



CANADA'S ECONOMIC STRATEGY TABLES

# Health and Biosciences

The sector today  
and opportunities  
for tomorrow

INTERIM REPORT

# HB





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Budget 2017 proposed the establishment of six Economic Strategy Tables to **lead the creation of Canada's economic growth strategies**. Working with leading Canadian innovators, Innovation, Science and Economic Development Canada has now established the Economic Strategy Tables to identify growth opportunities in advanced manufacturing, agri-food, clean technology, digital industries, health/biosciences and clean resources.

Canada's economic growth is expected to continue at a moderate pace, potentially impacting Canadians' standard of living. The Economic Strategy Tables will galvanize stakeholders in six high impact sectors by setting ambitious growth targets, identifying sector-specific bottlenecks to growth, recommending specific strategies to achieve the targets, drive long-term and sustainable economic growth, and create high quality jobs for Canadians. The Tables will also help guide the Government of Canada in its efforts to provide relevant and effective programs for Canada's innovators.

Long term sector specific action plans to meet ambitious economic growth targets for 2025 and beyond across six sectors where Canada is globally competitive will include:

- A common vision for both industry and government that sets the course for moving forward to identify sector strengths, overcome obstacles, and improve competitiveness and growth;
- Business-led solutions, government policy recommendations and public-private partnerships based on short-, medium- and long-term actionable areas;

- Greater inclusion of those traditionally underrepresented in the workforce, such as Indigenous Peoples, women, Canadians with disabilities and older workers, in these sectors; and
- A mechanism to champion and monitor sector growth strategies and results.

Each Table is chaired by an industry leader who drives the agenda of the Table and facilitates candid discussion. The Chairs of each Table also meet to take stock of progress and address key horizontal issues affecting all sector tables.

The sectors under the Economic Strategy Table Initiative have strong potential for innovation, growth and the creation of good, middle class jobs for all Canadians, including currently untapped pools of talent. They also face powerful forces of competition that demand action now to build on their strength and secure a place in the global economy.

Taking a sector-wide approach and sharing best practices will speed up and spread out the adoption of innovations, making sectors stronger on the whole. This will help make Canada's economy be more resilient, better able to weather market cycles, and will help cement our world leadership where we excel.

*“Canada needs to unlock the full potential of its innovations and accelerate the pace of commercialization to ensure a sustainable globally competitive health ecosystem with a robust innovation economy and improved health outcomes.”*

Karimah Es Sabar  
CEO and Partner, Quark Venture

## THE HEALTH AND BIOSCIENCES SECTOR TODAY

The health and biosciences sector encompasses a wide range of companies, from the developers and manufacturers of pharmaceuticals, medical devices and biomedical innovations, to producers of digital health solutions and disruptive technologies such as artificial intelligence (AI), big data analytics, 3D printing, robotics and nanotechnologies.

### AT A GLANCE

#### HEALTH AND BIOSCIENCES IS A SIGNIFICANT CONTRIBUTOR TO CANADA'S ECONOMY

- Health and biosciences industry contributed \$7.8 billion (0.45%) to Canada's annual GDP in 2016 as part of the broader health care ecosystem<sup>1</sup> that represented 11% of Canada's annual GDP.<sup>2</sup>

#### HEALTH AND BIOSCIENCES MARKETS ARE POISED FOR GROWTH

- Digital health = \$233 billion by 2020<sup>3</sup>
- Brand and generic drugs = \$1.5 trillion by 2021<sup>4</sup>
- Precision medicine = \$88 billion by 2023<sup>5</sup>
- Other areas for potential growth include artificial intelligence, smart medical devices, robotics and big data solutions

#### CANADA HAS MANY STRENGTHS

- Home to schools with top medical, and biomedical and software and computer engineering studies.
- Has emerging innovation clusters of universities, entrepreneurs, researchers and capital in regenerative medicine, oncology, infectious diseases, metabolic diseases, neurodegeneration, genomics and personalized medicine
- Is recognized worldwide for high-quality life sciences and health care solutions and public health care system
- Has attracted major AI investments and partnerships with leading firms like IBM, Facebook, Google, Microsoft, Samsung and Intel

1 Health care ecosystem includes: public and private spending on hospitals, health care professionals, other institutions, administration, and drugs.

2 ISED internal analysis; Statistics Canada & Conference Board of Canada (2011, chained to 2007\$)

3 Deloitte – 2016 Global life sciences outlook: Moving forward with cautious optimism

4 Quintiles IMS Institute – Outlook for Global Medicines through 2021: Balancing Cost and Value

5 Deloitte – The Future Awakens: Life sciences and health care predictions 2022

### **CANADA RANKS HIGHLY GLOBALLY IN KEY AREAS**

- #3 for quality and influence of stem cell and regenerative medicine research<sup>6</sup>
- #4 for highly cited metabolic disorder publications<sup>7</sup>
- #6 for highly cited oncology publications<sup>8</sup>
- #6 for clinical trial quality, expertise and ability to conduct complex studies<sup>9</sup>

### **CANADA FACES COST PRESSURES**

- The country's health care expenditures — per capita and as a percentage of GDP<sup>10</sup> — are on the rise but that spending isn't improving key performance indicators as Canada ranks 9<sup>th</sup> out of 11 countries on indicators of quality, efficiency and performance in health care<sup>11</sup>

6 KPMG – Following Through: Realizing the Promise of Stem Cells

7 [Webofscience.com](http://Webofscience.com)

