



[MEDICAL DEVICES]
Canada's competitive advantages

CANADA'S MEDICAL DEVICES SECTOR

Canada's medical devices sector encompasses about 1,500 firms employing 35,000 people¹ and exported over \$1.9 billion worth of medical devices in 2013.² Demographic trends, developments in science and engineering, and changes in care delivery will contribute to the sector's future growth. Canada's medical devices sector is highly diversified, R&D intensive, technology-based and export-oriented; purchasers include hospitals, physician's offices, laboratories, clinics and patients, and firms spend, on average, 12 percent of yearly revenues on development, design and commercialization.³ The industry is primarily based in three provinces—Ontario, Quebec and British Columbia⁴—and its many leading-edge firms produce a broad range of products, notably the Neovasc Reducer and Tiara (Vancouver, British Columbia), Novadaq Technologies imaging systems (Toronto, Ontario), Medtronic CryoCath catheter-based products (Montréal, Quebec), Imaging Dynamics digital-radiography-imaging system (Calgary, Alberta), Epocal handheld blood-analysis systems (Ottawa, Ontario), Baylis Medical radio-frequency puncture systems (Montréal, Quebec and Toronto, Ontario) and MedMira point-of-care diagnostics (Halifax, Nova Scotia).⁵

A WEALTH OF OPPORTUNITIES

In 2012, the global market for medical devices was valued at US\$327.7 billion and the United States spent as much as US\$188.9 billion on medical devices—approximately 36 percent of the global market.⁶ Canada's medical devices market was estimated at \$6.8 billion, ranking it ninth globally. Key business segments of sales in Canada were diagnostic apparatus (25.8%), consumables (15.3%), patient aids (12.3%), orthopaedics and prosthetics (11.9%) and dental products (6.9%). Due to the North American Free Trade Agreement (NAFTA), Canadian-based companies have tariff-free access to the world's biggest market for medical devices. In fact, Canada's largest international market for medical devices is the United States, with export valued at \$1.3 billion, or 64% of Canada's total medical devices exports. Germany, China and the Netherlands constituted the next top destinations for Canadian medical devices.⁷

CANADA'S KEY STRENGTHS IN THE MEDICAL DEVICES INDUSTRY

- Diversified, export-oriented and innovative sector
- Networks of world-class researchers
- Active in the areas of biotechnology, advanced materials, aerospace, microelectronics, telecommunications, software and informatics

¹ MEDEC. *About Our Industry*.

² Industry Canada. *Medical Device Industry Profile, 2013*.

³ Industry Canada.

⁴ MEDEC. *Medical Device History in Canada*.

⁵ BIOTECanada. *Company Developments*.

⁶ Industry Canada. Excludes in vitro diagnostics.

⁷ Industry Canada, *Medical Device Industry Profile, 2013*.

MEDICAL DEVICES CLUSTERS

The Canadian medical devices sector has well-established regional clusters founded on top-notch institutions (universities, research centres), stable public funding of research, highly skilled labour and advanced regulatory standards in line with the U.S. and EU.



WESTERN CANADA

- » British-Columbia, Alberta, Saskatchewan, Manitoba
- » **Leading companies include:** Surgical Specialties Corporation, Response Biomedical Corp., Analogic Canada Corporation, Med BioGene Inc., Verisante Technology Inc., InnerVision Medical Technologies Inc., Innovotech Inc., Innovative Trauma Care Inc., priMED Medical Products Inc., Monteris Medical Inc., Intelligent Hospital Systems Ltd., and Vital Signals Enterprises Inc.

