

# HealthForceOntario

Evidence for Health Human Resources Planning Bulletin, August 2008

## Evidence for Health Human Resources Planning

*Message from Jeff Goodyear, Director  
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Health Human Resources Strategy Division  
Ministry of Health and Long-Term Care*

HealthForceOntario is the province's strategy to ensure that the people of Ontario have access to the right number and mix of qualified healthcare providers, now and in the future. Evidence-based health human resources (HHR) planning is essential to achieve this goal.

While I recognize the complexity of HHR planning, I am confident that we can begin to address the challenges through cooperation, open dialogue and partnership. The Ministry is working with numerous stakeholders to enhance our collective knowledge of the HHR landscape so that we can determine the requirements for a sustainable healthcare system.

To further the dialogue, the HHR Forecasting and Modelling Unit held an *Evidence for HHR Planning Workshop* for Local Health Integration Network (LHIN) planners and analysts in January 2008. The discussion on HHR evidence at this workshop was stimulating and thought-provoking. It is forums like these that allow us to share knowledge, discuss the issues at hand and build solid working relationships.

The Ministry is working hard to generate the data, tools and research needed for evidence-based HHR planning. For example, analytical tools such as the Assessing Doctor Inventories and Net-flows model, described in this bulletin, incorporate today's policies, research and data to project physician supply. The real function of these models is to test

the potential impact of new policies and initiatives through scenario modelling.

We want to ensure that planners and researchers are aware of these resources in order to stimulate an evidence-based approach towards planning. Take a moment to read this bulletin and familiarize yourself with some important HHR evidence resources and our initiatives to enhance the data and analytical capacity for HHR planning in Ontario.

Best regards,



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Produced By: Health Human Resources Forecasting and Modelling Unit, HHR Strategy Division. [healthforceontario.ca](http://healthforceontario.ca)



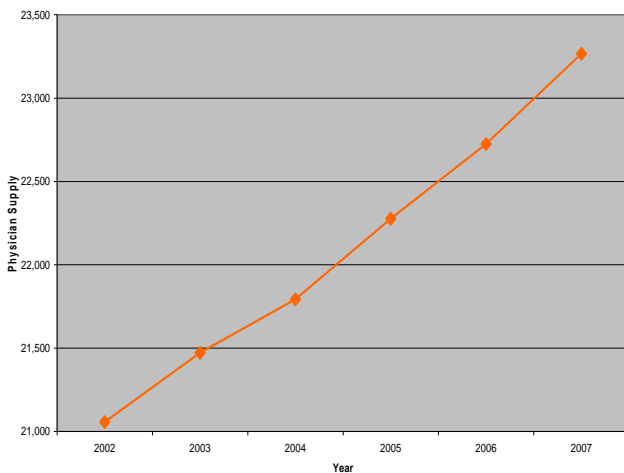
## HHR Evidence Resources

The Health Human Resources Strategy Division (HHRSD) accesses several resources that provide a wealth of information on health professions including supply, demographics, education and workload data. The following are some key sources of HHR evidence.

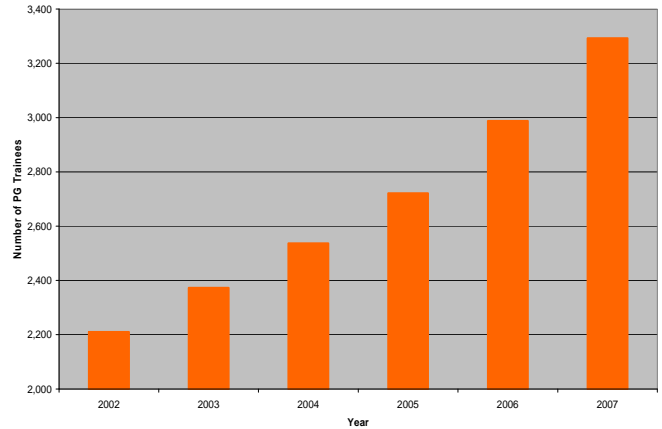
Ontario Physician Human Resources Data Centre  
Established in 1992, the Ontario Physician Human Resources Data Centre (OPHRDC) maintains physician databases to serve as a primary source of physician data. It is governed by the Ministry, the College of Physicians and Surgeons of Ontario, the Ontario Medical Association and the Council of Ontario Faculties of Medicine.

