Taking health information further
À l'avant-garde de l'information sur la santé

Health Workforce in Canada

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Canadian Institute for Health Information
Canada

International Medical Workforce Collaborative
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March 2007

Canadian Institute for Health Information
Institut canadien d'information sur la santé

Today's Health Workforce Through . . .

- Innovations in data collection
- Data modelling and planning initiatives

. . . in Canada

Innovations in Data Collection

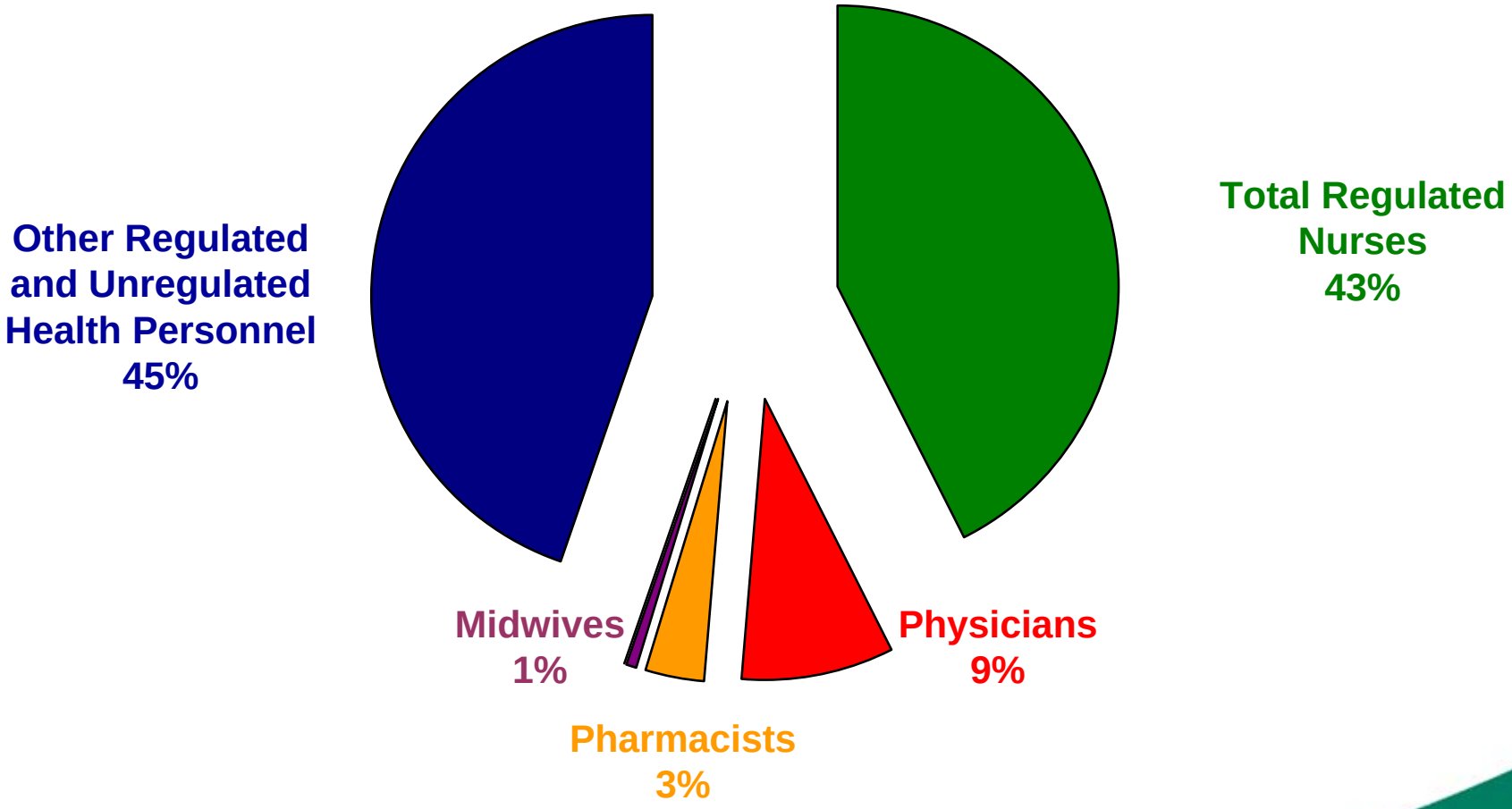
- New partnerships
- Using a mix of administrative and survey data
- Expanding national supply of data collection beyond physicians and nurses
- Development of multi-profession supply databases by provinces/territories
- Health Canada projects

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.

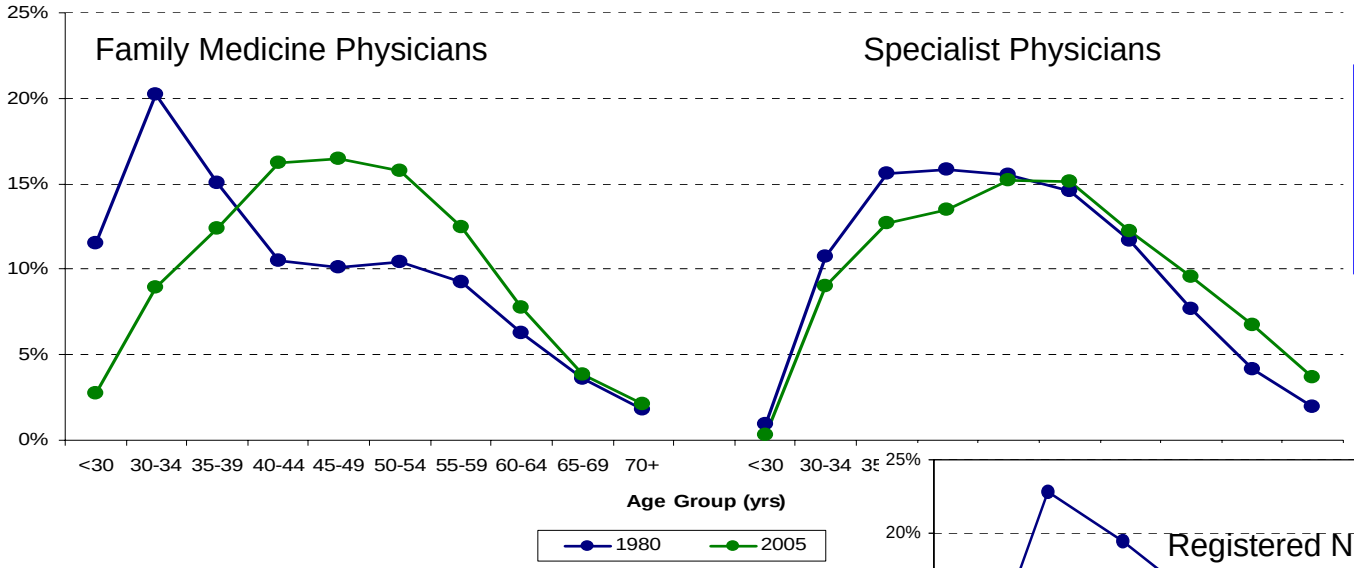
Health Human Resources (HHR)

Distribution of Health Personnel by Occupation in Canada, 2005



Sources: Labour Force Survey, Statistics Canada; Canadian Regulated Nurses Databases, Scott's Medical Database, CIHI, 2005.

Age Distribution, Canada, 1980–2005

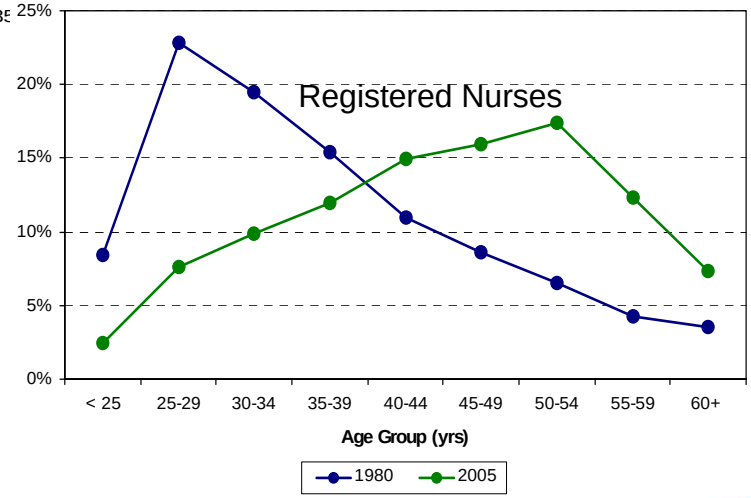


Average Age in 2005:

Family Physicians: 48.0

Specialists: 49.9

Source: Scott's Medical Database, CIHI, 2005.



