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Health Policy Research Bulletin

The Working Conditions of Nurses: Confronting the Challenges

As the largest group of health care providers, nursing professionals play an integral role in the management and delivery of health services. Over the past decade, however, reports have raised a number of concerns about nursing shortages. At the same time, research has pointed to the serious impact of negative working conditions on nurses' health. These conditions, in turn, have implications for the health care system's capacity to recruit and retain nurses, as well as for the quality of patient care.

This issue of the *Health Policy Research Bulletin* examines research on the state of working conditions facing Canada's nurses and discusses the implications for the larger health care system. In particular, this issue:

- provides a snapshot of the current nursing work force, highlighting prominent trends and areas where the three regulated nursing professions differ
- examines nurses' working conditions in light of recent health system changes, highlighting the effects of increasing demands on nurses' health and presenting newly released results from a Statistics Canada survey
- applies the supply-demand theory to examine nursing shortages, using newly developed models to predict the nursing specialties that will have the greatest shortages
- discusses the issue of patient safety, and highlights research linking working conditions and the quality of patient care, focusing on conditions that affect communication among nurses and other front-line providers
- presents new research, commissioned by Health Canada, on the challenges of translating research into action to improve the working conditions of health professionals

Finally, the Bulletin emphasizes the need for multi-level, collaborative planning, and discusses the investments being made under the *Pan-Canadian Health Human Resource Strategy*. While it is too soon to see the full impact of these investments, the authors point to some early signs of progress.

In this Issue

Canada

Our mission is to help the people of Canada maintain and improve their health.

Health Canada

New and Noteworthy

Following are web links to a sampling of relevant reports.

National Survey of the Work and Health of Nurses (December 2006)—presents information on the health and working conditions of nurses in Canada and the impact these factors have on patient care <http://www.statcan.ca/english/freepub/83-003-XIE/83-003-XIE2006001.pdf>

The New Healthcare Worker: Implications of Changing Employment Patterns in Rural and Community Hospitals (October 2006)—examines how employment patterns have evolved in rural areas of Ontario <http://www.nhsru.com/documents/Series%206%20The%20New%20Healthcare%20Worker-Rural.pdf>

Workforce Trends of Regulated Nurses in Canada, 2005 (October 2006)—three reports provide data on the supply and distribution of regulated nurses in Canada, including provincial and territorial distribution <http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=AR_1173_E>

Staffing for Safety: A Synthesis of the Evidence on Nurse Staffing and Patient Safety (September 2006)—synthesizes evidence on the links between nurse staffing and patient safety <http://www.chsrf.ca/research_themes/pdf/staffing_for_safety_policy_synth_e.pdf>

Teamwork in Healthcare: Promoting Effective Teamwork in Healthcare in Canada (June 2006)—examines characteristics of effective teams, successful interventions in implementing and sustaining teamwork in health care, and barriers to implementation <http://www.chsrf.ca/research_themes/pdf/teamwork-synthesis-report_e.pdf>

What's Ailing our Nurses? A Discussion of the Major Issues Affecting Nursing Human Resources in Canada (March 2006)—reviews six major research documents on Canadian nursing human resource issues <http://www.chsrf.ca/research_themes/pdf/What_sailingourNurses-e.pdf>

Satisfied Workers, Retained Workers: Effects of Work and Work Environment on Homecare Workers' Job Satisfaction, Stress, Physical Health, and Retention (December 2005)—explores how characteristics of home care affect workers <http://www.chsrf.ca/final_research/ogc/pdf/zeytinoglu_final.pdf>

Navigating to Become a Nurse in Canada: Assessment of International Nurse Applicants (Final Report) (May 2005)—presents findings on international mobility of nurses, assessment of credentials, and challenges and integration into the Canadian work force <http://cna-aiic.ca/CNA/documents/pdf/publications/IEN_Technical_Report_e.pdf>

About the Health Policy Research Bulletin

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Working Conditions:

An Underlying Policy Issue

In this issue, Nancy Hamilton, Managing Editor of the Health Policy Research Bulletin, *speaks with* **Sandra MacDonald-Rencz** *(SMR), Executive Director of the Office of Nursing Policy, Health Policy Branch, Health Canada;* **Anil Gupta** *(AG), Director of the Microsimulation Modelling and Data Analysis Division, Applied Research and Analysis Directorate, Health Policy Branch, Health Canada; and* **Robert Shearer** *(RS), Director of the Health Human Resource Strategies Division, Health Care Policy Directorate, Health Policy Branch, Health Canada.*

Q *Over the past few years, several major health reports have focused on the working conditions of nurses. What's behind this recent interest?*

SMR: Yes, there has been an increased interest in the nursing work force. It started almost a decade ago with concerns over existing and future nursing shortages. Depending on which report you read, we're probably looking at significant shortages of anywhere from 80,000 to 100,000 nurses by 2016.

AG: We need to look at what we did in the past and learn from that as well. For example, between 1993 and 2004, the population increased about 9%, while the nursing population increased by less than 4%. That translates into a shortage of 60,000 nurses right there.

SMR: When we began to look more closely, we realized it wasn't just a matter of hiring more nurses, but of better managing those already in the work force. Research showed that within the first five years of graduation we were losing between two and three nurses for every five graduates. This forced us to examine the working conditions of both new and experienced nurses.

RS: Sandra summarizes it quite nicely. We need to consider the root causes of nursing attrition and to look at ways of keeping our qualified, trained nurses in Canada. It's an important part of health human resource planning and within Health Canada we are working closely with the Office of Nursing Policy to make that happen.

AG: We also need to recognize that health care is highly labour intensive, with nurses being the largest group of health care providers. As a result, system-wide issues cannot be addressed without looking at the productivity of the nursing work

force. It's not a matter of asking nurses to work harder; they are stretched as it is. Productivity is related to working conditions, which in turn are related to absenteeism, retention, the adoption of new methods and technologies, the roles and responsibilities of nurses, early retirement, and morale. All of these things are related to how people are trained, encouraged and generally treated within the system.

