Health Workforce in Canada

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Canadian Institute for Health Information
Canada

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Today’s Health Workforce Through . . .

- Innovations in data collection
- Data modelling and planning initiatives

. . . in Canada
Innovations in Data Collection

• New partnerships
• Using a mix of administrative and survey data
• Expanding national supply of data collection beyond physicians and nurses
• Development of multi-profession supply databases by provinces/territories
• Health Canada projects
Premier Source of Information — Collaboration Is Key

The Canadian Institute for Health Information (CIHI) is an independent, not-for-profit organization that provides essential data and analysis on Canada’s health system and the health of Canadians.
Health Human Resources (HHR)

Distribution of Health Personnel by Occupation in Canada, 2005

- Total Regulated Nurses: 43%
- Other Regulated and Unregulated Health Personnel: 45%
- Pharmacists: 3%
- Physicians: 9%
- Midwives: 1%

Sources: Labour Force Survey, Statistics Canada; Canadian Regulated Nurses Databases, Scott’s Medical Database. CIHI, 2005.
Age Distribution, Canada, 1980–2005

Family Medicine Physicians

Specialist Physicians

Registered Nurses

Average Age in 2005:
Family Physicians: 48.0
Specialists: 49.9
RN: 44.7

Source: Scott’s Medical Database, CIHI, 2005.
Source: Registered Nurses Database, CIHI, 2005.
HHR Data Sources

- Scott’s Medical Database, 1968 to 2005 (CIHI)
- National Physician Database, 1972 to 2004 (CIHI)
- Registered Nurses Database, 1980 to 2005 (CIHI)
- Registered Psychiatric Nurses Database, 2002 to 2005 (CIHI)
- Licensed Practical Nurses Database, 2002 to 2005 (CIHI)
- Health Personnel Database, 1970 to 2004 (CIHI)

- National Physician Survey (CMA, CFPC, RCPSC)
- CMA Masterfile (CMA)
- National Survey of the Work and Health of Nurses (SC)
- Labour Force Survey (SC)
- Canadian Community Health Survey (SC)
- Census (SC)
- CAPER (AFMC)
- ORIS (AFMC)
- Many others . . .
Introducing New Data

- First survey conducted in 2004
- Second wave launched January 2007
  - Results will start to be available in November 2007

- National Survey of the Work and Health of Nurses (NSWHN)—partnership project between CIHI, Statistics Canada and Health Canada (telephone survey completed in the fall of 2005)
- Canadian Physician Health Survey—to be conducted in 2007
Level of Satisfaction

Physicians

- Very Satisfied: 28%
- Somewhat Satisfied: 45%
- Somewhat Dissatisfied: 12%
- Neutral: 11%
- Very Dissatisfied: 4%


Nurses

- Very Satisfied: 42%
- Somewhat Satisfied: 47%
- Somewhat Dissatisfied: 9%
- Very Dissatisfied: 2%

Enhancing the Collection of Physician Payment Data

FTE Physicians per 100,000 Population by Type of Payment, 2004/05

Evolving Role of Fee-for-Service Family Physicians

Change Nationally Between 1994 and 2003

- Performing Surgery: 28%
- Providing Surgical Assistance: 36%
- Delivering Babies: 45%
- Hospital Inpatient Care: 16%
- Providing Mental Health Care: No Change
- Providing Anesthesia Services: 31%

Source: National Physician Database, CIHI; in collaboration with Dr. Joshua Tepper.
HHR Databases Development Project

The Pharmacist Workforce -- Before

Figure Pharm-1. Number of Pharmacists in Canada, 1995 to 2004

Figure Pharm-2. Pharmacists by Gender, Canada, 2001

Head counts

Gender
The Pharmacist Workforce -- After

For example, what is the difference between headcounts and FTE methodology in one Canadian province?

- **Pharmacists**: 4%
- **Physicians**: 18%

Pharmacist Source: PDB 2006 preliminary data, CIHI
Physician Source: 2002-2003 NPDB, CIHI
Pharmacist hours worked

Based on one Canadian province only.
Pharmacy Source: PDB preliminary data, CIHI
Pharmacist hours worked and gender

Based on one Canadian province only.
Pharmacy Source: PDB preliminary data, CIHI
Nurse Practitioners, Canada, 2005

Licensed NP Workforce

- 2003 = 725
- 2004 = 878
- 2005 = 1,026

Percent Change = 41.5%

Source: Canadian Regulated Nursing Professions Database, CIHI, 2005.
Database Collaboration

CAPER & ORIS DATA: Faculty of Medicine Faculty Counts and MD Students/Post-MD Trainees, Canada, 1992/93-2005/06

Note: Full-time faculty includes professors, associate and assistant professors, instructors and other faculty. Part-time faculty includes paid and volunteer faculty members. Faculty counts for 2005–2006 are preliminary.

