



Written Submission: Pre-Budget Consultations in Advance of the 2021 Federal Budget

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Recommendations:

1. STEMCELL Technologies recommends that the Government of Canada invest in securing a domestic supply chain for all components required for diagnostic testing of infectious diseases.

COVID-19 has exposed significant vulnerabilities in the supply chains and manufacturing capabilities of countries around the world – Canada is no exception.

As geopolitical realities continue to evolve at unprecedented rates, the need for the Government of Canada to secure domestic solutions to critical problems threatening the health, safety and security of its citizens becomes of paramount urgency. We must secure sovereignty over our country's pandemic response.

In the aftermath of the SARS outbreak, a 2003 report of the National Advisory Committee on SARS and Public Health found that “the SARS experience illustrated that Canada is not adequately prepared to deal with a true pandemic.” Ontario, specifically, “could not have withstood two simultaneous large-scale outbreaks or crises such as SARS.” Other provinces, the Advisory Committee found, were no better off – and the federal government's capacity to support was low.¹

While Canada has made significant investments in public health infrastructure in the years since SARS, COVID-19 has shown us that we have a long way to go. We do not have the ability to respond to a large-scale infectious disease outbreak without life-threatening supply and infrastructure challenges. This should change.

Securing the Domestic Supply Chain

Over the last several months, leaders around the world have quickly come to understand that a global pandemic cannot be fought without expansive testing capabilities.

Broad, rapid access to diagnostic testing is vital for disease monitoring and control, and rapid public health response. It is also a key prerequisite for any decision to ease government-imposed lockdowns. In a global pandemic, the economy simply cannot function without robust testing.

As extensive testing is the foundational basis of pandemic management, Canada needs the security of having its own reliable testing capabilities. Certain components of diagnostic testing kits – particularly chemical reagents – have been in short supply in the highly competitive and strained global market, threatening Canada's ability to test at the frequency required to control the virus while slowly re-opening the economy.

A recent report by McKinsey and Company shows that the global manufacturing capacity for molecular-assay tests is estimated to be between 37 and 38 million tests per week, given the current availability of the various test components. However, fewer than 10 million tests per

¹ “Learning from SARS: Renewal of Public Health in Canada” A Report of the National Advisory Committee on SARS and Public Health.

<https://www.canada.ca/content/dam/phac-aspc/migration/phac-aspc/publicat/sars-sras/pdf/sars-e.pdf>

week are actually being conducted around the world. As a possible explanation for this gap, the McKinsey report points out that nearly 90% of key components for these tests are manufactured in China, potentially complicating access by other countries.² The global community is learning, first-hand, the dangerous downside of relying on global supply chains for critical goods and medical response measures.

In response to this, **we recommend the Government of Canada invest in securing a domestic supply chain for the components required for diagnostic testing of infectious diseases.** This will ensure the country can, in the event of a future infectious disease outbreak, produce diagnostic testing reagents quickly at scale when needed.

The Need for Facilitating Broad, Rapid Testing

According to a recent report from Harvard University, the United States will need to conduct between 5 and 20 million daily tests in order to fully re-mobilize the economy post-COVID-19.³ Five million daily tests in the United States, when adjusted for Canada's lower population, is equivalent for nearly 600,000 tests a day. This is more than fifteen times Canada's current rate.⁴

Even at the current, relatively-reduced rate, officials responsible for testing on the ground in Canada's provinces and territories are experiencing severe shortages of testing supplies, particularly chemical reagents. These shortages are expected to be exacerbated by the upcoming fall flu season, which will see an influx of Canadians worried about having COVID-19, and therefore, requesting a diagnostic test. The testing challenges emerging from COVID-19 should serve as a warning sign for future infectious disease outbreaks.

It is critical that Canada be prepared to – on a moments' notice – conduct expansive, rapid testing of any future infectious disease outbreak. This means having unfettered access to all required components of diagnostic test kits. In order to eliminate our reliance on international suppliers for these critical components, we must invest in securing the domestic supply chains for these items.

Ramp Up Domestic Production

² "COVID-19: Overcoming supply shortages for diagnostic testing". A report by McKinsey & Company.

<https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/covid-19-overcoming-supply-shortages-for-diagnostic-testing>

³ Roadmap to Pandemic Resilience: Massive Scale Testing, Tracing, and Supported Isolation (TTSI) as the Path to Pandemic Resilience for a Free Society. Edmond J. Safra Center for Ethics at Harvard University.

https://ethics.harvard.edu/files/center-for-ethics/files/roadmaptopandemicresilience_updated_4.20.20_1.pdf

⁴ Current PHAC data as of July 30, 2020 -

<https://www.canada.ca/en/public-health/news/2020/07/statement-from-the-chief-public-health-officer-of-canada-on-july-30-2020.html>

The re-tooling efforts to support domestic needs for COVID-19-related medical supplies, including ventilators, masks, gowns, and hand sanitizer, have been a tremendous display of Canadian cooperation and self-sufficiency. Unfortunately, the capacities of these traditional manufacturing companies, alcohol distillers, and clothing factories only go so far. The highly-specialized facilities, tools, and expertise required to manufacture chemical reagents cannot be produced on a whim.

This means having domestic biopharmaceutical manufacturing facilities built and ready to go, able to rapidly scale up production of specific chemical reagents in an emergency situation. A traditional manufacturing company would be unable to fulfill this need, as staff and facilities would sit idle for years, except in the case of an emergency. Partnering with a company with a profitable business model and large workforce in non-pandemic times is the only solution to this volatility.

Not only would such partnership be securing a domestic supply chain, it would be providing high-skilled jobs to Canadians in the interim – securing a workforce that is able to, at a moments' notice, mobilize and shift their duties to conduct highly-specialized scientific manufacturing and research.

A Solution: Partnership with STEMCELL Technologies

As Canada's largest biotech company, STEMCELL Technologies is well-positioned to partner with the Government of Canada to provide a fully integrated, domestic supply chain for the manufacture of diagnostic testing reagents needed to control COVID-19 and future pandemics.

STEMCELL, with an average of 20% annual growth over the last 27 years and sales revenues of \$250 million, is the only Canadian company with the capabilities to take on this large-scale partnership while still remaining a viable business model in the non-pandemic times.

STEMCELL is a highly research-oriented company that invests 15% of its annual revenues into research and development (R&D). By continuing to make industrial biomedical R&D a key business priority, STEMCELL will stay on the cutting edge of science, able to respond to inevitable changes in the way diagnostic testing is conducted from one virus to another.

About STEMCELL Technologies

STEMCELL Technologies, headquartered in Vancouver, is Canada's largest biotechnology company, with over 1,500 employees and year-on-year growth of approximately 20% for the last 26 years. STEMCELL supports life sciences research around the world with more than 2,500 specialized reagents, tools, and services. STEMCELL produces and exports cutting edge Canadian technology and educational resources that are used by scientists advancing the stem cell, immunology, cancer, regenerative medicine, microbiology, and cellular therapy fields.



As a global leader in regenerative medicine and cell biology, STEMCELL is well-positioned to become the country's primary manufacturer of products that facilitate the diagnosis and treatment of COVID-19 and related infectious diseases.