***Q** What are these reports saying about nurses' working conditions and what does the term actually mean?*

SMR: The term "working conditions" generally encompasses a range of issues, from workload and scheduling to system-wide issues, like professional identity and scope of practice. The reports have tended to follow the research, which shows that nursing workload has increased significantly over the past decade. In addition, we know there have been significant cuts to the health system. We also know that people are staying in hospital for shorter periods, and are sicker while they are there. Combine this with the fact that more nurses are working part time, and the overall result is fewer "nursing hours" employed in the health system. Studies have shown that all of these factors come together to have an impact on the job satisfaction of health care workers, particularly nurses.

AG: Job satisfaction is key to keeping employees in any organization. The OECD (Organisation for Economic Co-operation and Development) recently conducted a survey among nurses in the United Kingdom, Canada, Scotland, Germany and the United States. Although each country has a different type of health care system, one thing is common—high levels of dissatisfaction among nurses, ranging from 33% to 47%. On top of this, about 17% of nurses surveyed in each country were planning to leave the profession in the next year. If such statistics were applied to any other profession, it's likely that alarm bells would be ringing.

SMR: Working conditions are not only affecting nurses' job satisfaction, but their health as well. Research shows that nurses are one of the most unhealthy employee groups in the country. It also shows that working conditions are significant predictors of increased injury- and illness-related absenteeism, which in turn lead to increased overtime and staff turnover. Combine that with nursing demographics and you have an older work force in unhealthy work conditions. For example, a 2005 CIHI (Canadian Institute for Health Information) report shows that the average age of nurses is 44.7 years. There is a two-to-one ratio of nurses aged 50 and over, compared to those aged 35 and younger.

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AG: I'd like to return to the issue of overtime. Between 2002 and 2004, nurses' overtime increased by 20%. As Sandra said, this has taken a toll on nurses' health. We need to recognize that the majority of nurses are women, so overtime is also an issue for nurses' families.

***Q** What are the implications of nurses' working conditions for the health system as a whole?*

RS: First, let me say that an effective health system is one of many factors that determines the health of a population. Research has shown that a healthy work force is a prerequisite for a quality health system. Consequently, promoting healthy working conditions for all health providers, including nurses, is an important strategy for improving the health of Canadians.

AG: As we said, Canada is experiencing a serious shortage of nurses. This issue is complex and involves looking at both supply and demand. We know that poor working conditions are influencing the supply side by limiting our capacity to recruit new nurses and retain those we already have.

RS: Nurses are an important part of our health care system, not only because of their numbers but also because of the role they play in virtually every aspect of health care delivery. The issues affecting nurses have an impact on the entire health care team and the way they perform. Because the well-being and productivity of nurses are key to Canada's health care system, we need to find ways to improve the underlying issues related to working conditions.

SMR: Adding to what has been said, I believe there are two reasons why we should care—cost and quality of care. Cost is related to lost time due to injury and sick time, as well as overtime needed to make up the hours. Both require significant investment. If we addressed working conditions straight on, we could save this money and put it back into the system. The other reason relates to quality of care. Research is now showing a strong correlation between job satisfaction and quality of care and patient outcomes that we had not been able to demonstrate before.

There is also the issue of "wait times." While we don't have hard evidence linking nurses' working conditions to wait times, we do have anecdotal information about operating room closures and restrictions due to an insufficient number of qualified nurses to assist in the operating room or the intensive care unit. When we speak about wait times, we also need to recognize that what's important is timely access to quality care. And as we said earlier, working conditions are closely related to the quality of patient care.

Nurses are an important part of our health care system, not only because of their numbers but also because of the role they play in virtually every aspect of health care delivery. The issues affecting nurses have an impact on the entire health care team and the way they perform.

Q Are working conditions similar for nurses across the country or does geography or work setting play a role?

SMR: The recently released results of the Statistics Canada survey on the work and health of nurses (see article on page 17) has shed some light on this issue. We will be studying the results to see where working conditions are having the biggest impact. Overall, however, the situation seems widespread across the country.

At the same time, there are anecdotal reports of differences across practice settings. For example, concerns about working conditions are the most acute in hospital and institutional settings. Home care can also be difficult since, because of outsourcing and competitive bidding, nurses are often treated as a contingent work force. Most organizations keep a small staff and bring nurses in as needed, limiting the continuity that nurses have with their patients. It appears that the public health sector provides the most positive work environment for nurses, but we will learn more as we study the survey results.

RS: Sandra, as you mention in your article (see page 7), Health Canada—through the First Nations and Inuit Health Branch—is responsible for the delivery of health services to First Nations and Inuit communities via health centres and nursing stations. Working conditions here pose unique challenges, often because of the isolation.

AG: Although working conditions vary across practice settings, from hospitals to home care, I believe we need to first concentrate our efforts on the hospital sector. There are a couple of reasons for this. First, our statistics, and therefore our quantitative policy analysis, are predominantly for this sector. Second, this is where just under 70% of our nurses work and where working conditions appear to be having the greatest impact.

SMR: Anil, you're right. And, over the past few years, governments have begun to recognize the importance of investments in this area. That's why we've decided to focus this issue of the *Health Policy Research Bulletin* on nurses' working conditions in hospital and institutional settings.

Q What have governments been doing to address the working conditions of nurses? Also, what type of investments has Health Canada been making together with our partners?

RS: First, solutions are required at multiple levels—at the level of the work force as a whole and at the level

of the individual workplace. Health care providers, communities and health care organizations all play important roles. Effective health policy is also essential. And because the nursing work force is highly mobile, working conditions are a factor in nurses moving from one region or province to another. For this reason, collaborative, national-level planning has been a priority, and we now have a new *Framework for Collaborative Pan-Canadian Health Human Resource Planning* (see article on page 36) that has been approved by both federal and provincial/territorial governments. We are starting to work with stakeholders to implement it in a way that will make a difference in health human resources planning.

SMR: As well, the investments being made through the *Pan-Canadian Health Human Resource Strategy* are extremely important. Through it, Health Canada initiated the Healthy Workplace Initiative in 2001. This Initiative aims to improve the working conditions of all health care providers, including nurses, and has invested $4 million to support the expansion of healthy workplaces across the country. Provinces and territories have also made significant investments. For example, many provinces have developed nursing strategies, which look at workload issues and how to create more positive work environments.