Average Age in 2005:

RN: 44.7

Source: Registered Nurses Database, CIHI, 2005.

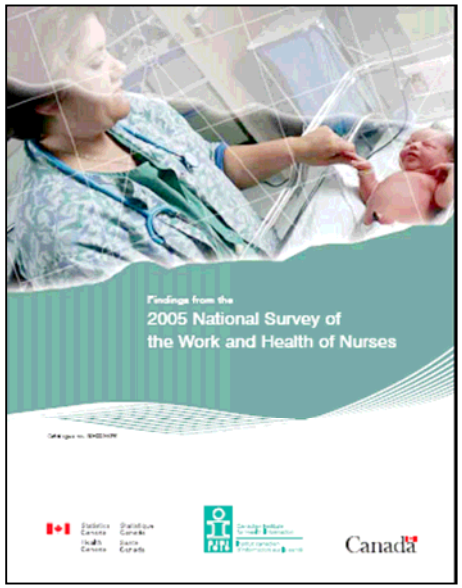
HHR Data Sources

- 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

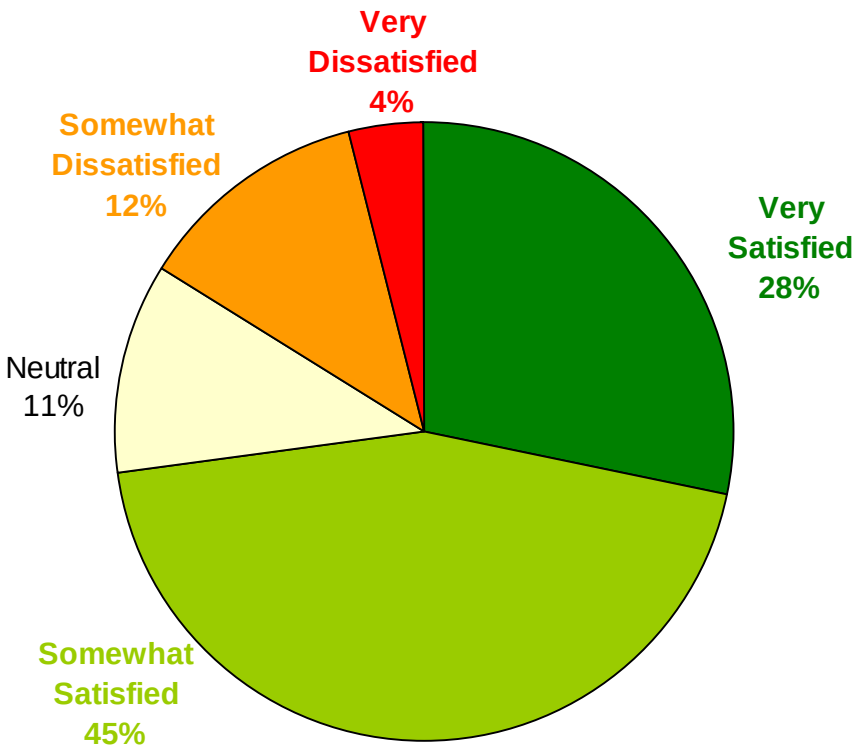
National Physician Survey
Sondage national des médecins



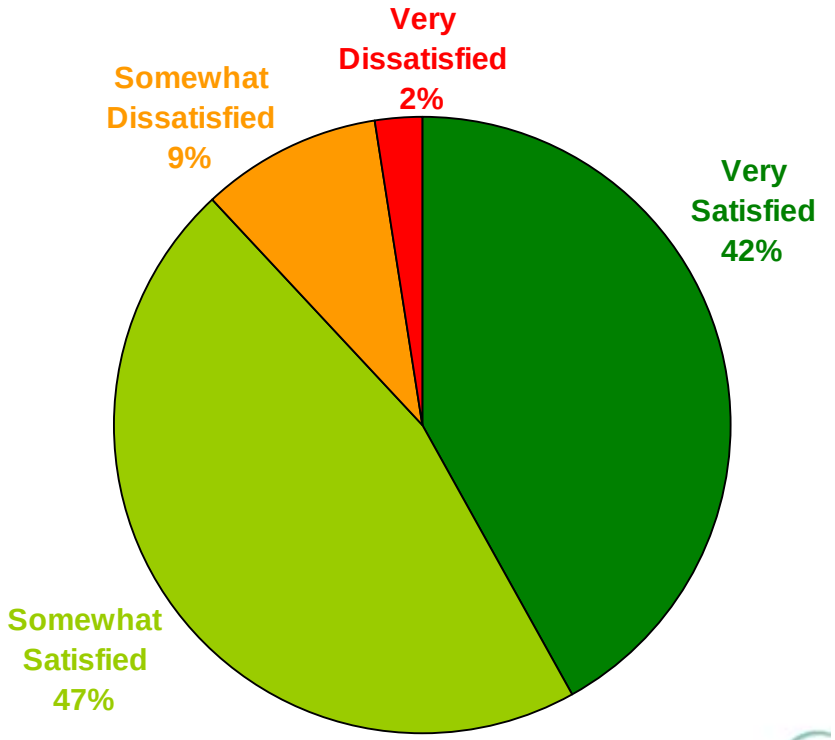
- National Survey of the Work and Health of Nurses (NSWHN)—partnership project between CIHI, Statistics Canada and Health Canada (telephone survey completed in the fall of 2005)
- Canadian Physician Health Survey—to be conducted in 2007

Level of Satisfaction

Physicians



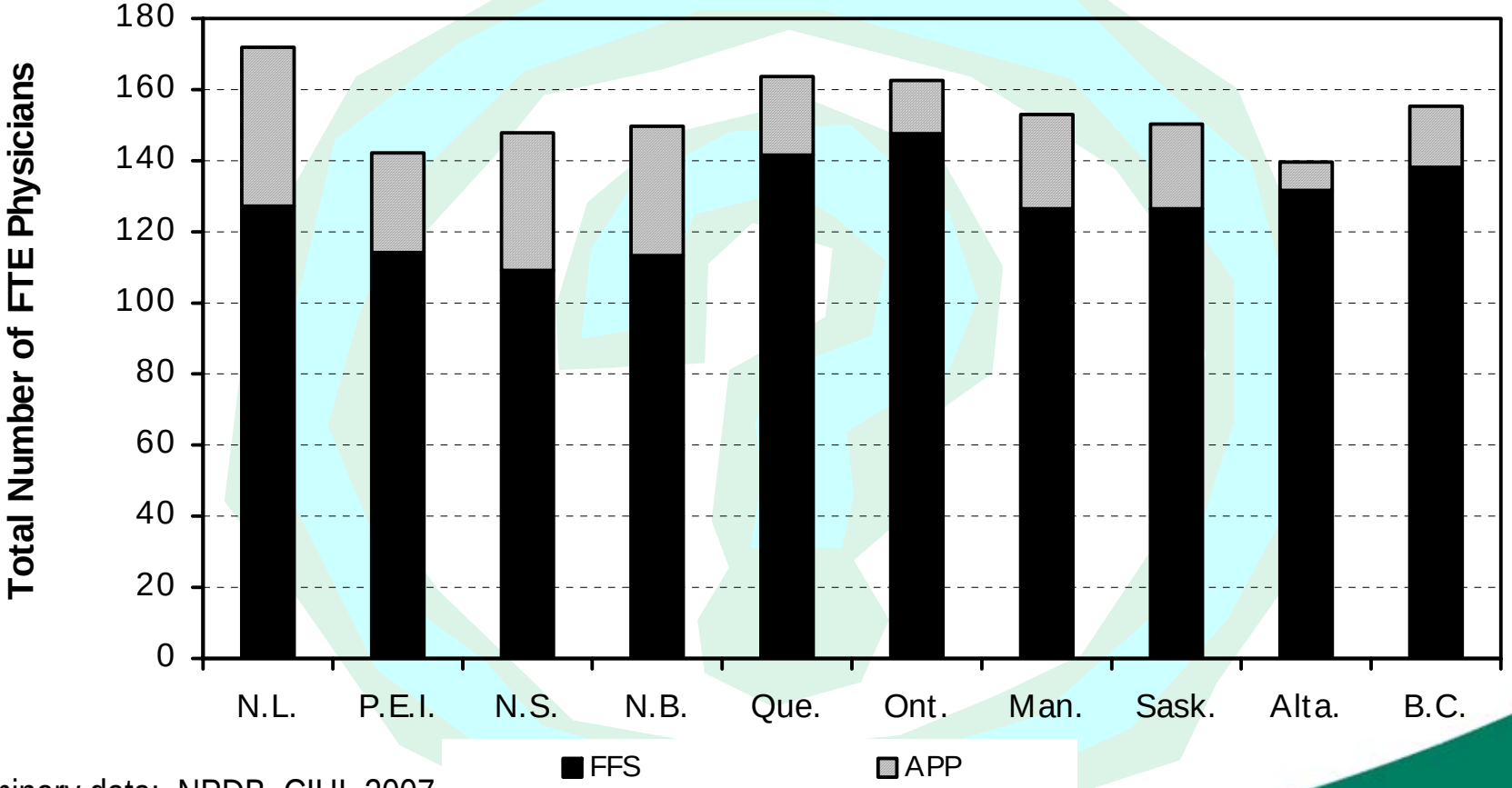
Nurses



Source: NPS, CMA, CFPC, RCPSC, 2004; NSWHN, Statistics Canada, 2005.