Sources: Office of Research and Information Services (ORIS) and Canadian Post-M.D. Education Registry (CAPER), Association of Faculties of Medicine of Canada, 2007.
Migration of Physicians

Number of Physicians Who Moved Abroad or Returned From Abroad, Canada, 1969 to 2005

Source: Scott’s Medical Database, CIHI, 2005.
Internationally Educated Physicians and Nurses in Canada

<table>
<thead>
<tr>
<th>Location of Registration</th>
<th>Physicians</th>
<th>RNs</th>
<th>LPNs</th>
<th>RPNs</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.L.</td>
<td>36.9%</td>
<td>1.9%</td>
<td>0.0%</td>
<td>--</td>
</tr>
<tr>
<td>P.E.I.</td>
<td>27.8%</td>
<td>2.2%</td>
<td>0.5%</td>
<td>--</td>
</tr>
<tr>
<td>N.S.</td>
<td>15.1%</td>
<td>2.4%</td>
<td>0.3%</td>
<td>--</td>
</tr>
<tr>
<td>N.B.</td>
<td>22.1%</td>
<td>1.3%</td>
<td>0.4%</td>
<td>--</td>
</tr>
<tr>
<td>Que.</td>
<td>10.9%</td>
<td>2.5%</td>
<td>0.0%</td>
<td>--</td>
</tr>
<tr>
<td>Ont.</td>
<td>23.9%</td>
<td>11.5%</td>
<td>3.1%</td>
<td>--</td>
</tr>
<tr>
<td>Man.</td>
<td>27.4%</td>
<td>6.3%</td>
<td>2.7%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Sask.</td>
<td>50.7%</td>
<td>3.0%</td>
<td>1.7%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Alta.</td>
<td>26.5%</td>
<td>4.3%</td>
<td>2.1%</td>
<td>8.9%</td>
</tr>
<tr>
<td>B.C.</td>
<td>27.4%</td>
<td>15.0%</td>
<td>4.0%</td>
<td>11.4%</td>
</tr>
<tr>
<td>Y.T.</td>
<td>25.0%</td>
<td>7.8%</td>
<td>0.0%</td>
<td>--</td>
</tr>
<tr>
<td>N.W.T.</td>
<td>27.3%</td>
<td>10.5%*</td>
<td>1.1%</td>
<td>--</td>
</tr>
<tr>
<td>Nun.</td>
<td>28.6%</td>
<td>*</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Canada</td>
<td>22.3%</td>
<td>7.4%</td>
<td>1.9%</td>
<td>7.2%</td>
</tr>
</tbody>
</table>
Collaborating With Researchers — Geographic Studies

Less than 16% of family physicians and 2.4% of specialists were located in rural and small-town Canada, where 21.1% of the population resided in 2004.

Source: SMDB, CIHI, 2004; in collaboration with Dr. Raymond W. Pong and Dr. J. Roger Pitblado.

Each dot represents one physician.
Moving Data From International Level . . .

Source: OECD Health Data.
to National Level...

Number of Canadian Physicians per 100,000 Population

Source: National Physician Database, CIHI.
...to Provincial/Territorial levels even Regional levels.

P.E.I. and Canada Physician Counts and Per 100,000 Population Ratio's

<table>
<thead>
<tr>
<th>Province</th>
<th>Region</th>
<th>Family Medicine</th>
<th></th>
<th>Specialist</th>
<th></th>
<th>Total Physicians</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td># Physicians</td>
<td>Physicians per 100,000 Population</td>
<td># Physicians</td>
<td>Physicians per 100,000 Population</td>
<td># Physicians</td>
<td>Physicians per 100,000 Population</td>
</tr>
<tr>
<td>P.E.I.</td>
<td>West Prince Health Region</td>
<td>7</td>
<td>48</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>East Prince Health Region</td>
<td>35</td>
<td>104</td>
<td>12</td>
<td>36</td>
<td>47</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>Queens Health Region</td>
<td>71</td>
<td>103</td>
<td>64</td>
<td>93</td>
<td>135</td>
<td>196</td>
</tr>
<tr>
<td></td>
<td>Kings Health Region</td>
<td>10</td>
<td>47</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>P.E.I. Total</td>
<td>123</td>
<td>89</td>
<td>76</td>
<td>55</td>
<td>199</td>
<td>144</td>
</tr>
<tr>
<td></td>
<td>Canada</td>
<td>31633</td>
<td>98</td>
<td>29989</td>
<td>93</td>
<td>61622</td>
<td>190</td>
</tr>
</tbody>
</table>