AG: On the research side, Health Canada has established an internal capacity to forecast the demand for nurses. With new data from CIHI, we are developing tools to predict the nursing specialties that will have the greatest shortages. We are also developing models to help us determine the effectiveness of different incentives in reducing shortages. For example, we need to know the effects of improving working conditions, educating more nurses or delaying retirements.

The investments being made through the *Pan-Canadian Health Human Resource Strategy* are extremely important. Through it, Health Canada initiated the Healthy Workplace Initiative in 2001. This Initiative aims to improve the working conditions of all health care providers, including nurses, and has invested $4 million to support the expansion of healthy workplaces across the country. Provinces and territories have also made significant investments. For example, many provinces have developed nursing strategies, which look at workload issues and how to create more positive work environments.

RS: I'd like to mention a couple of areas where we've made changes and are beginning to see some progress. First, Canada has increased the number of positions available for educating nurses. We are also working to ensure that nurses immigrating to Canada can enter the work force. Canada remains a highly desirable country for health professional immigration and internationally educated nurses continue to be an important resource. Health Canada, through its Internationally Educated Health Professionals Initiative, is supporting efforts to reduce barriers and to increase the integration of these health care professionals into Canada's work force.

Q *Picking up on Bob's point that we are beginning to see progress in some areas, are we seeing a return on our investments? Are working conditions beginning to improve?*

SMR: I think we are starting to see some of the impacts of our investments. For example, a 2002 report which used Statistics Canada Labour Force Survey data for the period 1987–2002 found a significant amount of time lost due to illness and injury in nurses. However, the subsequent 2006 report reviewing the period 2002–2005 noted a slight decline.

We will be studying the results of the Statistics Canada survey on the work and health of nurses, which we hope will also show some positive returns. We intend to do a follow-up in four years to document our progress over time.

But, just because we're starting to see a turn, we can't feel that our work is done. We're still going to see a significant decline in the nursing work force in the years ahead and the work force is getting older. We want to ensure that the nurses we do have stay healthy and continue working so that we can continue to provide the high quality of service we have in the past.

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The Nursing Work Force:

A Current Snapshot

This article highlights data from the Nursing Databases at the Canadian Institute for Health Information (CIHI) and from a work force survey conducted by the First Nations and Inuit Health Branch (FNIHB), Health Canada. It provides a snapshot of the current nursing work force, highlighting prominent trends and areas where key characteristics differ.

Nurses play an integral part in the management, delivery and research of health care services. As the largest component of the health work force, nursing professionals accounted for more than one third of the approximately 828,000 Canadians employed in health care in 2005.[1] Canada's nurses number five for every doctor.[2] Their work complements that of other health care providers in every health care setting across the entire continuum of health services—from health promotion and prevention to diagnosis, treatment and rehabilitation. It is nearly impossible to receive health care in Canada without the expertise and knowledge of a nurse.

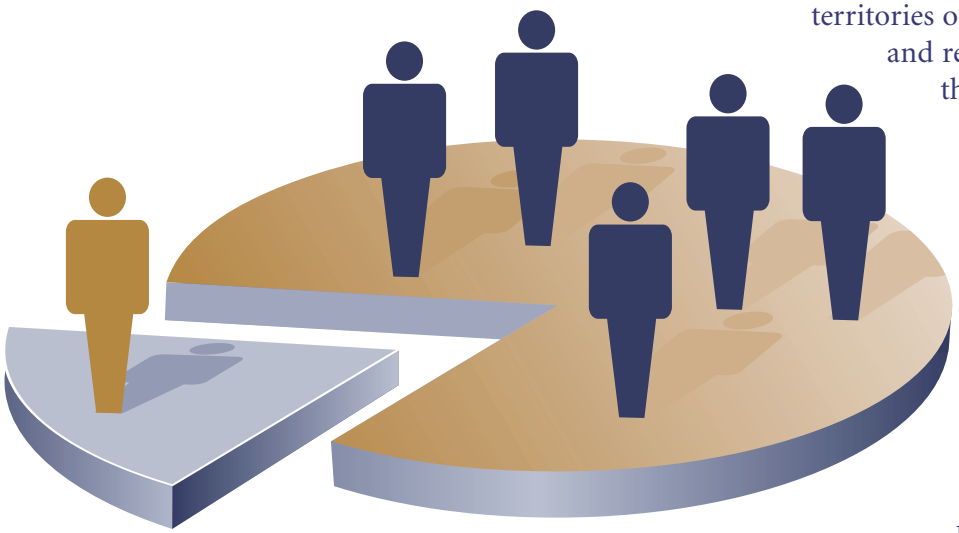
Composition of the Nursing Work Force

Although one profession, the nursing work force of more than 320,000 licensed and regulated members is regulated by three distinct bodies depending upon their scope of practice:

- registered nurses (RNs)
- registered psychiatric nurses (RPNs)
- licensed practical nurses (LPNs)

RNs and LPNs are currently regulated in all 13 provinces and territories of Canada, whereas RPNs are educated and regulated as a separate profession only in the western provinces of Manitoba, Saskatchewan, Alberta and British Columbia.

Registered nurses are the largest regulated health care provider group in Canada. Of the three regulated nursing professions, they have the broadest scope of practice and generally the highest level of decision making and education. RNs must complete a nursing program either at a baccalaureate or diploma level. They must also register with



Canada's nurses number five for every doctor.

their respective provincial or territorial nursing regulatory body, which permits them to perform the authorized functions of an RN. By the late 1990s, most provinces had announced a four-year baccalaureate degree as a requirement for entry into the practice of nursing in their respective jurisdictions within the next decade.

After completing their degree, RNs may obtain an advanced degree in nursing or national certification in 14 specialties. With additional education, RNs can become clinical specialists, educators or nurse practitioners (NPs), for example. An NP is an RN with additional education in health assessment, diagnosis, and management of illnesses and injuries.[3] NPs can offer some services typically provided by physicians (e.g., ordering tests and prescribing drugs) and may play an important role in isolated or inner city communities where physician shortages sometimes occur.

Licensed practical nurses are the second-largest regulated health profession in Canada. Because registration or licensure as an LPN in Canada requires graduation from an approved LPN diploma program, LPNs have a narrower scope of practice than RNs. Like RNs, all provinces and territories have LPNs who work in a variety of settings, with almost 40% working in the long-term care sector. In Ontario LPNs are called registered practical nurses.