Enhancing the Collection of Physician Payment Data

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



Preliminary data: NPDB, CIHI, 2007.

Evolving Role of Fee-for-Service Family Physicians

Change Nationally Between 1994 and 2003

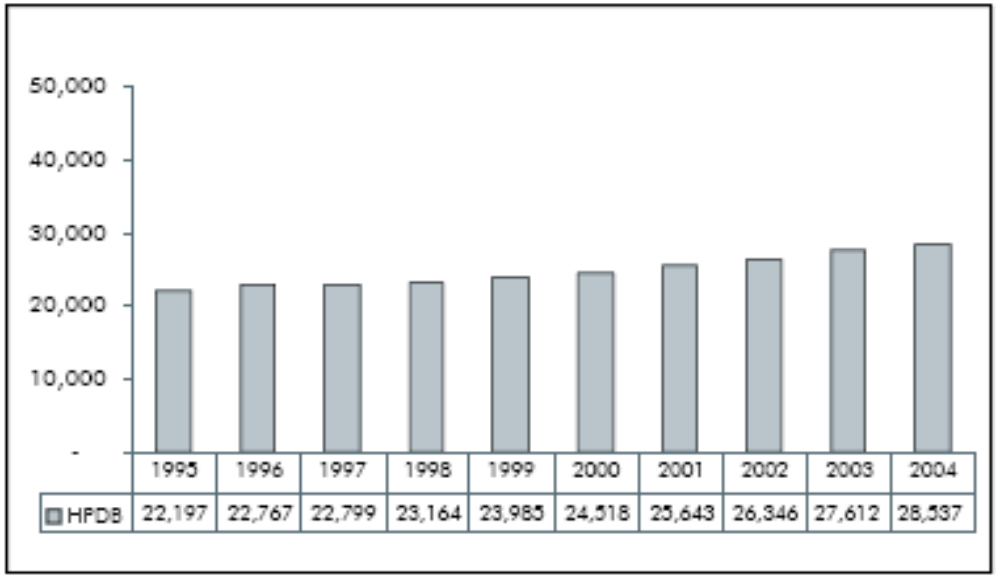
Performing Surgery	Providing Surgical Assistance	Delivering Babies
28% ↓	36% ↓	45% ↓
Hospital Inpatient Care	Providing Mental Health Care	Providing Anesthesia Services
16% ↓	No Change ↔	31% ↑

Source: National Physician Database, CIHI; in collaboration with Dr. Joshua Tepper.

HHR Databases Development Project

The Pharmacist Workforce -- Before

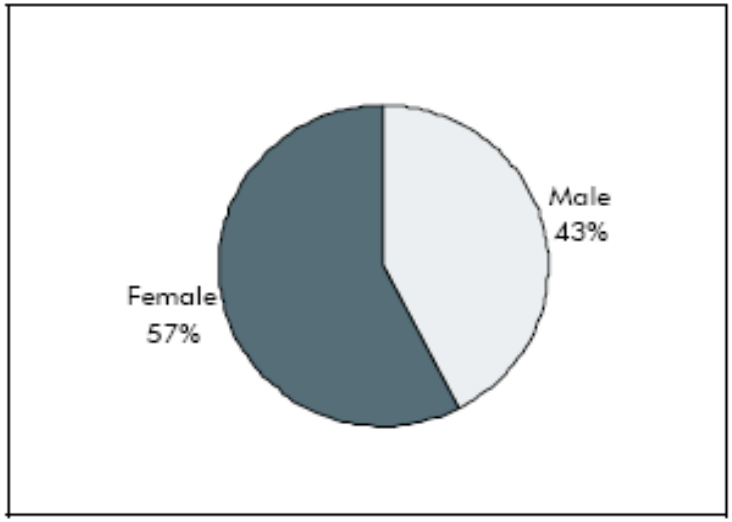
Figure Pharm–1. Number of Pharmacists in Canada, 1995 to 2004



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
HPDB	22,197	22,767	22,799	23,164	23,985	24,518	25,643	26,346	27,612	28,537

Source: HPDB/CIHI.

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



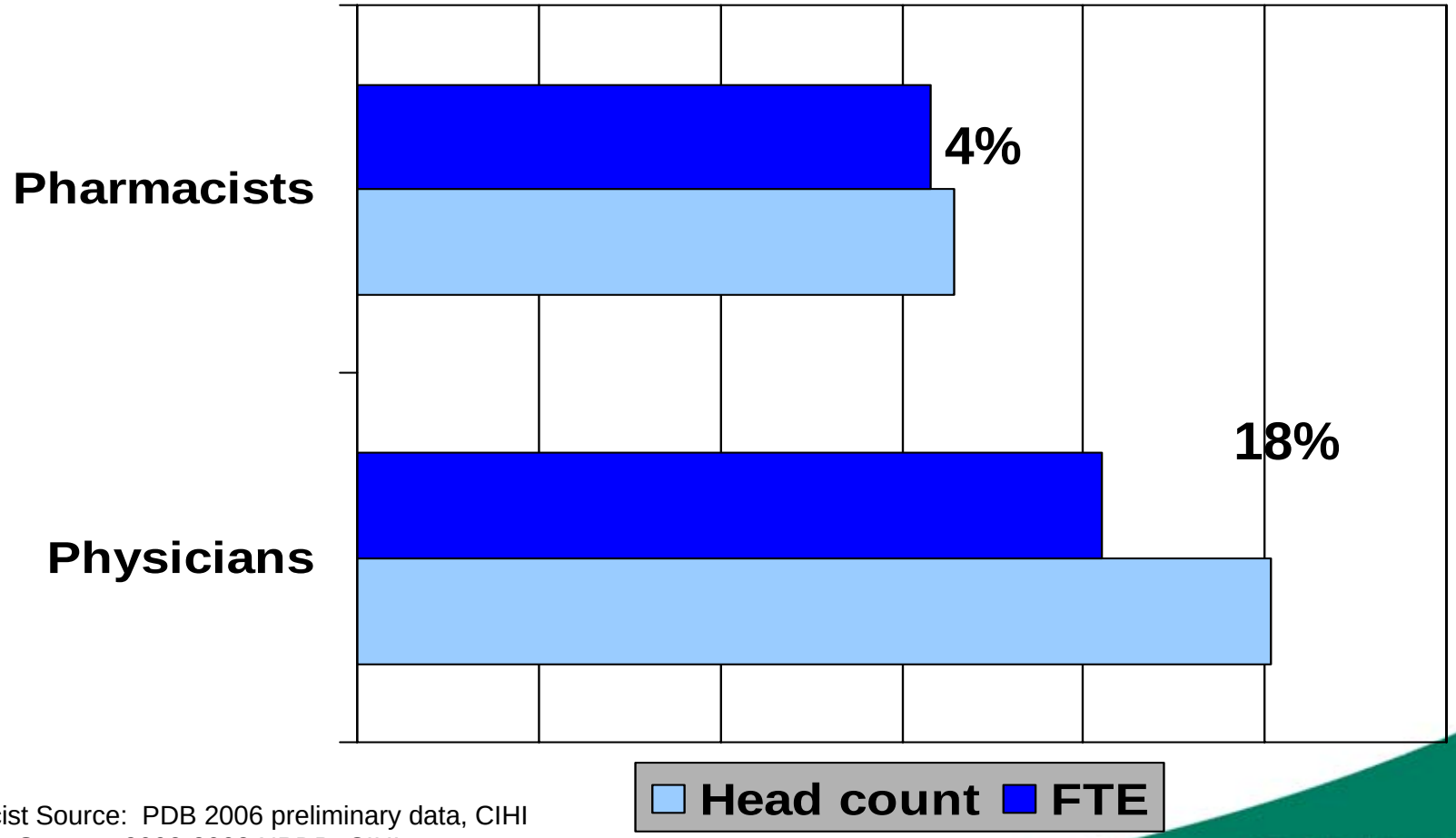
Source: Census, Statistics Canada.