8 Ibid

9 [Clinicaltrials.gov](http://Clinicaltrials.gov)

10 OECD health care expenditure and financing

11 Mirror, Mirror 2017: International Comparison Reflects Flaws and Opportunities for Better U.S. Health Care

## PRIORITY THEMES

To enable Canada to be a global leader and hub of activity with improved performance in health care, Canada's Health and Biosciences Table has identified the following priority themes:

### 1. INCREASING ACCESS TO CAPITAL AND GROWING CANADIAN FIRMS

Canada's health and biosciences innovation ecosystem tends to succeed at producing start-up companies, but those companies often lack access to the capital they need to grow. As a result, many tend to be acquired by foreign entities instead of maturing on their own in Canada. To address this, Canada needs to diversify its pool of seed and early-stage venture capital firms and increase the availability of later-stage private equity funds. As a first step, Table members have committed to exploring the gaps in access to capital by firms.

### 2. ENABLING INNOVATIVE PROCUREMENT, TECHNOLOGY ADOPTION AND COMMERCIALIZATION

Canadians' health and the Canadian economy both stand to benefit from homegrown health and bioscience innovations getting out of the lab and into the marketplace. To realize these benefits, as a first step, Canada needs to strongly support the commercialization and accelerate the adoption of promising new technologies. However, a complex regulatory environment and a set of fragmented procurement processes in Canada's health care systems pose unique challenges and adoption at scale across Canada. The Table has committed to exploring international, national and provincial perspectives and best practices in areas including intellectual property, regulations and innovative procurement to enable the adoption and commercialization of technologies in Canada's health care system.

<sup>12</sup> Canada Health Infoway

<sup>13</sup> Canada Health Infoway. *Big Data Analytics and Health White Paper*. 2013.

<sup>14</sup> Canadian Occupational Projection System

### 3. STRENGTHENING THE HEALTH SYSTEM WITH TECHNOLOGY

Digital and other technologies can help make the health system more efficient, effective and sustainable — while contributing to economic growth. Digital health systems could catalyze a \$408 million boost in economic productivity,<sup>12</sup> while better use of data and analytics could save the health system \$10 billion a year through better clinical decisions, personalized care and new research.<sup>13</sup> To strengthen the health system, Canada needs to progress in adopting digital health technologies, in which it lags behind other comparable countries. Table members are exploring lessons learned, including best practices, for implementing information systems of complete patient and citizen health care information.

### 4. ENSURING THE RIGHT SKILLS AND TALENT ARE AVAILABLE

Skilled labour is essential to the growth of the sector — yet skills shortages are expected to be one of the biggest challenges faced over the next three to five years. This extends to the executive level, as leaders are often lured away from Canada to other markets. Overall, job openings for life science professionals are projected to exceed the labour supply from 2015–2024.<sup>14</sup> Meeting demand will require greater employment of traditionally underrepresented groups including women, who held just under a quarter of professional scientific occupations in 2015. The Table has set out to examine, through the use of available data, current and future skills needs, educational training needs, and attracting, growing and retaining homegrown and international talent, with a deep understanding of achieving diversity and gender parity.



## WHAT'S NEXT

With this release of interim reports, Tables will: work on establishing a vision and aspirational, top-down targets for long-term sectoral growth; integrate sectors' action-oriented proposals into one comprehensive report; develop an action plan that includes short-term early deliverables and long-term initiatives; and identify performance indicators to track and measure results.

Ongoing consultations and transparency are key components of the Economic Strategy Tables. Canadians are invited to share their answers via the following email: [ic.est-tsse.ic@gc.ca](mailto:ic.est-tsse.ic@gc.ca).

- What is your aspirational vision for your sector? What would success look like in 2025?
- It is often suggested that countries need to target their growth efforts toward areas of competitive advantage. In your sector, where does Canada have strength or emerging strength?
- What are the obstacles to innovation in your sector? (You may wish to think about investment, talent and skills, access to markets, rules or regulations, or demand.) How could these be overcome?
- What is, or will be, the most significant innovation globally in your sector for the next 10 years? What is needed to capitalize on this innovation and establish Canada as a world leader?
- To ensure that all Canadians benefit from accelerated economic growth, what actions and partnerships could governments, businesses, educational institutions and Canadians undertake?

To support a transparent process, Table minutes are posted at <http://www.ic.gc.ca/eic/site/098.nsf/eng/home>.

## HEALTH AND BIOSCIENCES ECONOMIC STRATEGY TABLE MEMBERS

### Chair

Karimah Es Sabar, Quark Venture

### Members

Armen Bakirtzian, Intellijoint Surgical Inc.

Norma K. Biln, Augurex Life Sciences Corp.

Josh Blair, Telus Health

Jennifer Chan, Merck Canada

Ed Dybka, AstraZeneca Canada Inc.

Neil Fraser, Medtronic Canada

Chris Gardner, SequenceBio

Niels Erik Hansen, ARXIUM

Huda Idrees, Dot Health

Martin LeBlanc, Caprion Biosciences Inc.

Rick Makos, PHEMI Systems

Andrea Palmer, Awake Labs

Cameron Piron, Synaptive Medical

Oliver Technow, BioVectra

Peter W. Vaughan, Canada Health Infoway

### Federal Representatives

Simon Kennedy, Health Canada

David McGovern, Innovation, Science and Economic Development Canada

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