Registered psychiatric nurses represent the largest single group of mental health professionals in Manitoba, Saskatchewan, Alberta and British Columbia where they are a separate regulated health profession. RPNs share many characteristics with RNs; however, they receive their basic education in psychiatric nursing at the diploma or baccalaureate level—with special educational focus being placed on psychiatric and mental health issues and care delivery.

Enhancing the Nursing Supply

Foreign-educated nurses accounted for 6.9% (20,787) of the nursing work force in 2005 (excluding Québec LPNs, for which location of graduation data were not available). The most common countries of graduation were the Philippines (29.0% of all foreign-educated), the United Kingdom (20.8%) and the United States (6.6%). The work forces of British Columbia (13.5%) and Ontario (10.1%) had the highest concentration of foreign-educated nursing professionals in 2005. Together, graduates from foreign countries and from other Canadian provinces account for almost 40% of British Columbia's nursing professionals—the highest rate in the country.

Distribution of Canada's Nurses

Overall, 81.2% of nurses are located in Canada's largest cities,[4] with 10.3% in remote areas and another 8.3% in rural areas. These proportions have remained relatively unchanged for several years.

Nurses employed in urban centres are more likely than their rural and remote counterparts to work in specialized fields such as paediatrics or oncology. Conversely, those in rural and remote communities are more likely to be involved in several clinical areas of practice.

Nurses on the move

LPNs are less likely than RNs or RPNs to move to another province following graduation. In 2005, only 7.6% of Canadian LPN graduates were employed in a province or territory different from the one in which they graduated—this compares to rates of 11.5% for RNs and 14.9% for RPNs.

For those Canadian graduates who do move after graduation, the provinces of Ontario, Alberta and British Columbia are the most common destinations. This pattern closely mirrors the general east-to-west pattern of migration for the Canadian population as a whole.

A Demographic Profile

A closer look at the demographics reveals some characteristics of nurses that are important in work force planning.

Most nurses are female, but . . .

Historically, the vast majority of nurses have been women. This continues to be reflected among RNs—94.6% in 2005 were female. However, the proportion of male nurses has been increasing slowly—from 2.6% of RNs in 1985 to 4% in 1995, up to 5.6% in 2005. When

Figure 1: Age Distribution of RN Work Force in Canada, Selected Years, 1985-2005

Source: Canadian Institute for Health Information, 2005.

LPNs and RPNs are considered as well, males represent a slightly higher proportion of the entire nursing work force, at 6.1% in 2005.

In the specialties of psychiatry and mental health, the proportion of females to males was less dramatic. For example, in 2005, women made up 77.4% and men 22.6% of the RPN work force. Of the RN population working in mental health, the ratio of women to men was approximately 6:1 (85.4% women to 14.6% men). Among mental health LPNs, close to one quarter were men (23.4%), although men comprised only 6.8% of all LPNs.

The work force is aging

The average age of nursing professionals is the highest it has ever been— 44.7 years as of 2005. Moreover, almost 40% of nurses were 50 years or older, outnumbering those aged 34 years and younger by almost two to one.

The nursing work force has been aging steadily over the past 20 years, as Figure 1 shows. In 1985, most RNs in Canada were in the 30–34 year age group; 10 years later in 1995, most were in the 40–44 year age group; as of 2005 most were in the 50–54 year age group. It is important to consider this trend given that the average age of retirement for nurses is approximately 56 years.

A contributing factor to this aging trend is a general increase in the age of nursing graduates. Among those employed in 2005, 13.2% of RNs were aged 30 or older at the time of graduation (compared to 9.4% in 1995). While trend data are not available for LPNs and RPNs, it is interesting to note that in 2005, when compared to RNs, a higher proportion of these nurses—27.1% of LPNs and 17.1% of RPNs—were aged 30 or older when graduating from their initial nursing program.

The average age of nursing professionals is the highest it has ever been—44.7 years as of 2005. Moreover, almost 40% of nurses were 50 years or older, outnumbering those aged 34 years and younger by almost two to one.

Higher education is on the rise

In 2005, more than one third (34.0%) of all RNs had a degree in nursing. However, among recent graduates (those graduating since 2002), the rate was considerably higher (40.8%). The increasing number of baccalaureate-prepared RNs is partly due to the continued implementation of baccalaureate entry-to-practice requirements across Canada.

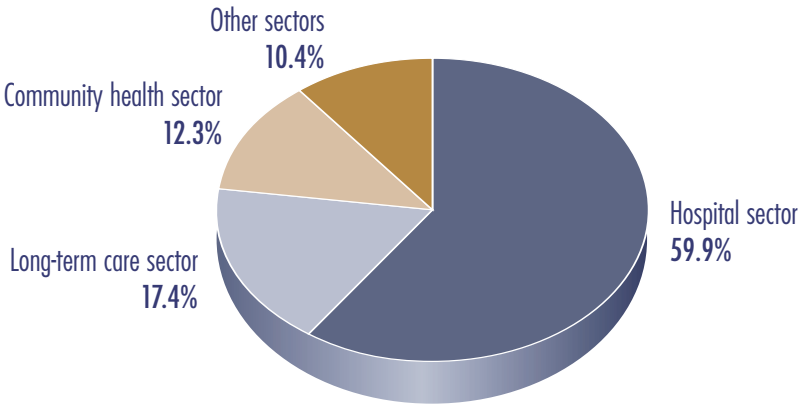
Practice Settings

Nurses work in every health care setting across the entire continuum of health services—from the hospital to community care settings, including the home. Although the majority of nurses work in hospitals, the data show that some changes are beginning to occur.

Most nurses work in hospitals

The hospital sector remains the largest employer for all nurses—in 2005, hospitals were the workplace for six in ten nurses (59.9%). At the same time, 17.4% of nurses were employed in the long-term care

Figure 2: **Nursing Work Force, by Employment Sector, 2005**



Source: Canadian Institute for Health Information, 2005.

sector in facilities such as nursing homes or residential care facilities. Another 12.3% worked in the community health sector at home care agencies or community health centres. The remaining 10.4% worked in areas as diverse as educational institutions, correctional agencies, occupational health offices or research facilities (see Figure 2).