It includes two main registries: the Active Physician Registry and the Post-Graduate Medical Trainee Registry, both of which serve as the basis for two annual reports. *Physicians in Ontario* provides an annual snapshot of physician supply, distribution, specialty and demographics. *Post-Graduate Medical Trainees in Ontario* provides an annual snapshot of post-graduate trainee enrolment, level of training, specialty, school, funding source and demographics. The OPHRDC also maintains the *Physician Hospital Appointment List* that provides annual information on physicians with hospital privileges by specialty and hospital. More information is available at [www.ophrdc.org](http://www.ophrdc.org).

Ontario Physician Supply 2002-2007

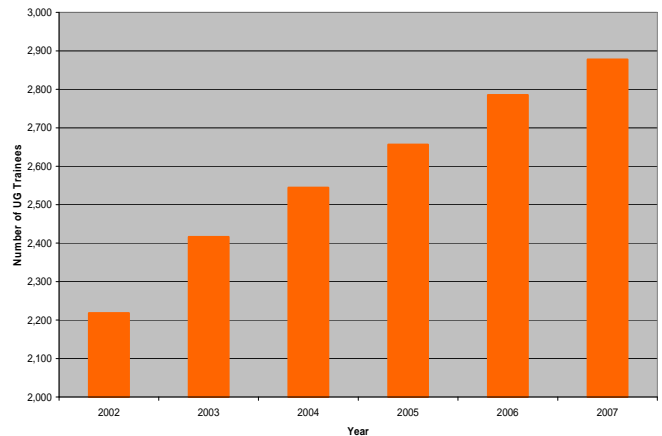


MOHLTC Funded Post-Graduate Trainees in Ontario 2002-2007



Association of Faculties of Medicine of Canada  
Formed in 1943, the Association of Faculties of Medicine of Canada (AFMC) today represents all seventeen medical faculties across Canada. It maintains two information sources: the Canadian Medical Education Statistics (CMES) and the Canadian Post-M.D. Education Registry (CAPER).

Undergraduate Medical School Trainees in Ontario 2002-2007



The CMES provides an annual snapshot of cross-Canada undergraduate medical education, including enrolment, graduation and demographic data. The CAPER provides an annual cross-Canada picture of the post-graduate education front. More information is available at [www.afmc.ca](http://www.afmc.ca) and [www.caper.ca](http://www.caper.ca).

### Canadian Institute for Health Information

The Canadian Institute for Health Information (CIHI) builds data resources on healthcare services, health spending, health human resources and population health. *The Supply, Distribution and Migration of Physicians* report provides valuable information on the mobility of physicians and allows the tracking of inter-provincial and international migration patterns of physicians. *The Health Personnel Trends in Canada* reports on aggregate-

level supply trends, regulatory environments and education requirements across Canada for a variety of health professions. This report provides useful information on inter-provincial trends. More information is available at [www.cihi.ca](http://www.cihi.ca).

#### Ontario Hospital Association Labour Market Survey

In 2001, the Ontario Hospital Association (OHA) launched the biannual Labour Market Survey (LMS) to gather information on health human resources from hospitals. The survey provides information on the supply of regulated and unregulated healthcare providers, recruitment and retention issues and current HHR planning activities. The 2007 LMS results were based on a 71% response rate from Ontario hospitals. More information is available at [www.oha.com](http://www.oha.com).