Head counts

Gender

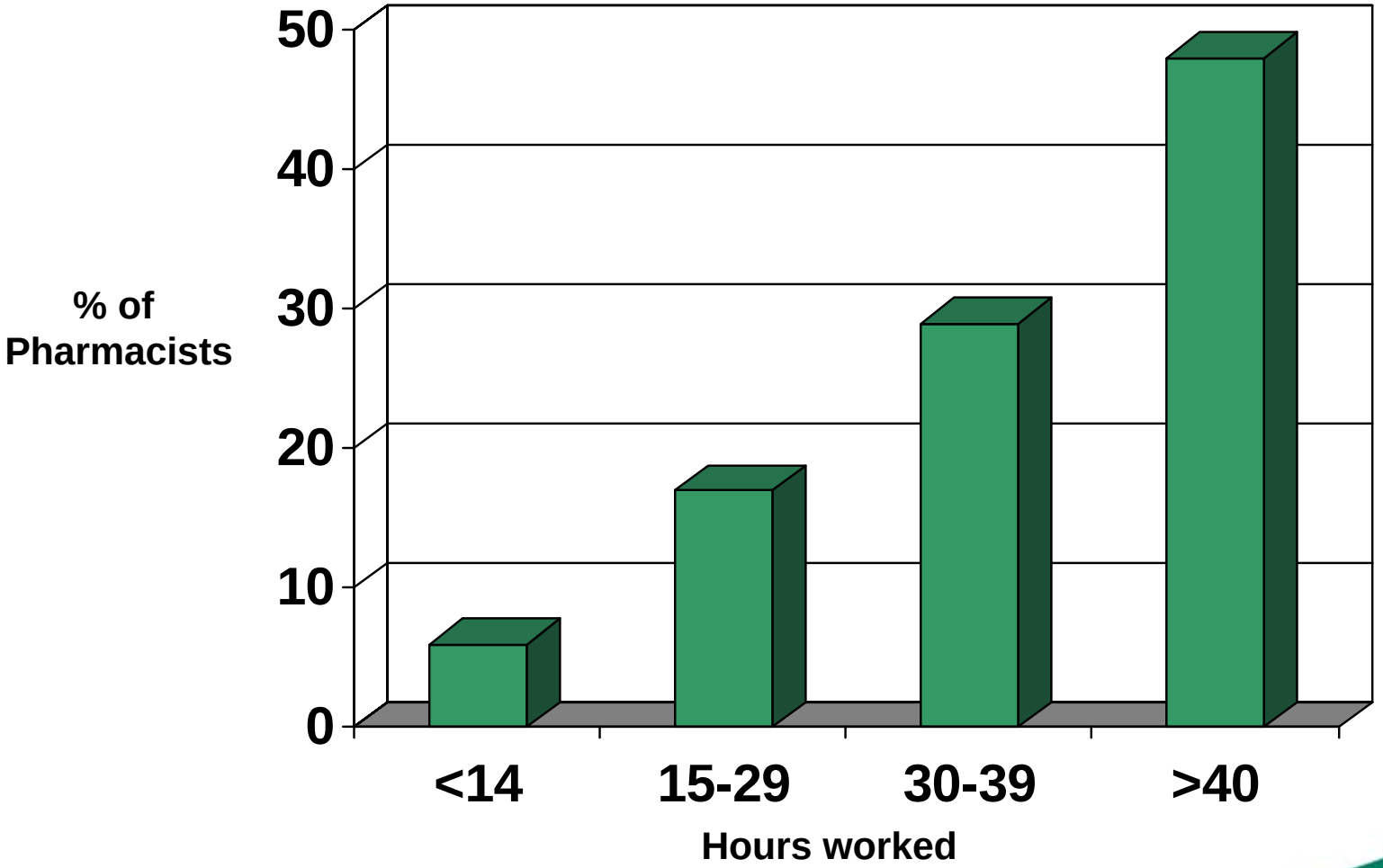
The Pharmacist Workforce -- After

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



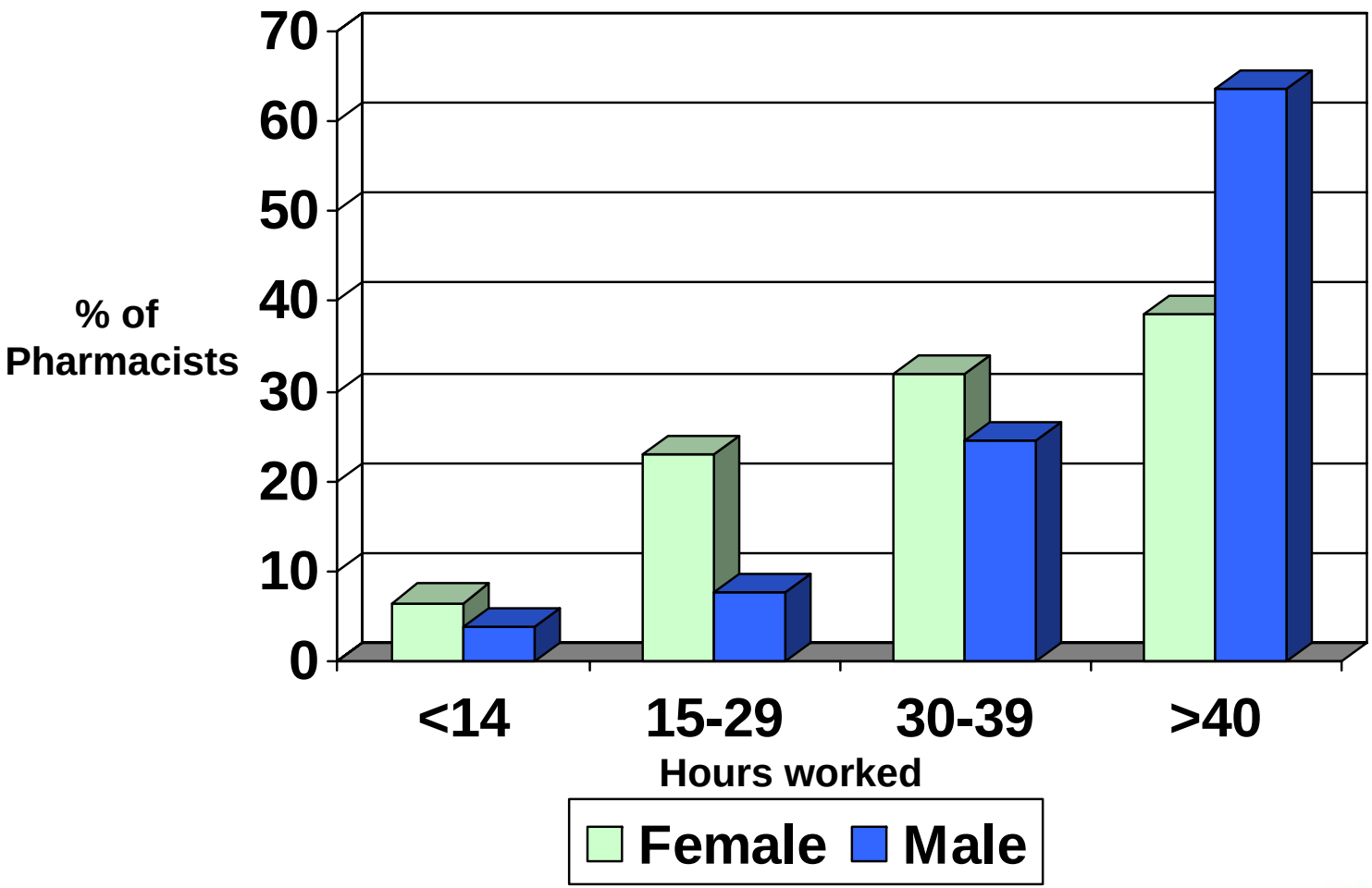
Pharmacist Source: PDB 2006 preliminary data, CIHI
Physician Source: 2002-2003 NPDB, CIHI