A closer look at each nursing profession

While the RN work force tends to cluster in the hospital sector, the LPN and RPN work forces tend to be more evenly distributed across sectors. The majority of RNs (62.6%) worked in the hospital sector in 2005, compared to 46.4% of LPNs and 40.6% of RPNs. LPNs are also likely to work in the long-term care sector (38.6%), while RPNs are evenly split between the community health (23.2%) and long-term care (21.8%) sectors.

There appears to be a general, but gradual, trend towards the community health sector for the RN and RPN work forces. For example, the percentage of RNs working in community health centres almost doubled in the past 12 years, from 5.8% in 1993 to 10.1% in 2005.

Roles and career paths

Most nursing professionals work in direct patient care. Only a small proportion (less than 6% in 2005) works as managers. A closer look at the specific professions, however, shows some differences—RPNs are more likely to be managers (12.1%) than RNs (6.9%) or LPNs (1.2%).

Looking at licensed nurse practitioners, in 2005, 76.8% identified their current position as nurse practitioner at the time of registration. The remainder self-identified their primary role as manager (2.9%), staff nurse/community health nurse (8.9%), instructor/professor/educator (3.5%), and other positions/not stated (7.9%).

Both the RN and RPN work forces appear to follow a similar, general career path, starting their nursing careers in the hospital sector before moving to other sectors over time (see Figure 3). This does not seem to hold for the LPN work force, whose most recent graduates are as likely to work in the hospital sector as those who graduated more than 25 years earlier.

Working in Public Health

Public health nurses form a subset of the community health nursing work force. It is not currently possible to accurately measure the number of LPNs, RNs, NPs and RPNs working in public health (as distinct from the broader pool of community health nurses). However, provincial and territorial regulatory bodies have begun implementing the necessary changes to their annual registration forms to do so. The first results from these changes will appear in CIHI's 2007 nursing statistics.

Our Supply of Nurses

The 2005 regulated nursing work force included 251,675 employed RNs—representing 78.3% of the total—as well as 64,951 (20.2%) employed LPNs and 4,964 (1.5%) employed RPNs.

Trends over time

After a period of growth in the early 1990s and fluctuation mid-decade, the number of nurses registering for practice declined in the late 1990s. However, growth in registration began again (at least for the RN and LPN professions) after 2001. By 2005, RN registration was slightly higher (5.6% higher) than it was in 1990. In contrast, registration of RPNs and LPNs was lower—10.9% and 12.6%, respectively.

As the RN registrations increased, so did the size of the RN work force —by 4.3% between 2003 and 2005. Over the same period, the LPN work force increased by 2.9% and the RPN work force fell by 2.8%.

Although licensed nurse practitioners represent less than 1% of the RN population, they too are growing in numbers. In 2005, there were 1,026 nurse practitioners in Canada, up from 912 in 2002.

Employment Characteristics

For all nursing professions, employment rates are high. In 2005, most nurses (93.0%) were employed at the time of registration. Only 5.6% were unemployed, while another 1.4% failed to state their employment status. However, headcounts do not tell the full story, since approximately half of the nursing work force is employed on a part-time basis (see *Using Canada's Health Data*, page 44).

Full-time, part-time, casual

Overall, slightly more than half of nurses (53.8% in 2005) had full-time employment, although rates vary by profession. The highest rate of full-time employment is for RPNs (67.0%), while slightly more than half of LPNs (55.4%) and slightly less than half of RNs (46.9%) claimed full-time status. Rates of full-time employment are substantially higher for nurse practitioners (75.9%) than for all RNs. These rates have remained relatively stable over the past several years (see *Nursing Shortages*, page 21).

Renewing RN Licences

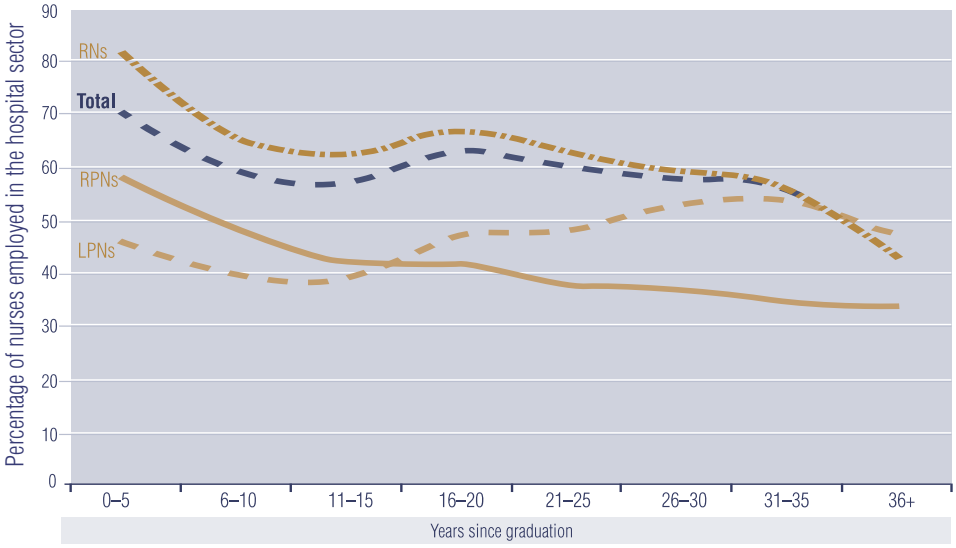
In 2004, almost all (96.3%) of RNs renewed their licence in the same province or territory as the previous year. The renewal rate is typically lower in the northern territories, where short-term relief staff from the southern provinces supplement northern nursing work forces. The short-term relief staff do not necessarily return every year.

Working in Mental Health

Rates of full-time employment are generally higher for those working in mental health than for those working in other areas of direct patient care.

In 2005, almost two thirds (64.6%) of the mental health nursing work force was employed full time, compared to 53.2% for nurses working in other areas of direct patient care.

Figure 3: Percentage of Nurses Employed in the Hospital Sector, by Number of Years since Graduation, 2005



Source: Canadian Institute for Health Information, 2005.

Rates of casual employment have remained stable over the past several years across most nursing professions, including for RNs (11%), nurse practitioners (4%), and RPNs (6.5%). For the LPN work force, however, casual employment rates appear to be slowly increasing, from about 15% in 2003 to almost 17% in 2005.