#### National Physician Survey

The National Physician Survey (NPS) is an initiative of the College of Family Physicians of Canada, the Canadian Medical Association and the Royal College of Physicians and Surgeons of Canada, to survey all physicians in Canada. This includes about 70,000 specialists and family doctors, second-year medical residents and medical students. The NPS is a comprehensive examination of physician practice profiles and trends across Canada. The national results from the 2007 survey were recently released with a 32% national response rate. More information is available at [www.nationalphysiciansurvey.ca](http://www.nationalphysiciansurvey.ca).

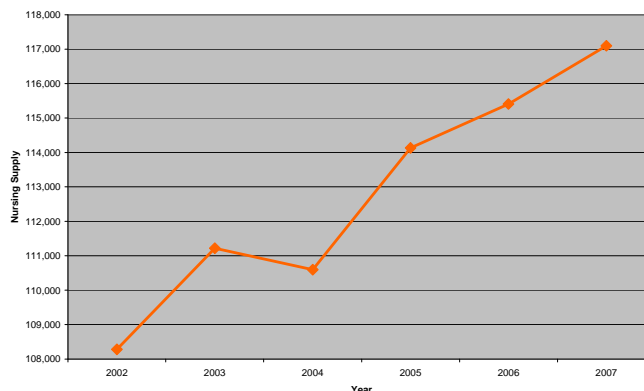
#### College of Physician and Surgeons of Ontario Survey

The College of Physicians and Surgeons of Ontario (CPSO) annual survey of licensed physicians tracks demographics, clinical practice and work patterns. The survey provides an in-depth look at Ontario's physician profile and is reported annually by the CPSO. The 2007 results were based on a significant 96% response rate from those physicians registered with the CPSO. More information is available at [www.cpso.on.ca](http://www.cpso.on.ca).

#### College of Nurses of Ontario

The College of Nurses of Ontario (CNO) produces statistical information on the nursing workforce. The Ministry utilizes the internet-based CNO Query Tool and its various statistical reports on nurses to track and monitor nursing supply. More information is available at [www.cno.org](http://www.cno.org).

Ontario Nursing Supply 2002-2007



#### *Government Resources*

##### Provincial Health Planning Database

The Ministry's Provincial Health Planning Database (PHPDB) offers clients a single and dependable source of population and clinical data – providing them with data on demand. Designed to make vast data holdings easily accessible to a range of users, it is also one of the primary sources of morbidity and mortality data in Ontario.

##### Ontario Physician Workforce Database

The Ontario Physician Workforce Database (OPWD) is an ongoing collaborative initiative between the Ministry, OPHRDC and Institute for Clinical Evaluative Sciences (ICES). The OPWD is housed at ICES and was developed by the Working Group on Data and Modelling of the Expert Panel. This working group was part of Ontario's Expert Panel on Health Professional Human Resources to study and report on physician supply in Ontario. The objective is to take physician supply beyond counting bodies to counting full-time equivalents (FTEs) based on workload. The OPWD is under continuous improvement to ensure accuracy in measuring physician workload.

##### Ontario Healthcare Financial & Statistical Database

The Ontario Healthcare Financial and Statistical (OHFS) Database is maintained by the Health Data Branch at the Ministry. It collects and reports financial and statistical information for hospitals, children's treatment centres, community care access centres, community mental health and addictions centres and long-term care centres. The OHFS database provides valuable information on regulated and unregulated healthcare providers working in these organizations, including full-time and part-time employees and new hires.

## Assessing Doctor Inventories and Net-Flows Model: How the Data Comes Together

While not an exact science, forecasting helps examine the potential future implications of today's policies. The real value of forecasting models is their ability to test various scenarios and their potential impacts in the future.

By predicting future physician supply, the Assessing Doctor Inventories and Net-flows (ADIN) model helps optimize the distribution of medical school graduates among post-graduate family medicine and several primary specialty residency programs.

