Health Workforce Data Management: Canada

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Our favourite topic of conversation...

How's the weather??

Understanding Canada's health care system

At a glance

World Health Organization

Canada – a federated state

- Canada Health Act – governs provinces and territories (P/Ts) health insurance programs to receive federal transfer payments

- 13 P/Ts

  - Manage independent health care systems

  - Including unique identifiers and data capture

- 1 federal system that funds indigenous health services and military health services

  - Independent data capture

- Canadian Institute for Health Information (CIHI)

  - Largely funded by Health Canada (federal) to manage health care data

  - Inform national data standards and provide pan-Canadian data comparability

CIHI's mandate

World Health Organization

Vision

**Better data.
Better decisions.
Healthier Canadians.**

Mandate

Deliver comparable and actionable information to accelerate improvements in health care, health system performance and population health across the continuum of care.

Values

Respect • Integrity • Collaboration • Excellence • Innovation

Relationship between Government of Canada, through Health Canada and CIHI

CIHI...

- Is funded by Health Canada and negotiated agreements with the provinces and territories

- Works with Health Canada, as well as the provinces and territories, to align its activities with priority areas

- Programs and initiatives provide the foundation for measuring performance and outcomes that are linked to the provision of health services

- pan-Canadian data supports Health Canada and the provinces and territories to develop evidence-based policies and programs

- Will work with Health Canada who is the national focal point for the NWHA

A closer look where CIHI fits re: health data at the national level

World Health Organization

Population health	Protection and public health	Health care	
Statistics Canada	**Public Health Agency of Canada and Health Canada**	**Canadian Institute for Health Information**	**Key data gaps**
• Population census • Vital statistics • Health status surveys	• Infectious disease surveillance • Drugs and medical devices regulation • Food inspection	• Hospital and residential care • Spending and health workforce • Health system performance	• Care by private providers • Allied health services • Social services

Overview of current HRH information system
Within CIHI

Governance mechanism

- External: Executive Director role – facilitate pan-Canadian conversations

- Internal: Data Governance and Standards Office – stewardship model

IT solutions for data bases

- Oracle and SAS (HHR data moving to all SAS based)

- Cloud 2020: MS Azure for office systems; AWS Canada for health data

- Future – centralized Data Hub

Data quality standards

- Information Quality team; HHR methodology guides; data dictionaries; error/validation reports; etc.

Data flows

- Electronic data submission from regulators, professional associations, & purchase of alternate sources of data

Sources of HWF data

Submitted to CIHI

- P/T regulatory bodies at record-level for nursing

- P/T regulatory bodies and/or national associations at record-level for PT, OT and Pharmacists

- National and P/T provincial associations for 23 professions at aggregate-level

- Alternate private sources, e.g., Scott's Medical Database for demographics, supply and workforce counts for physicians

- Alternate public sources, e.g., Statistics Canada – Labour Force Survey

SWOT analysis of HRHIS
For CIHI

World Health Organization

Strengths	**Weaknesses**

• National standards
  - pan- Canadian comparable data for HWF
  - Examples include: nursing, PT, OT, pharmacists at record-level; dentists, midwives, paramedics, etc., at aggregate-level
• National indicators developed and publicly available
• Methodology to support use of the data e.g., FTE – physicians; POP grouper
• Unique identifier for physicians
• Strong support from data providers
• Uptake & use
• Early modelling support
	• Outdated technology
	• Variation and gaps in stakeholder understanding and use
	• Data gaps – regulated and unregulated professions
	• Limited contextual information to support use of the data
	• Systems approach to data lacking, e.g., linking workforce supply to health system costs and patient outcomes

Opportunities	**Threats**
• Improved tools to access data – taking advantage of modern technology • Strengthen stakeholder ability – understanding and use of the data • Collect once/use many – alternate sources • Foundation for predictive modelling	• Burden of data collection • Ability of stakeholders to move forward with modern technology • Potential risk of gap in resources in rural/remote areas