More than one employer

Some nurses are employed by more than one nursing employer—in fact, many part-time nurses work for multiple employers to achieve the equivalent of full-time work. In recent years, the proportion of the nursing work force with more than one employer has remained unchanged at approximately 14%.

Health Canada as employer

While health care delivery in Canada is the responsibility of provinces and territories, Health Canada, through the First Nations and Inuit Health Branch (FNIHB) is directly responsible for the delivery of health services to First Nations and Inuit Communities (see page 12).

Summary

While the nursing work force may be viewed as a single group with many common challenges, this article has shed light on the unique and sometimes contradictory trends, experiences and challenges of each of Canada's regulated nursing professions. Understanding the current supply of nurses is vital to successful health human resources planning for the future. The objective and comparable data presented here support decision making and policy development by a wide variety of health care governments and stakeholders.

First Nations Inuit Health Branch Nursing Work Force

The First Nations and Inuit Health Branch (FNIHB) of Health Canada works with First Nations and Inuit communities to maintain and enhance the health of Aboriginal peoples by providing health services to status Indians living on reserve, to communities in the three territories, and to Inuit. Registered nurses are the largest segment of health care providers to First Nations and Inuit communities.[5]

Nurses employed by FNIHB provide their services in several different types of health service facilities. **Nursing stations** are located in isolated/remote communities where there are no year-round, readily accessible roads to other health care facilities. Community health nurses, with assistance from support personnel, provide primary health care including disease prevention and health promotion activities. Nurses carry out assessment and management services for health problems through treatment and some emergency services. **Health centres** are located in rural areas where access to tertiary care facilities is within driving distance. They are staffed by one or more community health nurses who provide a range of public health services and community health programs aimed at health promotion and disease prevention. **Other health facilities** include two FNIHB hospitals in Manitoba.

FNIHB Nurses at a Glance

Of the approximately 700 FNIHB hired nurses, only a small proportion (8%) is under 30 years of age, while 40% are over age 50. The current FNIHB nursing work force is older than the overall RN population of Canada in 2004—suggesting potential difficulties in replacing nurses who retire in the next few years. The overall age mix of FNIHB nurses varies considerably according to location and other characteristics.

When compared to nurses in Canada overall (in 2004), FNIHB nurses include a substantially higher proportion with either a bachelor's or master's degree (59% of FNIHB nurses compared to 32% of all nurses), and a much smaller proportion with an RN diploma as their highest education level (41% of FNIHB nurses compared to 68% of all nurses).

Approximately one third (63%) of FNIHB nurses have direct patient care as their primary area of responsibility, with a much smaller proportion in management (19%) and education (10%) roles.

A high proportion of FNIHB nurses is employed in stable jobs—86% work in indeterminate or term positions and 76% work full time.

Please note: Full references are available in the electronic version of this issue of the Bulletin: <http://www.healthcanada.gc.ca/hpr-bulletin>.

Working Conditions of Nurses:
A Cause for Concern

M. Victoria Greenslade, *RN, PhD, Office of Nursing Services, First Nations and Inuit Health Branch, Health Canada, and*
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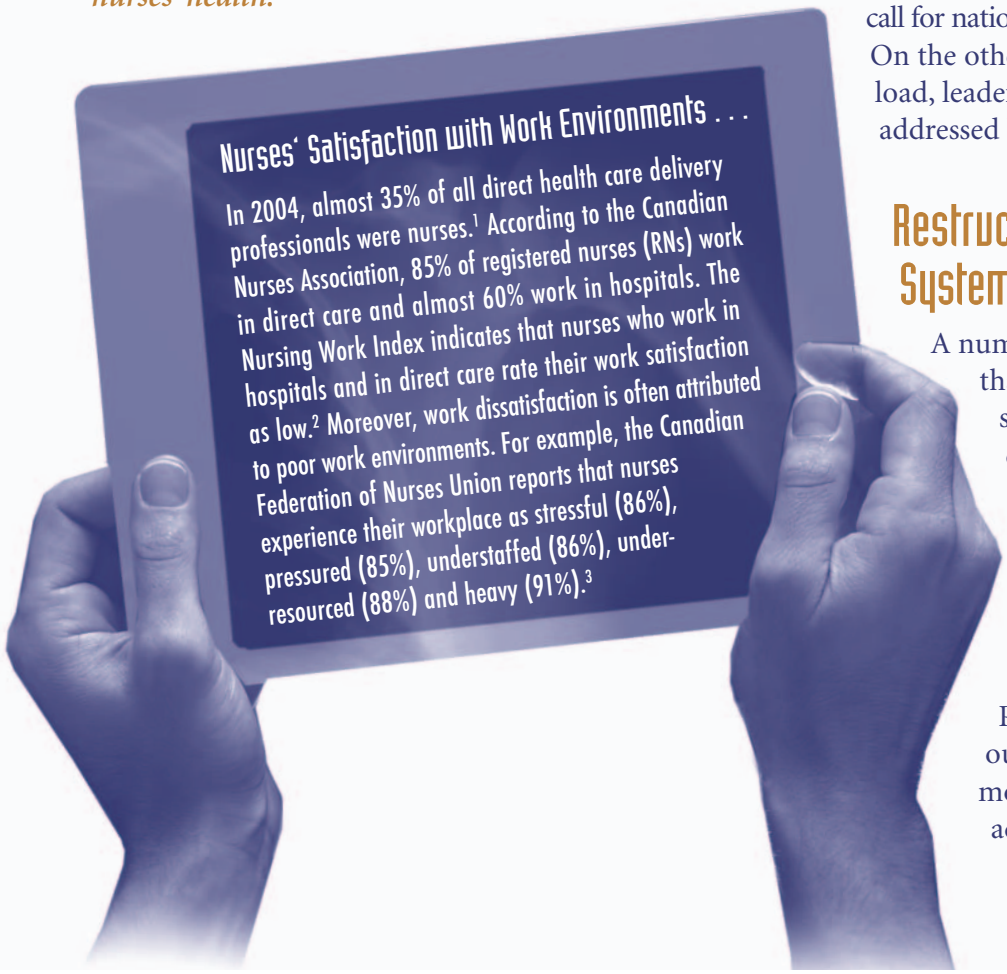
Nurses' working conditions not only affect the health and well-being of individual nurses, but the efficiency of the entire system, including its capacity to attract and retain nurses. This article examines nurses' current working conditions in light of changes to the health system in the past decade and also highlights the implications of increasing system demands for nurses' health.