The ADIN model is used to test the impact of the addition of specialty residency training positions in future years. It has been very accurate in its predictions so far, says Dr. Jim Wilson, a Kingston, Ontario urologist and immediate past Chair of the Post-Graduate Management Committee, Council of Ontario Faculties of Medicine.

Dr. Wilson notes that, while ADIN is an important tool, allocating positions across post-graduate programs requires the input of many resources. The Institute for Clinical Evaluative Sciences and the Ministry collaboratively developed the ADIN model in 2003.

"ADIN allows for forecasting depending on various inputs," says Dr. Wilson. "It's a supply side model. It predicts what the outcome will be compared to current distribution. If we add family medicine positions, for example, it will help predict what happens 5-10 years from now compared to current numbers."

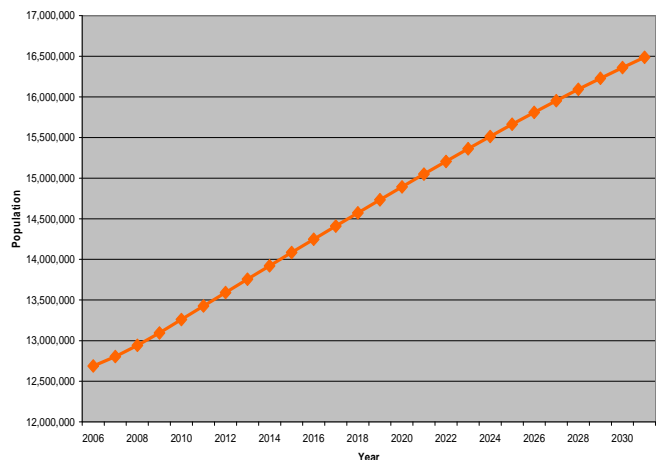
ADIN is a stock and flow simulation model. It takes current stock of physicians, adds physicians as they complete their training or enter Ontario from other jurisdictions, and subtracts physicians as they leave Ontario or retire. The data is stratified by specialty, sex and age, and with each iteration the model ages the physicians and flows them in and out depending on predicted rates. The result is forecasted physician supply in headcounts and full-time equivalents for future years.

## Building Capacity for HHR Evidence

The Ministry is committed to building data and analytical capacity to support evidence-based HHR planning. Efforts are being guided by four key questions:

- 1) What are the HHR policy and planning issues?
- 2) What data and analytics are needed to address these policy and planning issues?
- 3) Which of the identified data and analytics exist?
- 4) What are the gaps between what exists and is needed?

Ontario Population Forecast 2007-2031



*Source: 2007 Ontario Ministry of Finance, Ontario Population Projections Update, 2006-2031*

### Needs-Based Forecasting Model for Physicians

A key question in healthcare planning is, "How many physicians do we need?" The ADIN model can project how many doctors we will have in the future, but it doesn't tell us how many we need.

To address this gap in knowledge, the Ministry, in partnership with the Ontario Medical Association, has launched a project to build a population health needs-based physician forecasting model. The objective of the project is to measure and forecast health needs of the population that can be transformed into physician requirements by specialty and by LHIN. The model will also forecast physician supply and attempt to measure the gap against the predicted need for physicians in Ontario. Although this is a physician-based model, it has potential application for other health providers. The most important and innovative component of this project is that it will attempt to measure 'need'.

The Conference Board of Canada is leading the development of the model, and results from the project are expected by early 2009.

#### Career Scientists and Ontario Research Chair

Building capacity includes investing in research and experts who will continue to add to the knowledge base on health human resources. To support research in Ontario, the HHRSD has embarked on two initiatives: to support Career Scientists in HHR and to establish a permanent Ontario Research Chair in Health Human Resources.

The Ministry conducts an annual competition to support outstanding new researchers in health services – the Career Scientist competition. This competition provides researchers with the resources to pursue research in health services in Ontario. In 2007, Dr. Michel Landry of the University of Toronto was the successful winner of the HHRSD's special call for Career Scientists in HHR research. He will focus on forecasting supply and demand for rehabilitation human resources in Ontario.