Source: SMDB, CIHI, Population Data, Statistics Canada
Multi-Professional Databases

Other Health Professional Initiatives:

Allied health human resources database
The first phase of the Allied Health Human Resources Database (AHHRDB) Pilot Project has now been completed. Currently, the AHHRDB houses demographic, education and employment data from nine regulatory colleges including the professions Dental Technologists, Dietitians, Occupational Therapists, Opticians, Optometrists, Pharmacists, Physiotherapists, Psychologists/Psychological Associates, and Respiratory Therapists. This database will allow the Ministry to collect standardized and consistent demographic, education and employment information on regulated allied health professionals thereby supporting appropriate health human resources planning for this sector. Registration data from an additional three regulatory colleges, College of Audiologists & Speech Language Pathologists of Ontario, College of Chiropodists of Ontario, and College of Midwives of Ontario will be uploaded into the pilot database by the end of the year.

Health Professionals Registration Database

Prince Edward Island
Department of Health and Social Services
Timeless Medical Systems

Ontario
This site maintained by the Government of Ontario, Canada
Multi-Professional Databases

The BC Linked Health Database

Population
- Births File: 1945 forward
- Deaths File: 1883 forward
- MSP Registration File: 1966 forward

Social Investment/Safety Net
- BC Workers' Compensation Board: 1887 forward

Health Care System
- Special Populations
  - BC Cancer Agency: 1985 forward
- Services
  - BC Ambulance Service: 1956 only
  - Continuing Care: 1985 forward
  - Hospital Separations: 1952/55 forward
  - Medical Services Plan: 1985/86 forward
  - Mental Health: 1996 forward
  - PharmaCare: 1996 forward
- Care Providers
  - MSP Practitioner File: 1985/86 forward

Social/Physical Context
- BC Stats data sets and profiles: 1994 forward
- Census of Health Professionals: 1993 forward
- Settlement pattern data: 1986, 2001
- Travel time and network data: 2002 (forward: current under development)
Selected Health Canada Projects

- Pan-Canadian health human resources planning initiative
- Jurisdictional/regional health human resources projects:
  - Example projects:
    - Western and Northern Canada project
    - Human resources strategy for Nova Scotia Department of Health
    - Health human resources strategy — Manitoba
Data Modelling and Planning Initiatives

To identify and address HHR forecasting needs, Health Canada has committed funding to:

– **Inventory** forecasting models under development and being used in Canada
– **Assess models** against their scope, utility and ability to meet needs
– **Determine jurisdictional forecasting needs**
– **Identify gaps** in forecasting capacity

**Goal:**

*To share knowledge and increase modelling capacity nationally*
Data Modelling — Atlantic Canada

• Develop a simulation model for the Atlantic region to:
  – Simulate gaps in the supply of and need for HHR
  – Test the effectiveness of policy initiatives in dealing with HHR gaps prior to full implementation of the policy intervention.

• How it works:
  – Estimates and compares provider supply with requirements.

<table>
<thead>
<tr>
<th>Provider Supply</th>
<th>Supply Module</th>
<th>Graduate entry rates, graduate age distribution, in-migration, provider stock, exit rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Module</td>
<td>Seats, program attrition, program length, number of students, graduate out-migration</td>
<td></td>
</tr>
<tr>
<td>Provider Requirements</td>
<td>Productivity Module</td>
<td>Productivity, worked hours, activity-adjusted providers available</td>
</tr>
<tr>
<td>Needs Module</td>
<td>Population, health status, level of service, service requirements, activity-adjusted providers required</td>
<td></td>
</tr>
</tbody>
</table>
What’s Next?
Some Challenges

• Changing environment and landscape for health human resources
• Changing environment and landscape of privacy legislation (e.g., data loss)
• Infrastructure and systems (e.g., NUI)
• Resources
• Multitude of stakeholders and users = increasing and varied demands
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