The Canadian Institutes of Health Research as Driver for Patient-Oriented Research

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Canadian Institutes of Health Research

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Canada excels in all health research sectors

Source: The State of Science and Technology in Canada, 2012
It is particularly competitive in clinical subfields

Health subfields in which Canada ranks best in the world

<table>
<thead>
<tr>
<th>Sub-field</th>
<th>Field</th>
<th>Impact</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>General &amp; Internal Medicine</td>
<td>Clinical Medicine</td>
<td>3.93</td>
<td>1</td>
</tr>
<tr>
<td>Anatomy &amp; Morphology</td>
<td>Biomedical Research</td>
<td>2.38</td>
<td>1</td>
</tr>
<tr>
<td>Dermatology &amp; Venereal Diseases</td>
<td>Clinical Medicine</td>
<td>2.24</td>
<td>1</td>
</tr>
<tr>
<td>Gastroenterology &amp; Hepatology</td>
<td>Clinical Medicine</td>
<td>2.09</td>
<td>2</td>
</tr>
<tr>
<td>Anesthesiology</td>
<td>Clinical Medicine</td>
<td>1.87</td>
<td>2</td>
</tr>
<tr>
<td>Orthopedics</td>
<td>Clinical Medicine</td>
<td>1.49</td>
<td>2</td>
</tr>
<tr>
<td>Medical Informatics</td>
<td>Information &amp; Communication Technologies</td>
<td>1.33</td>
<td>2</td>
</tr>
<tr>
<td>Urology &amp; Nephrology</td>
<td>Clinical Medicine</td>
<td>1.67</td>
<td>3</td>
</tr>
<tr>
<td>Surgery</td>
<td>Clinical Medicine</td>
<td>1.49</td>
<td>3</td>
</tr>
<tr>
<td>Speech-Language Pathology &amp; Audiology</td>
<td>Public Health &amp; Health Services</td>
<td>1.39</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Council of Canadian Academies, September 2012
The Canadian health system does not perform as well

Despite the excellence of the Canadian health research, Canada faces a challenge in turning this powerful information into high-quality and cost-effective care.

<table>
<thead>
<tr>
<th>Overall Ranking (2010)</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Care</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Access</td>
<td>1</td>
<td>2</td>
<td>6.5</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6.5</td>
</tr>
<tr>
<td>Efficiency</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Equity</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: The Commonwealth Fund
Health care spending is burgeoning without a concurrent increase in quality of care

Canada’s health care spending:

• Reached an estimated $183.1 billion in 2009\(^1\), which represents an estimated 11.9% of Canada’s gross domestic product (GDP) in 2009, a jump from 10.8% of GDP in 2008;

• Is expected to grow at a rate faster than Canada’s economy, outpacing inflation and population growth;

• Typically consumes 40% of provincial budgets and will account for half of all spending within the next few years\(^2\).

1. Canadian Institute for Health Information (CIHI) (www.cihi.ca).
Challenges

• As many as **50%** of patients do not get treatments of proven effectiveness and up to **25%** get care that is not needed or potentially harmful

• Research and innovation are too often disconnected from patients and decision makers’ needs

• We are virtually unable to quantify how current health research spending affects or improves patient outcomes

• There are still insufficient systematic analytical approaches to identify and synthesize existing best evidence and translate these findings into clinical practice

• We need greater capacity to generate new evidence, if required, to ultimately support decision-makers
On average, physicians spend 1.7 hours a week on research activities.

Source: 2010 National Physician Survey: National Results (Survey updated 2013)
The number of CIHR Clinician Scientist Awards has been steadily declining.
The structure and process required to obtain and integrate relevant evidence into clinical practice

**Patient-Oriented Research**

- **IDENTIFY**
  - Formulate Key Questions
  - clinical gaps/challenges

- **ANALYZE**
  - existing global and national health data

- **APPLY**
  - Identify Best Practices
  - and evaluate best practices on a pilot-scale

- **ADOPT**
  - best practices on a system-wide scale

**GENERATE**

- new data

**Measure Outcomes**

Evaluate Outcomes to Optimize the Health System
Canada has many STRENGTHS to realize this objective...