As well, the Ministry partnered with the Council of Ontario Universities to establish a permanent HHR Research Chair at an Ontario university. This initiative will build new HHR research capacity in Ontario and position the province as a leader in HHR evidence and research. The HHR Research Chair will create innovative health human resources research, across and within disciplines, build expertise in forecasting and modelling and stimulate dialogue on health human resources evidence.

The Ontario Research Chair Selection Panel awarded the HHR Research Chair to McMaster University, as a result of a close competition that closed in November 2007. McMaster University is now working to recruit a qualified candidate for the Chair. The Research Chair is anticipated to be in place for 2009.

#### Allied Health Human Resources Database

40% of Ontario's regulated healthcare workforce is composed of allied health professionals. Individuals that make up this essential group provide services to patients in areas such as: diagnostics, mental health, obstetrics, oral and vision care, rehabilitation and therapeutics. The Ministry currently has a lack of timely, complete, and standard data on these important health professionals, which hinders the ability to conduct integrated HHR planning.

The Allied Health Human Resources Database (AHRDB) project arose from the Ministry's quest to answer questions such as:

- 1) How many allied health providers work full-time and part-time?
- 2) Where do they work?
- 3) How many employers do they have?

In March 2007, the Ministry successfully completed the AHRDB pilot project. The goal was to create a planning database for regulated allied health professionals with information currently held at health regulatory Colleges and to test the feasibility of the AHRDB. The long-term goal is to house standardized, consistent and comparable demographic, geographic, education and employment information on all of the regulated allied health professionals in Ontario.

The pilot project included representation from twelve regulatory Colleges incorporating thirteen professions – audiologists, chiropractors, dental technologists, dietitians, midwives, occupational therapists, opticians, optometrists, pharmacists, physiotherapists, psychologists/psychological associates, respiratory therapists and speech-language therapists. A minimum data set of thirty-nine data elements important for HHR planning was identified and existing data from the Colleges was successfully uploaded into the pilot database.

Mary Lou Gignac, Registrar, College of Dietitians of Ontario, says that her College was keen to contribute to the Ministry database and found the data-sharing experience very positive. "We appreciate that there is currently a shortage of dietitians in Ontario and our participation was really done in support of the Ministry developing greater capacity to identify labour issues and assist in solving the problem."

Gignac says she is looking forward to having the information to make comparisons among different groups and comparisons of supply side patterns in terms of geographic distribution, age trends and retirement trends. The real advantage, she said, is to be able to use supply side with reference to demand. It's a real plus that the database will allow for many users from differing backgrounds, like research, education and the LHINS. "The more people who understand and can work with this kind of data, the stronger the planning is."

“There are benefits of the AHHRDB to all parties involved,” said Hussein Lalani, Manager, HHR Forecasting and Modelling Unit. “The Ministry receives valuable information to support its HHR planning, and the regulatory Colleges, along with their members, are able to understand and compare unique trends in their respective professions’ demographic, education and employment patterns.” The success of the pilot project demonstrated the importance of the AHHRDB. As a result, over the next two years, the Ministry, in collaboration with the regulatory Colleges, will build the database with complete data on all of the regulated allied health professionals in Ontario.

### **Supply of Allied Health Regulated Health Professionals in Ontario, 2006**

<b>Profession</b>	<b>2006</b>
Audiologists	477
Chiropodists*	482
Chiropractors	3,364
Dental Hygienists	8,409
Dental Technologists	460
Dentists	7,974
Denturists	494
Dietitians	2,691
Massage Therapists	8,170
Medical Laboratory Technologists	7,069
Medical Radiation Technologists	6,082
Midwives*	323
Occupational Therapists	4,254
Opticians	2,098
Optometrists	1,505
Pharmacists	10,713
Physiotherapists	6,258
Psychologists/Psychological Associates	2,930
Respiratory Therapists	2,295
Speech-Language Pathologists	2,315
<b>Total</b>	<b>78,363</b>