Pharmacist hours worked



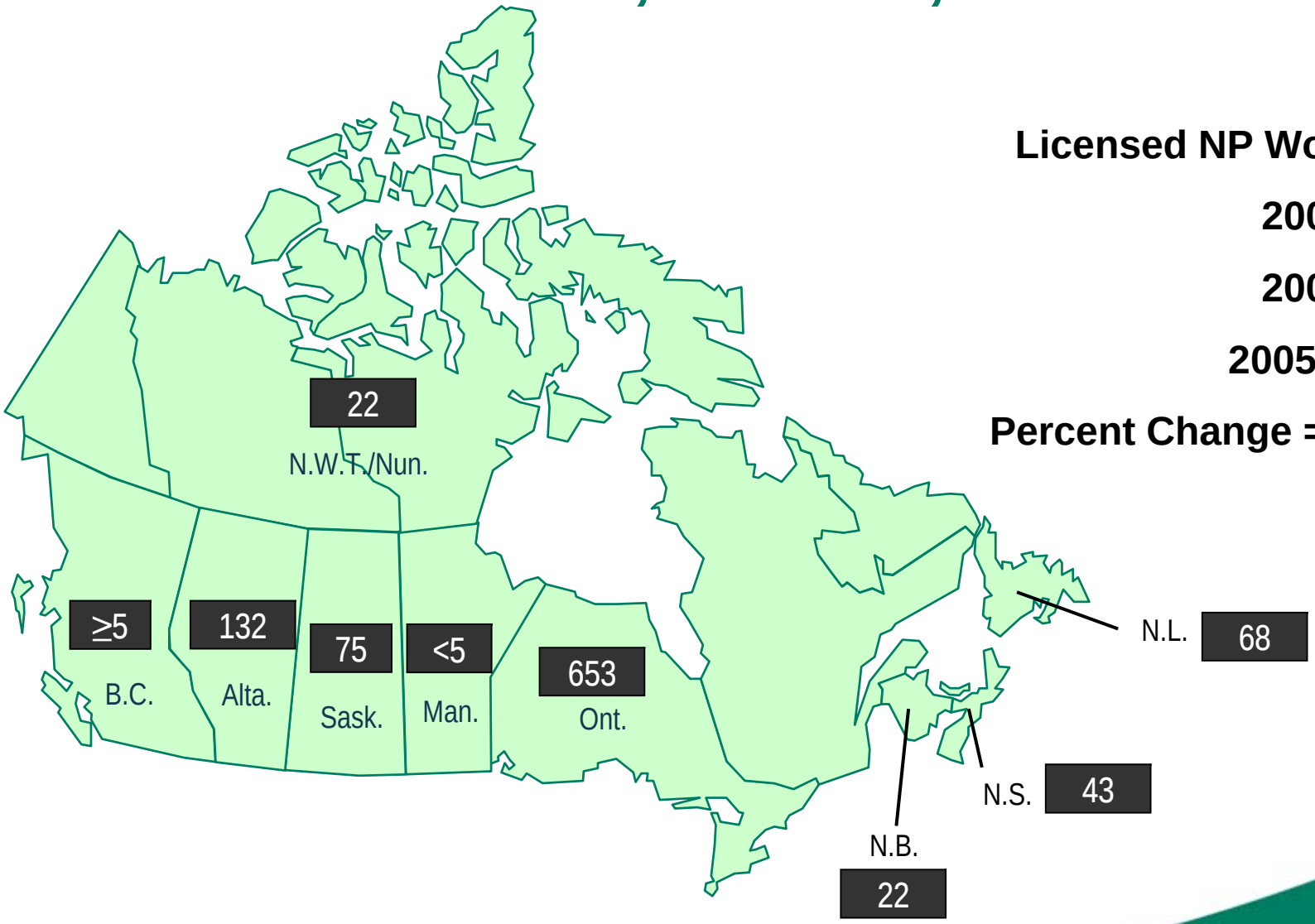
Based on one Canadian province only.
Pharmacy Source: PDB preliminary data, CIHI