- Investments in health research infrastructure
- Excellence in data analysis and generation
- Extensive health databases
- Exemplary medical expertise

Integrated universal public health care system capable of adopting changes in practice
...BUT, we are unable to realize previous investments due to current GAPS

Lack of a coordinated mechanism to address health priorities

Increasing demand coupled with shortages in talent*

Insufficient funding for data analysis, generation and pilot studies

Guideline development is under-resourced and uncoordinated

Lack of a mechanism to link provincial resources across the country

Lack of evidence to reform the health system

IDENTIFY

ANALYZE

APPLY

ADOPT

Evaluate Outcomes to Optimize the Health System

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• The goal is to develop a national mechanism that coordinates talent and expertise across the country, and to ask critical questions most relevant to Canadians, conduct pilot-scale studies and monitor and evaluate the impact.

• In order to achieve this goal, CIHR has developed with its partners a National Strategy for Patient-Oriented Research (SPOR).

• The vision for SPOR is to “Improve health outcomes and enhance patients’ health care experience through integration of evidence (research output) at all levels in the health care system.”

• The objective of SPOR is to better integrate research and care, and develop a culture of evaluation, dissemination and uptake of health innovations, in partnership with federal, provincial and territorial stakeholders.
• Supporting and promoting **comparative effectiveness research to evaluate** the benefits and harms of current therapeutics and practices;

• Developing **implementation science** to investigate and address major bottlenecks (e.g. social, behavioral, economic, management) that impede effective practice change;

• Strengthening **clinical research** to increase our capacity to evaluate health innovations (preventative, diagnostic, therapeutic; drugs, practices, devices);

• Fostering **evidence-informed health care** by bringing innovative diagnostic and therapeutic approaches to the point-of-care so as to ensure greater quality, accountability and accessibility of care;

• Involving decision-makers, clinicians and **patients** throughout the research process to ensure translation of health innovations into practice.

**Shifting from a researcher-driven to a health provider/patient centered research agenda.**
<table>
<thead>
<tr>
<th><strong>Support for People and Patient-Oriented Research and Trials (SUPPORT) Units</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>SPOR Networks</strong></td>
</tr>
<tr>
<td><strong>Training and capacity development</strong></td>
</tr>
<tr>
<td><strong>Improving the clinical trials environment</strong></td>
</tr>
<tr>
<td><strong>Patient engagement</strong></td>
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</tbody>
</table>
Research Networks are underpinned by local SUPPORT units that provide the resources and personnel to enhance evidence generation and integration.

<table>
<thead>
<tr>
<th>SUGGESTED SUPPORT UNIT FUNCTIONS</th>
<th>CORE FUNCTIONS</th>
<th>SPECIALIZED MODULES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Data Management</td>
<td>Large International Trials</td>
</tr>
<tr>
<td></td>
<td>Biostatistics and Methods Support</td>
<td>Systematic Reviews</td>
</tr>
<tr>
<td></td>
<td>Project Management</td>
<td>Biobanks and Translational Medicine</td>
</tr>
<tr>
<td></td>
<td>Consultation and Education</td>
<td>Knowledge Translation</td>
</tr>
</tbody>
</table>

- Integrated within a local clinical/care setting.
- Provides communities with access to expertise and resources (i.e. core functions and specialized modules).
- Enhances attraction and retention of talent to communities.
- Creates linkages with health centres (from tertiary hospitals to primary care centres), and national and international health stakeholders.
Develop a culture of collaboration: SPOR Networks

SPOR Networks represent national collaborations of decision-makers, health professionals, health researchers, patients and other stakeholders to generate research evidence and innovations designed to improve patient health and health care systems.
Develop the talent pool for Patient-Oriented Research

- Train more health professionals in health-oriented research
- Mentor, develop and support careers of clinician-researchers
- Train more non-clinicians with advanced degrees in core research methodology
- Re-engineer career training and salary awards to build capacity in patient-oriented research for individuals aligned with patient-oriented research units
Improve clinical trials environment

The **Canadian Clinical Trials Coordinating Centre (CCTCC)** is being developed by CIHR, Rx&D and ACAHO to:

- Measure, monitor and market clinical trial performance improvements
- Leverage existing work on accreditation, harmonization and streamlining ethics reviews and common contracts
- Develop a ‘database of registries’ and consider a national patient recruitment strategy
- Adopt common Standard Operating Procedures (SOPs), training and certification
- Optimize intellectual property protection policy and SR&ED Tax Credits
- Attract international investments in clinical trials through the management of a concierge (storefront) service for investors
Bridging “valleys of death” between research and outcomes

Translational Continuum

Basic Biomedical Research

Valley 1

Clinical Science & Knowledge

Valley 2

Clinical Practice & Health Decision Making