*Source: Submission of active member count by respective regulatory College to the Ministry of Health and Long-Term Care, 2007. \*Chiropodists and Midwives data sourced from the Pilot Allied Health Human Resources Database, 2006.*

### **Evidence for HHR Planning Workshop for LHIN Planners and Analysts**

On January 9, 2008, the Health Human Resources Forecasting and Modelling Unit hosted the *Evidence for HHR Planning Workshop* for LHIN planners and analysts in Toronto. Representatives from eleven of the fourteen LHINs attended the workshop.

The workshop allowed for knowledge transfer to the LHIN planners and analysts on the methods and tools for HHR planning and the future direction for building HHR data and analytical capacity. Most importantly, the day allowed for the Ministry and LHIN planners and analysts to come together and engage in discussion. We shared the challenges we face in HHR planning and generated new ideas for health human resources research.

The workshop was a first step in opening the dialogue on HHR between the Ministry and the LHINs and laid the foundation for future coordination and communication.

The evaluation indicated that all LHIN participants improved their knowledge of HHR evidence as a result of the workshop. The following are some comments reported by the LHIN representatives:

*“Very much enjoyed the workshop – in particular, learning about the forecasting models being developed.”*

*“Huge issue, hard to grasp but essential!”*

*“Liked the final discussion on Chronic Disease Prevention and Management.”*

*“Important to communicate between the MOHLTC and LHINs.”*

## Meet the HHR Forecasting and Modelling Team...



**Hussein Lalani, Manager** *“Health human resources forecasting and modelling is not an exact science. Sometimes there are surprises. The aim is not to get perfect results, but to get a sense of the direction things are heading.”*

Hussein leads the team of professionals who promote the use of data and analysis to improve health human resources planning. He holds two undergraduate degrees in Psychology and Life Sciences and a Master of Public Administration with specialization in Health Policy from Queen’s University. Hussein has worked for the Ministry for ten years. He is the two time defending champion of the NFL office pool and the proud father of a baby boy.



**Dan Singh, Project Leader** *“A forecasting model is only as good as the data it uses.”*

Dan analyses HHR data and projects trends to support broader HHR planning. He is also leading the project to develop a population health needs-based physician forecasting model for Ontario. Dan has a Bachelor of Health Sciences from the University of Western Ontario and has been working for the Ministry of Health and Long-Term Care since 2005, joining the Forecasting and Modelling Unit over a year ago. Dan is a sports fanatic – on the couch and on the court.



**Anshoo Kamal, Provincial Planner** *“Clearly define what you are looking for – before you start.”*

Anshoo is the project lead on the Allied Health Human Resources Database Project and conducts analysis and research to support policy and planning. She is a Bachelor of Business Administration Graduate from York’s Schulich School of Business and is enrolled in the Master of Health Services Research program at the University of Toronto. Anshoo loves to explore big cities and is an avid reader and film buff.



**Jennifer Iannetta, Statistician** *“When you’re trending statistical data and anomalies show up, don’t panic. Check your data, check your calculations.”*

Jennifer’s job is to organize, analyze and interpret statistical data and provide project support. Jennifer has a Bachelor of Arts in Gerontology with a minor in Health Studies from McMaster University and is the newest member of the Forecasting and Modelling Unit team. She loves to travel and recently spent four months in Denmark.



**Rhianah Broomfield, Administrative Assistant** *“The HHR Policy Branch is an interesting place to work where a variety of planning issues are being addressed.”*

Rhianah provides administrative support services to both the Forecasting and Modelling and the Allied Health Human Resources Policy and Planning Units. Rhianah is a graduate of the Hospitality Management Program from Georgian College and is also a professional scuba diving instructor. She has spent the last two years teaching scuba in the Turks and Caicos Islands and recently became a certified sailor.

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