HWF data availability
Within CIHI

Occupations	Total	Public	Private	Source	Remarks
	Number	Number	Number		
Physicians	86,644	—	—	SMDB, CIHI 2017	See next slide
Nursing professionals	309,169	—	—	NDB, CIHI, 2018	As above
Nursing assistants	122,600	—	—	NDB, CIHI, 2018	As above
Midwifery professionals	1,528	—	—	HWDB, CIHI, 2017	As above
Midwifery assistants	—	—	—		As above
Pharmacists	42,844	—	—	HHRDB, CIHI, 2018	As above
Pharmaceutical technicians	8,185	—	—	HWDB, CIHI, 2017	As above
Dentists	23,556	—	—	HWDB, CIHI, 2017	As above
Dental assistants	23,562	—	—	HWDB, CIHI, 2017	As above
Community health workers	—	—	—		
Medical assistants	—	—	—		
Personal care workers	—	—	—		
Administrative staff	—	—	—		
Physiotherapists	24,661	—	—	HHRDB, CIHI, 2018	As above
Occupational Therapists	18,254	—	—	HHRDB, CIHI, 2018	As above

Notes: — CIHI data not available.

Sources: Scott's Medical Database (SMDB); CIHI: Nursing Database (NDB), Health Human Resource Database (HHRDB), Health Workforce Database_aggregate (HWDB)

HWF data availability notes

Physicians	Includes active physicians in clinical and non-clinical practice (e.g., research and academia) who have an MD degree and a valid mailing address. Excludes residents, physicians in the military, and semi-retired and retired physicians. Excludes non-registered physicians who requested that their information not be published as of December 31 of 2017.
Nursing professionals	According to the OECD definitions (ISCO-08) includes registered nurses (RNs), nurse practitioners (NPs), and registered psychiatric nurses (RPNs).
Nursing assistants	According to the OECD definitions (ISCO-08) used in the WHO SoWN summary — assistant nurse is included in the nurse associate category which is CIHI equivalent to licensed practical nurses. The CIHI number for nurse assistant is for nurse associate professionals.
Midwifery professionals	Aggregate data. Coverage: all jurisdictions except PEI included in 2017 count. Midwives registered as RNs ('nurse midwife') are not captured in the 'midwifery professionals' total on previous slide but it is a data point that we can capture.
Midwifery assistants	No CIHI data available, not collected.
Pharmacists	Supply data is obtained from the National Association of Pharmacy Regulatory Authorities (NAPRA) for Quebec and Nunavut.
Pharmaceutical technicians	CIHI collects aggregate data on pharmacy technicians'. Coverage: includes data for 8 jurisdictions (NL, PEI, NS, NB, ON, SK, AB, BC). Please note ISCO-08: 3213 pharmaceutical technicians defintion to be reviewed for comparability.
Dentists	Aggregate. Coverage: all jurisdictions included
Dental assistants	Aggregate. Coverage: includes data for 9 jurisdictions (NL, NS, NB, QC, ON, MB, SK, AB, BC) .
Community health workers	No CIHI data available, not collected.
Medical assistants	CIHI collects aggregate data on physicians assistants (coverage: 2017 all jurisdictions). Please note ISCO-08: 3256 medical assistant defintion to be reviewed for comparability.
Personal care workers	No CIHI data available, not collected.
Administrative staff	No CIHI data available, not collected.
Physiotherapists	Coverage: excludes Nunavut and Northwest Territories
Occupational Therapists	Full coverage

Use of HWF data and evidence

Current state

Monitor supply and workforce counts, and migration patterns in 13 P/Ts which supports decisions on:

- Number of seats in education programs

- Need for international graduate recruitment/requirements

Support Health Ministries and medical associations for physician fee negotiations and resource planning

Some P/Ts looking at workforce modeling:

- Paired with population needs data (at national level – CIHI POP grouper) and understanding of labour force market

- Gaps in data, including national unique identifiers to model on a pan-Canadian level for broader workforce (work started with physicians)

Future: predictive models linked to outcomes of care

CIHI's continued participation

The power
of partnerships:

Increasing efficiencies,
eliminating duplication and
expanding data collection

Non-Medical
Determinants of Health
Are Canadians living
healthy lifestyles?

Quality of Care
Are Canadians receiving
high-quality care?

Patient Safety
Are Canadians receiving
care that is safe?

International
comparisons

help influence health
policy changes

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