ONTARIO, QUEBEC AND ATLANTIC CANADA

- » **Leading companies include:** Abbott Point of Care Inc., Baylis Medical, Novadaq Technologies Inc., Covalon Technologies Ltd., Nordion Inc., Philips Healthcare, GE Healthcare, Baxter Corporation, Profound Medical Inc., Agfa Healthcare, Roche Diagnostics, Prognomix Inc., Covidien Ltd., Medtronic of Canada Ltd., BioMedica Diagnostics Inc., MedMira Inc., Slanmhor Pharmaceutical Inc., Precision Biologic Inc., and Thorasys Thoracic Medical Systems

RECENT INVESTMENTS

- In 2013, Italian-based Euroclinic established a sales and maintenance facility in Vancouver, British Columbia, expanding its activities in North America.
- In 2013, US-based Zimmer CAS opened new operations in Montréal, Quebec for the production of surgical implants.
- In 2013, Austria-based Croma Pharma, a surgical devices company, established a subsidiary in Oakville, Ontario.
- In 2012, Liechtenstein-based Ivoclar Vivadent AG invested in a headquarters in Mississauga, Ontario, to house all sales, marketing, and distribution departments for its Canadian division.

CANADA'S ADVANTAGES

RESEARCH & DEVELOPMENT ADVANTAGES

Canada combines one of the best R & D tax incentives in the G-7 with increased certainty of eligibility and reduced administrative costs for businesses.

As well, several federal research programs and councils provide funding to support health-related research across Canada, including: the Canadian Institutes for Health Research, the Network of Centres of Excellence, the National Research Council of Canada, and the Natural Sciences and Engineering Research Council.

A LOW COST RESEARCH AND MANUFACTURING BASE

Canada ranks first in the G-7 in terms of cost-effectiveness for the establishment and operation of medical devices manufacturing facilities.⁸ Canada also ranks third in the world for the number of sites for active clinical trials of medical devices.⁹

SKILLED LABOUR POOL AND HORIZONTAL INNOVATION NETWORK

Canada has a world-class higher education system with 22 Canadian universities ranked in the top 500 in the world. Canada's highly skilled labour is as abundant in the R & D side as it is in the technical (trades) side of the medical devices sector, Canada having the highest percentage of individuals achieving at least college or university education among OECD member countries.

The medical devices sector also benefits from close associations and collaborations with other Canadian industries such as biotechnology, advanced materials, microelectronics, software and telecommunications.

LOGISTICS AND MARKET ACCESS BENEFITS

According to the World Bank, Canada has one of the world's best logistics infrastructures. Accordingly, medical devices manufacturers benefit from Canada's highly developed transportation infrastructure and, thanks to the North American Free Trade Agreement, duty-free access to Mexico and to the U.S.—the largest medical devices market in the world.

HUB FOR MEDICAL DEVICES COMMERCIALIZATION

In August 2014, the Government of Canada announced that it will invest \$14.9 million in the Medical Devices Commercialization Centre (MDCC), to be initially located at the University of Ottawa Heart Institute. The centre's mandate will be to help remove roadblocks to commercialization for devices designed and produced in Canada.

"Medtronic remains committed to Canada and looks forward to the evolution of its medical technology strategies and to becoming a trusted partner in delivering innovative health system solutions."

Neil Fraser, President
Medtronic of Canada

⁸ KPMG, Competitive Alternatives 2014 (Mexico, the world's top cost-effective location is not a G7 member)

⁹ U.S. National Institutes of Health; based on number of active sites for medical devices.

SUPPORT PROGRAMS AND INNOVATION

STRONG SUPPORT FOR RESEARCH AND DEVELOPMENT

Canada has a number of R & D clusters to drive and support innovation in the medical device sector, through world-class innovative research conducted in Canadian universities, institutes, technology incubators and hospitals. Some examples include:

- The **National Research Council Canada** which has research facilities across Canada supporting the development of new medical technologies through funding and advisory services;
- The **Medical Image Analysis Laboratory (MIAL)** at Simon Fraser University in British Columbia, focuses on supporting the development of new techniques for image analysis of brain structures;
- The **Centre for Imaging Technology and Commercialization (CIMTEC)**, in London, Ontario, provides technology and business-development services on medical imaging innovations to the marketplace;
- The **Alberta Centre for Advanced Micro- and Nanotechnology Products**, with offices in both Edmonton and Calgary, Alberta, offers clients access to world-class equipment, facilities, expertise and a network of organizations to support micro- and nanotechnology development and manufacturing;
- In Halifax, Nova Scotia, **The Brain Repair Centre** works to discover and develop technology that will prevent, repair and even reverse damage to cells and synaptic connections in the brain.
- The **Montréal Diabetes Research Center** (Montréal, Quebec) aims to coordinate the evaluation and acquisition of, and access to, new technologies to develop better diagnostic tools and treatments for diabetes;
- The **Centre for Contact Lens Research** (Waterloo, Ontario) is where ocular physiology research combines clinical, laboratory, socio-behavioural and packaging strategies in ways that facilitate evidence-based clinical practices; and,
- **Excellence in Clinical Innovation Technology Evaluation (EXCITE)**, a partnership created under the MaRS innovation centre in Toronto, is a multifaceted program that helps companies do pre-market assessment of medical technologies in a clinical setting.

STRONG FINANCIAL SUPPORT FOR HEALTH RESEARCH

In 2012-2013, the Canadian Institutes of Health Research (CIHR), Canada's federal funding agency for health research, comprised 13 Institutes, supported thousands of health researchers across Canada, and provided close to \$650 million in funding.

COMPANY-LEVEL INNOVATION AND FUNDING SUPPORT

The National Research Council Canada's **Industrial Research and Assistance Program (NRC-IRAP)** provides direct technology assistance to small and medium-sized enterprises at all stages of the innovation process, and offers linkages to the best expertise in Canada.

Export Development Canada (EDC) and **Business Development Bank of Canada (BDC)** provide flexible financing programs and solutions tailored to support foreign direct investment in Canada.

INVEST IN CANADA TO ACHIEVE GLOBAL EXCELLENCE

A WELCOMING BUSINESS ENVIRONMENT

Canada is ranked as the best country for business in the G-20.

Source: Forbes and Bloomberg

A HIGHLY EDUCATED WORKFORCE

Canada's workforce is the most highly educated among members of the OECD, with half of its working-age population having a tertiary-level education.

Source: Organisation for Economic Co-operation and Development (OECD)

LOW TAX RATES

Canada's overall marginal effective tax rate on business investment is by far the lowest in the G-7—about 17 percentage points lower than that of the United States.

Source: Department of Finance Canada

COMPETITIVE R & D ENVIRONMENT

Canada offers the lowest business costs in the G-7 for R & D-intensive sectors, with a 15.8 percent cost advantage over the United States.

Source: KPMG

FINANCIAL STABILITY

For six consecutive years, the World Economic Forum has declared Canada's banking system to be the soundest in the world.

Source: World Economic Forum (WEF)

UNPARALLELED MARKET ACCESS

Canada's NAFTA advantage gives investors access to 470 million consumers. Many Canadian production hubs are actually closer to U.S. markets than American production sites—of Canada's 20 largest cities, 17 are within an hour-and-a-half drive of the U.S.

Source: The World Bank

A GREAT PLACE TO INVEST, WORK, AND LIVE

Canada is one of the globally most multicultural countries with world-class universities, a universal health care system and clean and friendly cities in addition to having the second highest standard of living in the G-20, as measured by GDP per capita.

Source: The World Bank

Unless otherwise noted, all values in this publication are in Canadian dollars. Content is based on the latest available information at time of publication.

Cover image: *MicroFlow* apparatus, used by Canadian astronaut Chris Hadfield during a 2013 mission aboard the International Space Station.

Photo courtesy of Institut National d'Optique (INO). This project was carried out by INO in collaboration with the Canadian firms Explora Technologies, Arcane Technologies and Calm Technologies.



FOREIGN AFFAIRS,
TRADE AND DEVELOPMENT CANADA

investincanada.com

Invest in Canada

Foreign Affairs, Trade and Development Canada
111 Sussex Drive, Ottawa, Ontario, K1N 1J1 CANADA

Catalogue number:
FR5-38/10-2013E-PDF

ISBN 978-1-100-23085-6

Winter 2014



Follow us on Twitter! [@invest_canada](https://twitter.com/invest_canada)