Canada has been experiencing a nursing shortage for some time. Research-based evidence suggests that this shortage will increase significantly in the next decade. As discussed in the interview on page 3, it is a problem that cannot be solved by simply recruiting more nurses—but, rather, by addressing the underlying causes. These include, among others, the quality of the conditions in which nurses practise, and their experiences in the nursing work force as well as in their particular workplace.

Workplace and Work Force Issues

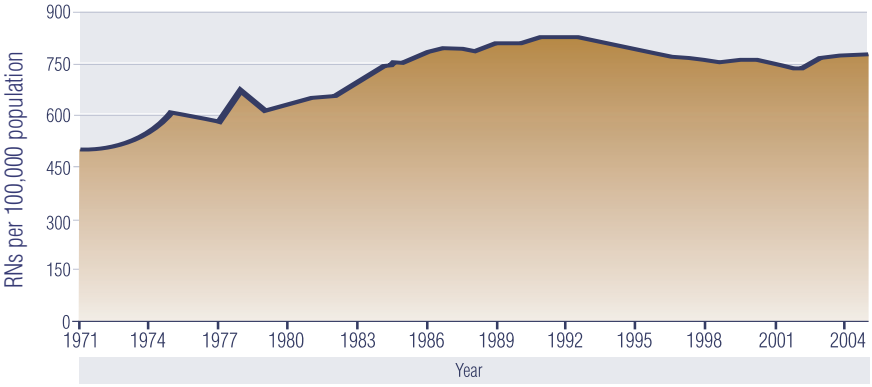
Two important components must be considered when looking at nurses' working conditions: workplace and work force. Work force issues of education and training, scope of practice and health human resource planning all call for national and/or provincial action and approaches. On the other hand, workplace issues—such as workload, leadership, scheduling and safety—need to be addressed by individual employers.



Restructuring in the Health Care System—Impacts on Nurses' Health

A number of health care restructuring initiatives that took place in the 1990s focused on system-wide fiscal restraint and had a direct impact on health care work environments. Inpatient hospital stays were shortened, care was transferred to outpatient and community settings, and nurse-to-patient ratios were reduced[4]—as were those of nursing management, support staff and ancillary services. Patient acuity levels increased, inpatient, outpatient and community care became more complex, nursing responsibilities and accountabilities increased, and there was

Figure 1: RNs to Population Ratio per 100,000 Population, Canada, 1971-2005



Source: Health Canada, Microsimulation Modelling and Data Analysis Division, 2006.

more demand for higher educational levels for nurses. In short, fewer nurses were looking after sicker patients.

At the same time, the *nurse-to-population* ratio started to drop from its peak of 825 RNs per 100,000 in 1992, to 752 per 100,000 in 1998 (see Figure 1). However, when the federal government registered a budget surplus in the late 1990s, it once again increased payments to the provinces. Since then, the nurse-to-population ratio has increased slightly to 779 per 100,000 in 2004.[5,6,7,8,9]

To cope with shortages, employers began overusing their nurses. Nursing staff were required to work overtime and extra shifts, sometimes involuntarily, to provide reasonable patient care. Research began to show a link between working excessive overtime and increased absenteeism, illness and injury, as well as a correlation between the hours of overtime worked and the hours taken as sick time.[10] It also became clear that nurses were less likely to be in good physical and mental health when they worked involuntary overtime.[10]

In Canada, an extensive literature review by McGillis Hall showed how inadequate nurse staffing levels and limited organizational support put nursing staff at higher risk of experiencing job dissatisfaction, burnout and workplace injuries.[12,13,14] In turn, high levels of job dissatisfaction, stress, pressure, threat of job loss, burnout, workplace injuries (e.g., back injuries and needle injuries) and role tension affected the nurses' overall well-being, which then had an impact on patient outcomes, quality of patient care and patient care costs.[12,15]

Violence on the Job

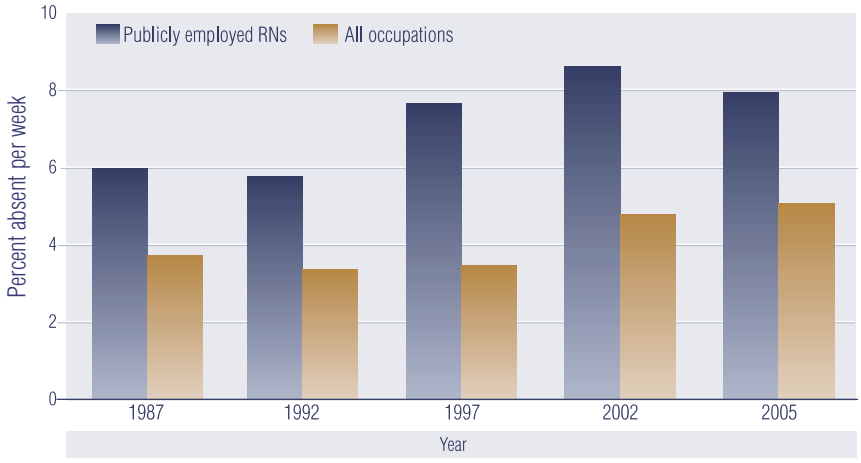
The risk of violence (physical assault, verbal aggression or emotional abuse) in the workplace is an increasing concern in the nursing work force. Nurses are the health care workers most at risk, with female nurses considered the most vulnerable—as many as 72% of nurses do not feel safe from assault at work.[11] While the evidence is still new, some factors that help explain this situation include:

- inadequate staffing levels and shift work
- shift work, including commuting to and from work at night
- interventions demanding close physical contact
- increased wait times in emergency departments and in clinics, which increase patients' stress

Working Conditions and Absenteeism

Comparing rates of illness and injury-related absenteeism between nursing and other occupations sheds light on the impact of poor working conditions for nurses. A comparison of publicly employed RNs to all occupations in Canada points to a substantial difference in absenteeism rates due to illness and injury (see Figure 2). In 2005, full-time nurses had a 58% higher rate of absence due to illness and injury than the overall full-time employed labour force (7.9% compared to 5.0%).[2] Based on the 1991 Standard