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

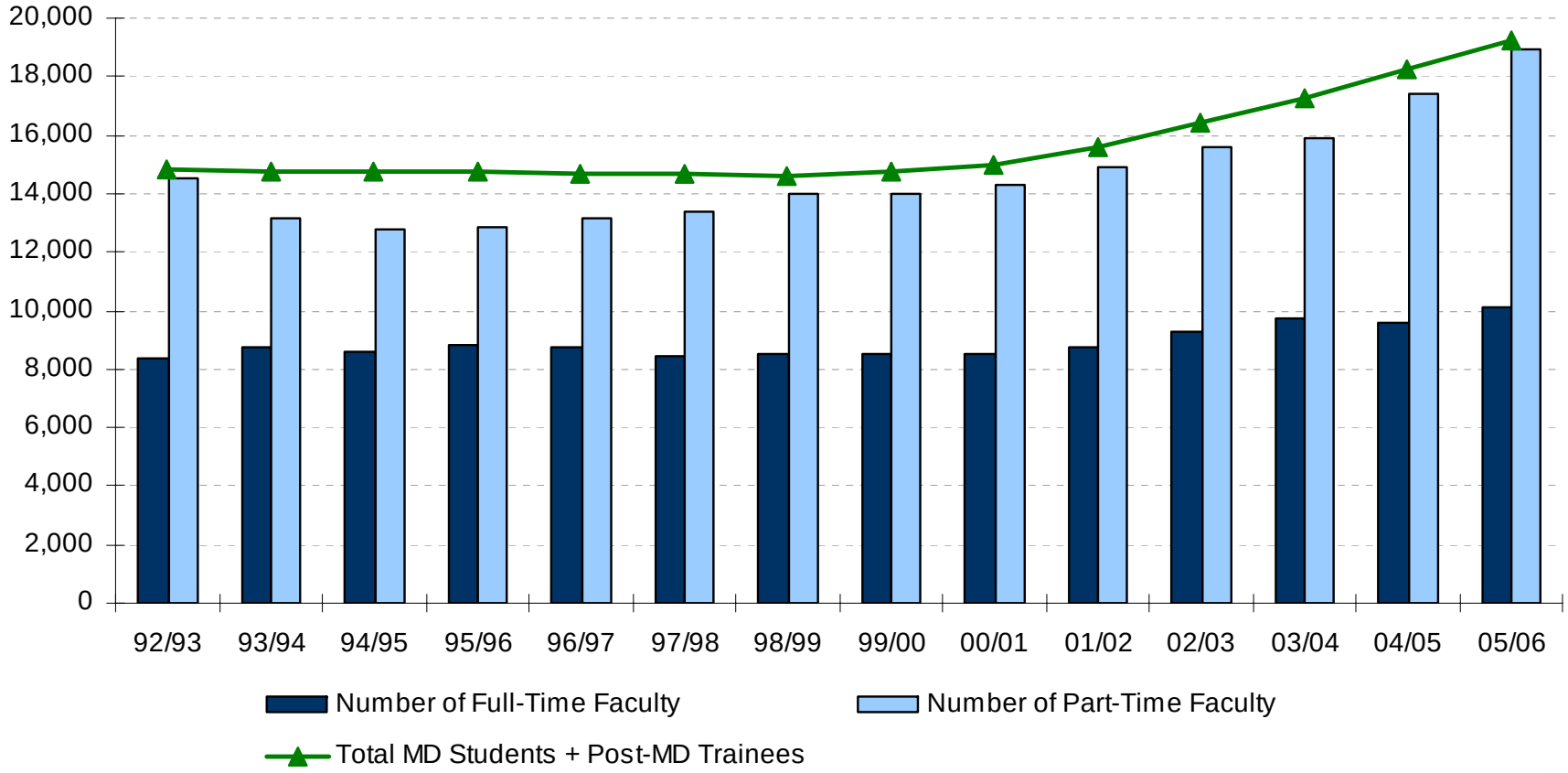
2005 = 1,026

Percent Change = 41.5%

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

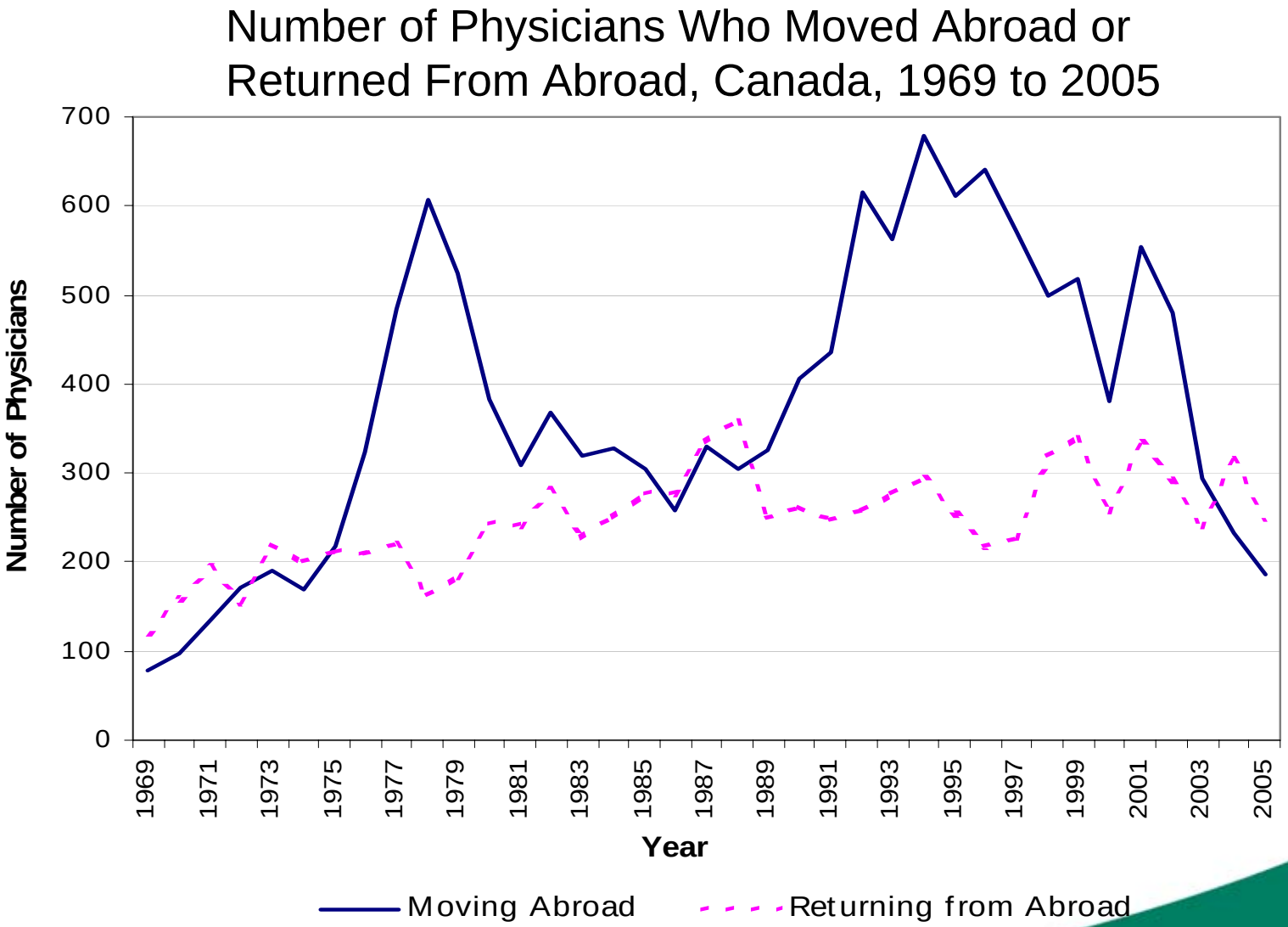
Database Collaboration

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



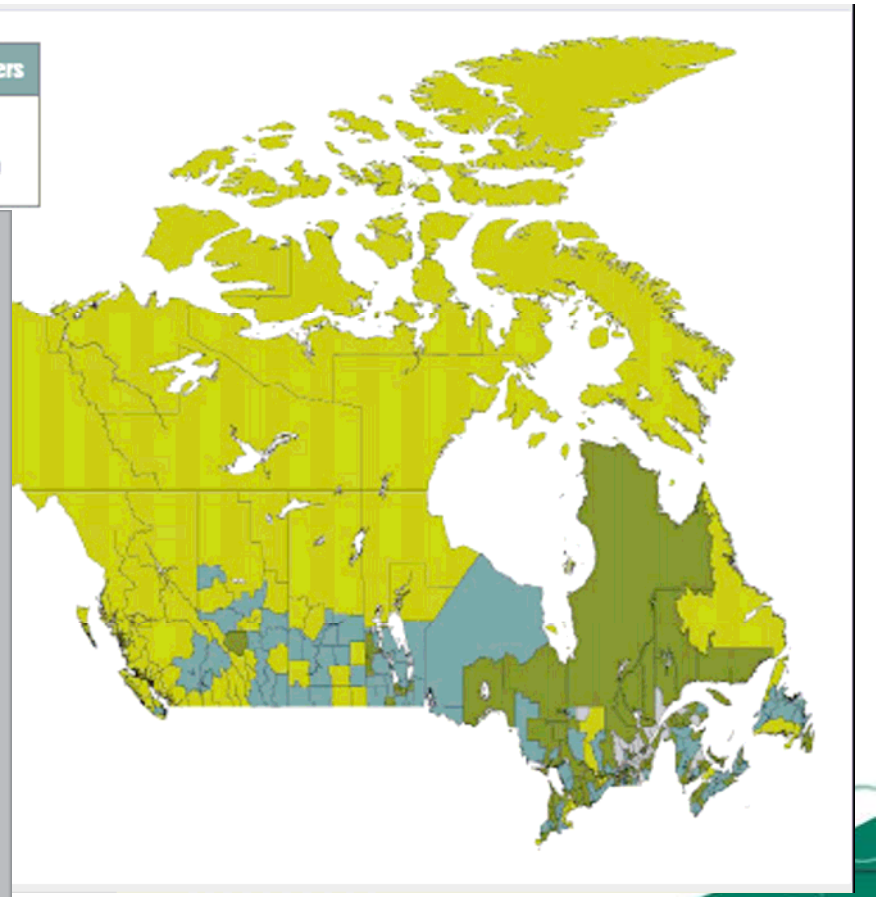
Note: Full-time faculty includes professors, associate and assistant professors, instructors and other faculty. Part-time faculty includes paid and volunteer faculty members. Faculty counts for 2005–2006 are preliminary.
Sources: Office of Research and Information Services (ORIS) and Canadian Post-M.D. Education Registry (CAPER), Association of Faculties of Medicine of Canada, 2007.

Migration of Physicians



Source: Scott's Medical Database, CIHI, 2005.

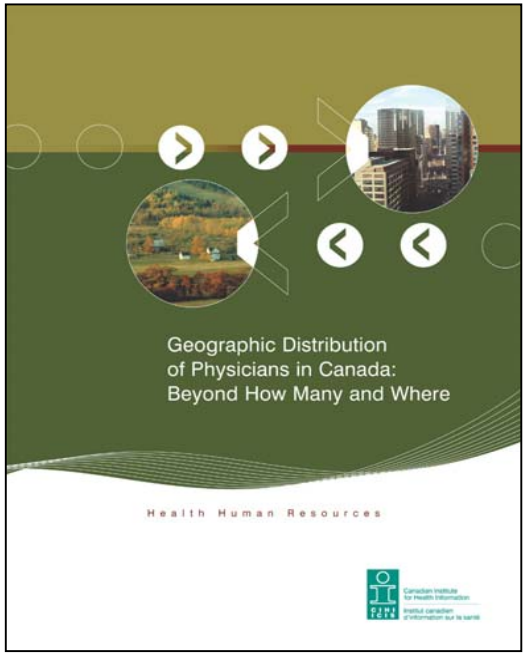
Internationally Educated Physicians and Nurses in Canada



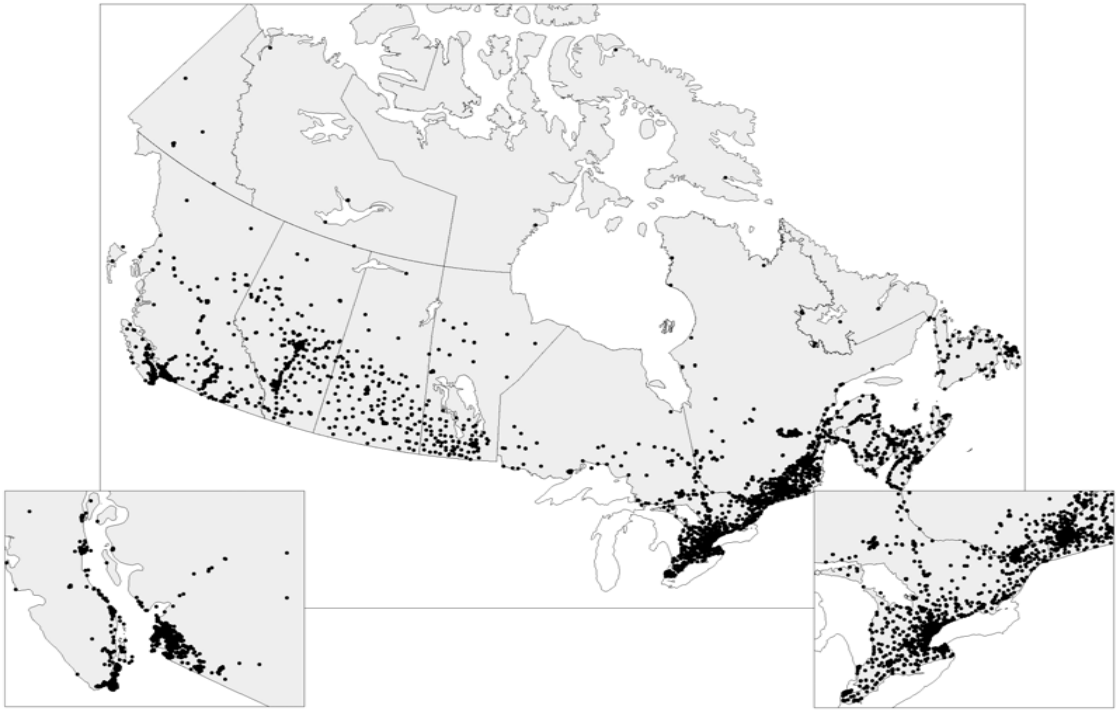
Internationally Educated as % of Total Workforce

