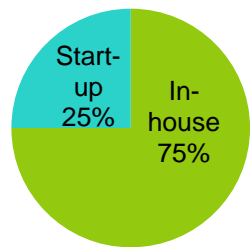
Canada's system of R&D incentives terminates support "at the exact instant when Canadian firms are demonstrating the greatest growth potential by going public or attracting foreign direct investment... and further accentuates gravitational forces to move head offices and R&D activities outside of Canada."

—Canada's Health and Biosciences Economic Strategy Table

Our approach to biopharmaceutical policy, regulation and adoption must reflect a holistic view of how our ecosystem functions to invigorate our relationship with the sector and elevate our global competitiveness.

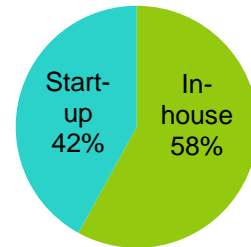
Shifts in biopharmaceutical innovation are amplifying the imperative of industry partnership with patients, academia, biotech and our health system.

The globalization of pharmaceutical innovation and shift to extramural R&D underscores the importance of leveraging Canada's scientific advantages to satisfy industry's need for partnerships.



2010

Fraction of new molecular entities developed by big pharma¹ in-house vs. through partnership



2018

We are entering an era of personalized healthcare—in which new pharmaceuticals are less one-size-fits-all and more reflective of the biology, circumstances and choices of individual patients.

This transformation requires:

- ◆ Interdisciplinary collaboration (e.g. genomics, data sciences, ethics, social determinants of health).
- ◆ Multi-sector, multi-stakeholder partnerships that enable accountable, responsible sharing of health data.
- ◆ Greater partnership with the public and patients.

Canada must take an active, strategic approach to invigorating our relationship with the biopharmaceutical sector to ensure that we are helping to shape the innovation agenda.

“Access to innovative medicines is a healthcare right and expectation of all people living in Canada. Finding an appropriate balance across the many levers that control our ability to deliver innovative, life-saving medicines is vital to our health and economic security.”

—Sue Mack-Klinger

We have an opportunity to chart a new path and invigorate a new spirit of partnership. We are calling for change, not a return to the status quo.

If we are to position our health research and innovation ecosystem for a powerful post-pandemic future, we need to cultivate an ambitious, futureproofed policy and investment environment that supports our ecosystem as a whole and positions Canada for sustainability, growth and leadership. We need an environment that:

- ◆ Enables the critical role of the biopharmaceutical sector in advancing collaborative R&D in Canada;
- ◆ Enlarges Canada's share of global biopharmaceutical sector investment in infrastructure, research, training and jobs;
- ◆ Expands and diversifies opportunities for training and employing, attracting and retaining highly-qualified personnel;
- ◆ Accelerates the translation, commercialization and adoption of home-grown innovations; and
- ◆ Fulfills the potential of our investments by ensuring health research and innovation enabled healthcare.

While Canada has a strong foundation for partnership—and many examples of success—we need to ensure that our policy and investment environment makes trans-sectoral partnership the expectation, not the exception.

We must seize the moment to strengthen trans-sectoral, transdisciplinary partnerships essential to Canada's health security and economic resilience.

We cannot afford a siloed approach to policymaking that divorces health system sustainability from economic growth.

As we look to the future, we need an integrated, pan-sector strategy that connects the dots, strengthens partnerships, and maximizes the contribution of health research and innovation to Canada's health security and economic prosperity.

“The health research and innovation ecosystem depends on a complex network of policies and partnerships. As we look to the future, Canada needs an integrated, pan-sector strategy to maximize the contribution of our ecosystem to Canada’s health security and economic prosperity.”

—Dr. Rose Goldstein

Research Canada
17 York Street, Suite 401
Ottawa, Ontario K1N 5S7
Canada

www.rc-rc.ca

Shift Health®
162 Cumberland Street, Suite 310
Toronto, Ontario M5R 3N5
Canada

www.shifthealth.com