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

Collaborating With Researchers — Geographic Studies



Distribution of Physicians in Canada, 2004

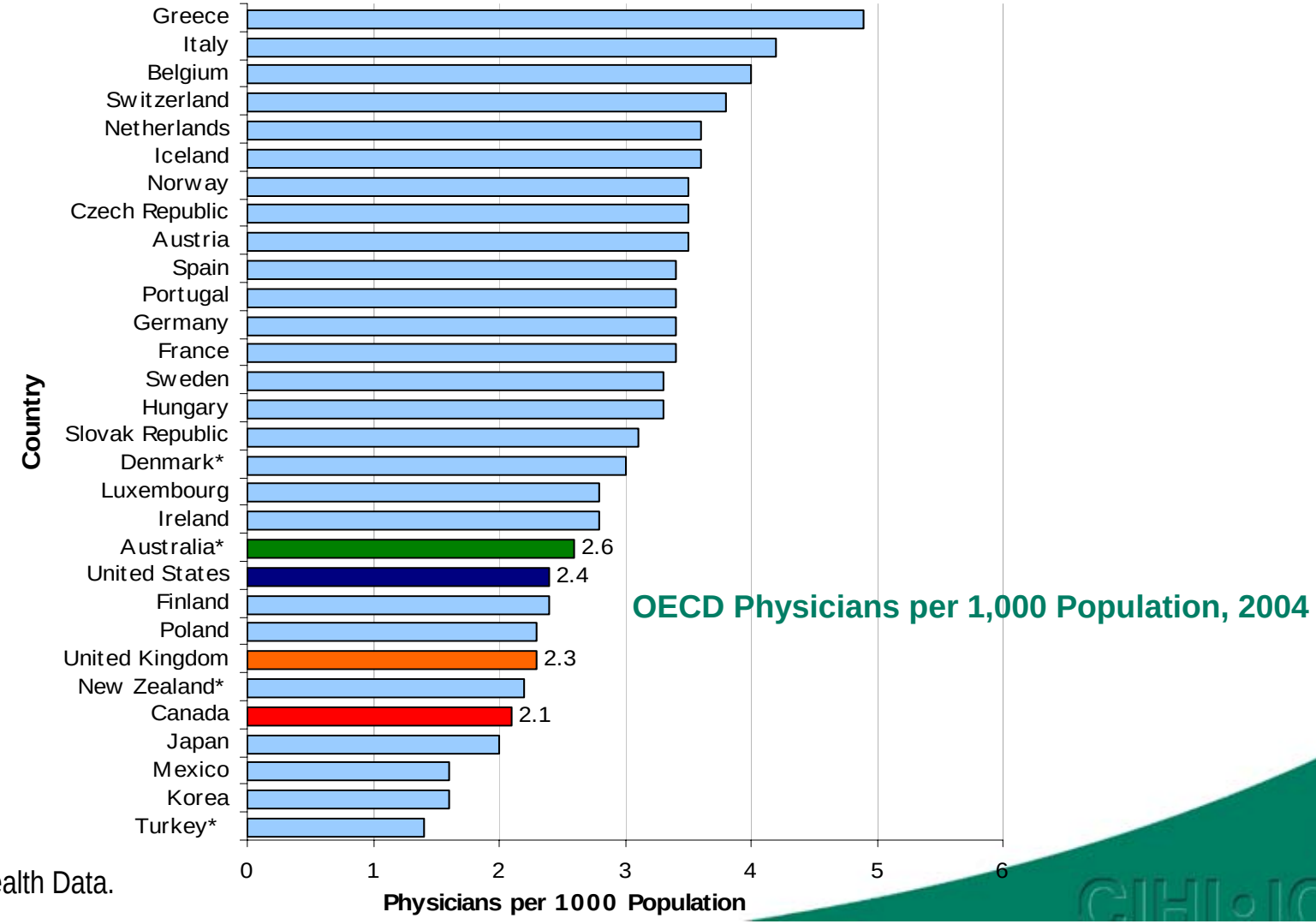


Less than 16% of family physicians and 2.4% of specialists were located in rural and small-town Canada, where 21.1% of the population resided in 2004.

Each dot represents one physician.

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

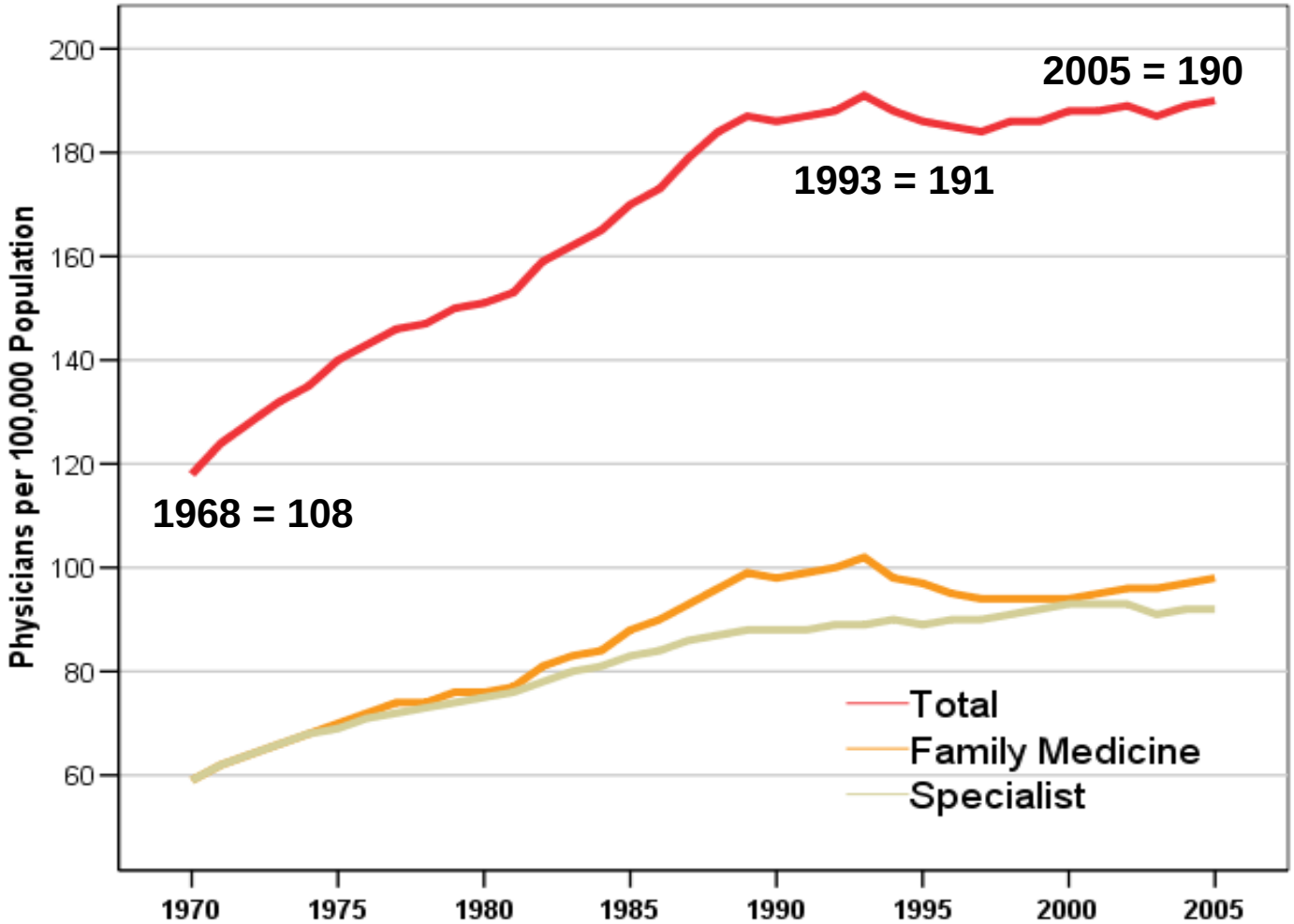
Moving Data From International Level . . .



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

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

Source: SMDB, CIHI, Population Data, Statistics Canada

Multi-Professional Databases

Health Professionals Registration Database

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.

Prince Edward Island

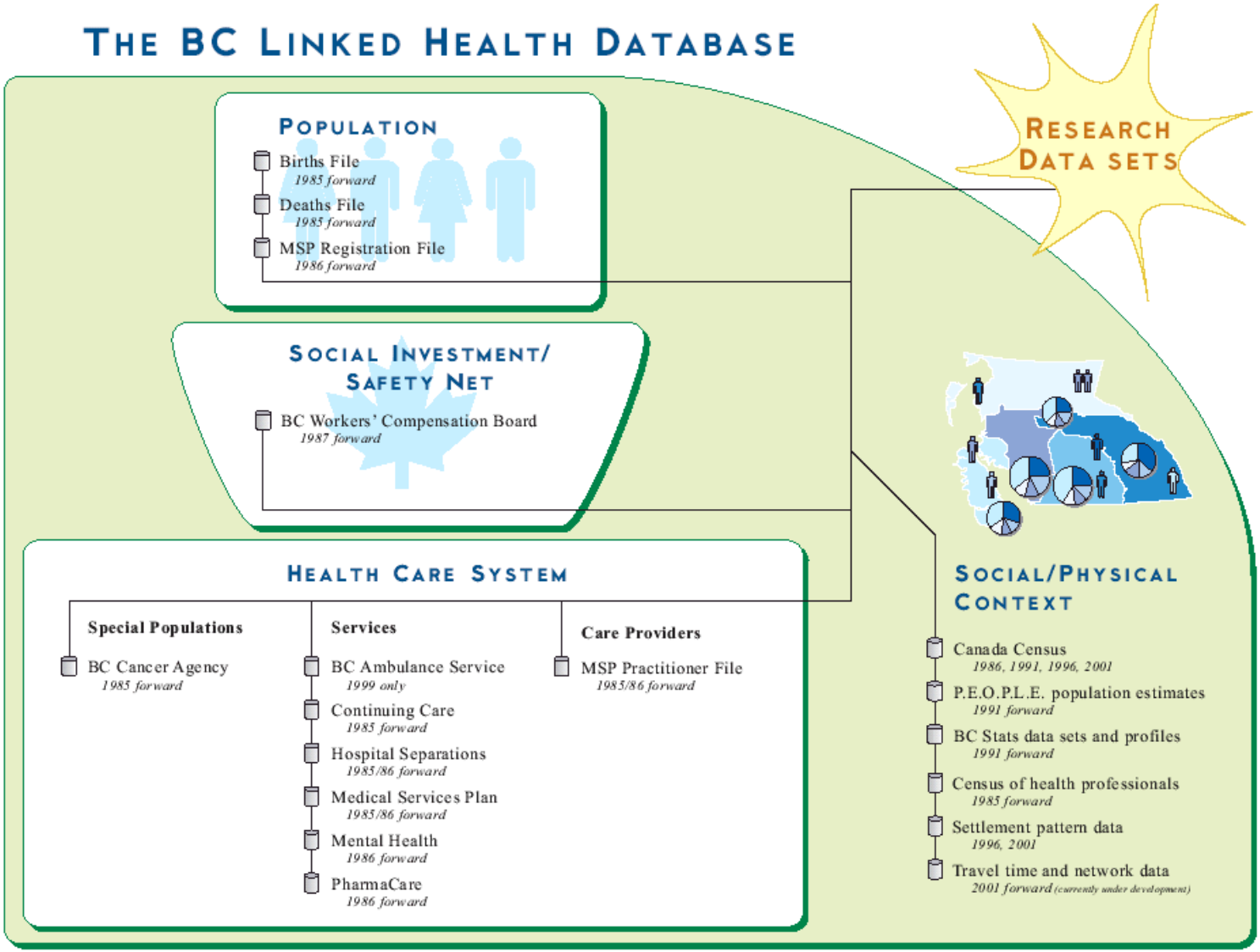
Department of Health and Social Services

Timeless Medical Systems

Ontario

This site maintained by the Government of Ontario, Canada

Multi-Professional Databases



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

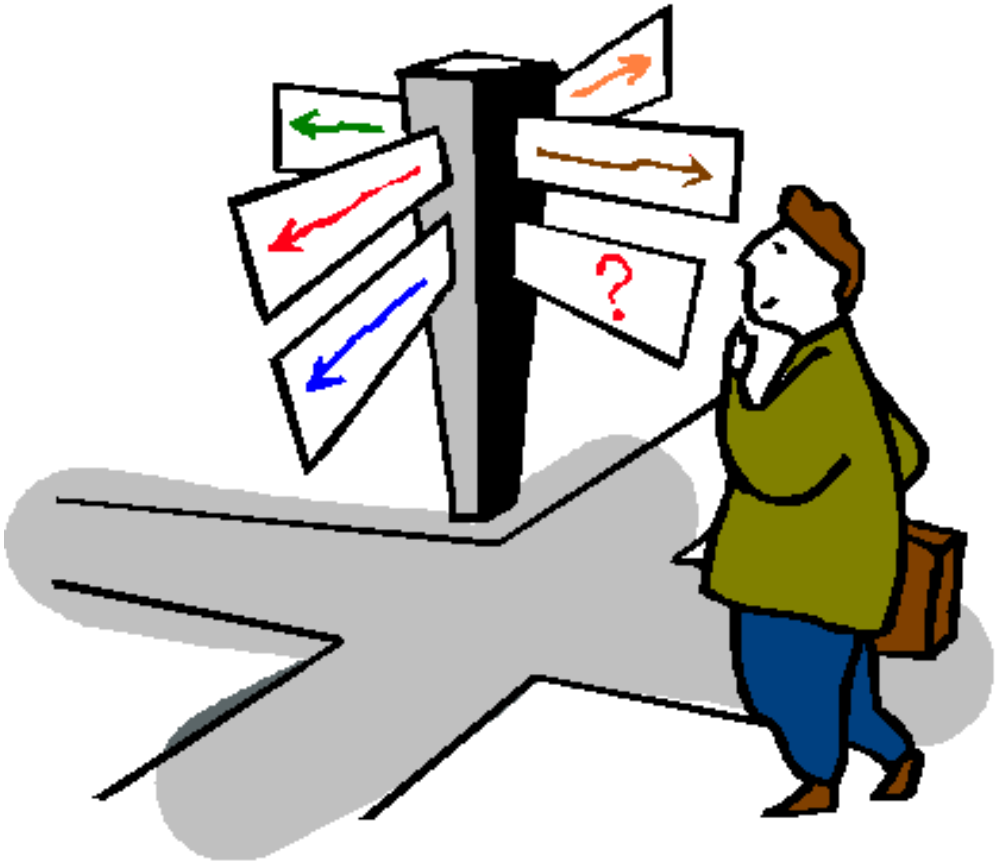
Goal:
To share knowledge and increase modelling capacity nationally

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.

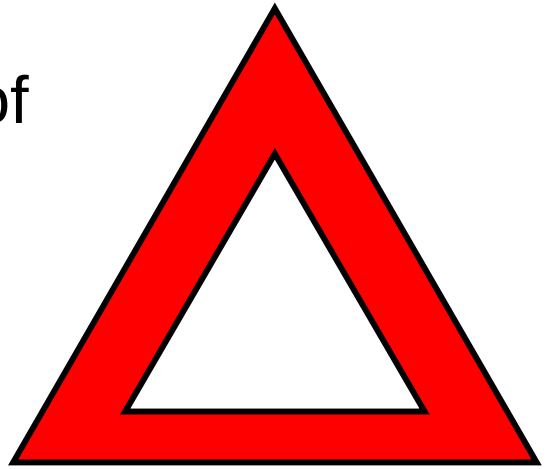
Provider Supply	**Supply Module**	**Graduate entry rates, graduate age distribution, in-migration, provider stock, exit rates**
	Training Module	**Seats, program attrition, program length, number of students, graduate out-migration**
Provider Requirements	**Productivity Module**	**Productivity, worked hours, activity-adjusted providers available**
	Needs Module	**Population, health status, level of service, service requirements, activity-adjusted providers required**

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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