Figure 2: Rate of Illness- and Injury-Related Absenteeism, Canada, Selected Years, 1987-2005



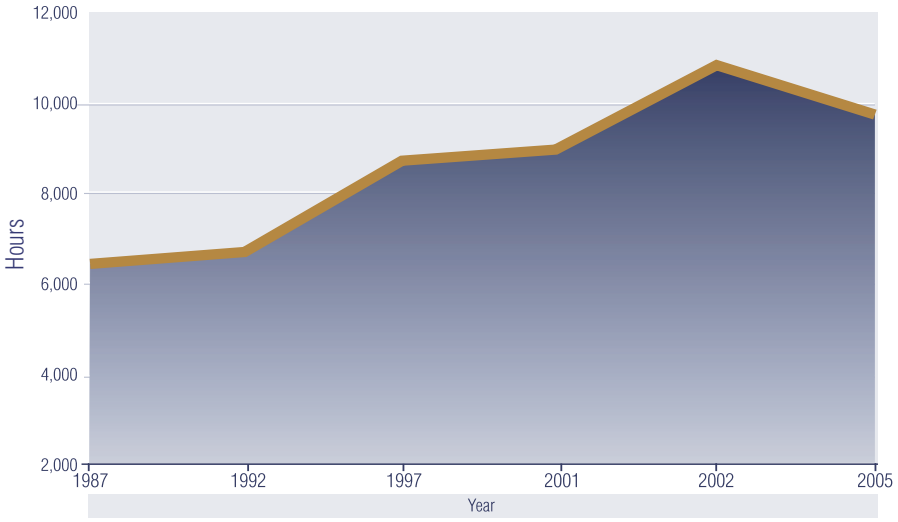
Source: Reprinted with permission from the Canadian Nurses Association, 2006.

Occupational Classification System, nurses have one of the highest rates of illness- and injury-related absenteeism of 47 broad occupational categories. In fact, the 2005 rate among RNs was second only to the group "Assisting Occupations in Support of Health Services."[2]

Nurses are at a particularly high risk for illness, emotional exhaustion and musculoskeletal injuries. In 2005, 16,500 publicly employed nurse supervisors and RNs were absent each week due to illness and injury.[2] While this is slightly less than in 2002 (17,100 per week), it is significantly greater than the 9,400 absences per week in 1987.

The rate of illness- and injury-related absenteeism in 2005 (7.6%) was considerably higher than the estimated rate in 1987 (5.3%). From 1987 to 2005, the absenteeism rate increased by 2.3 percentage points, representing an increase of 43% in the overall rate. In the latter part of this period (1997–2005), the rate rose from 6.8% to 7.6%; an 11.7% increase in the overall absenteeism rate.[2] Figure 3 provides an aggregate picture of these increases from 1987 to 2005.

Figure 3: Aggregate Full-Time Equivalents Lost per Year Due to Absenteeism, Canada, Selected Years, 1987–2005



Source: Reprinted with permission from the Canadian Nurses Association, 2006.

Some nurses are more affected

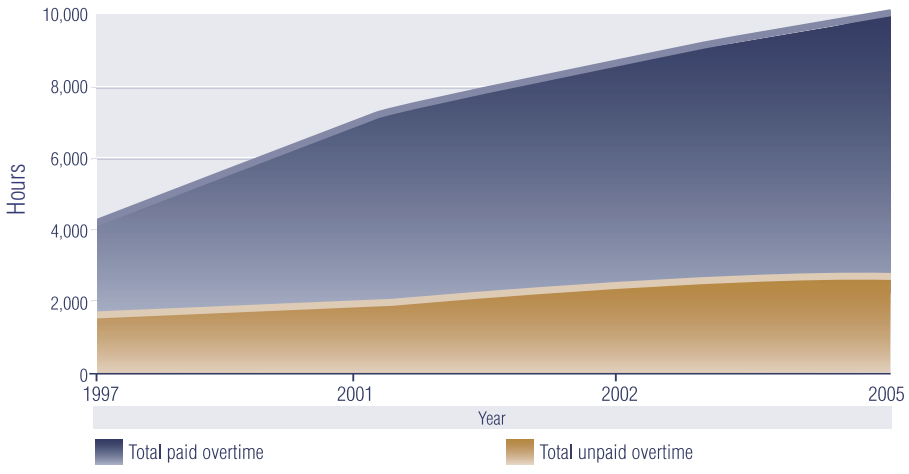
While both full-time (30 or more hours per week) and part-time nurse supervisors and RNs have experienced an increase in illness- and injury-related absenteeism since 1987, the rate of absenteeism for full-time workers is approximately 50% higher than for part-time workers. Rates of illness- and injury-related absenteeism have also increased among nurses of all age groups, although in 2005 there was a slight decrease in the rates of nurses less than 45 years old and an increase among nurses over 50.[2]

Working Conditions and Overtime

Overtime work is directly related to absenteeism and nursing hour shortages, and publicly employed nurse supervisors and RNs are more likely than the rest of the employed labour force to work overtime. In 2005, the incidence of overtime for these nurses was 26%, compared to only 22.5% for the rest of the employed labour force. The 2005 overtime rate was higher than the estimated rate of 26% in 2002, and considerably higher than the 1997 rate (15.3%). Working overtime increased by 58% between 1997 and 2005, although the average hours of overtime worked each week did not change (6.4 hours).

While a significant amount of overtime is unpaid, paid overtime in 2005 amounted to the equivalent of 7,468 full-time positions. When unpaid overtime is factored in, 10,054 full-time equivalent positions (FTEs) are filled by nurses working overtime. That is an increase of 144% since 1997, when hours of overtime

Figure 4: Aggregate Annual Overtime Hours as Full-Time, Full-Year Equivalents, Canada, Selected Years, 1997–2005



Source: Reprinted with permission from the Canadian Nurses Association, 2006.

worked equalled 4,125 FTEs.[2] Figure 4 shows the aggregate annual overtime hours worked by nurses for selected years between 1997 and 2005.[2]

Implications of Absenteeism and Overtime

Needless to say, the cycle of increasing workloads, illness- and injury-related absenteeism, and overtime hours needed to fill the gap is taking its toll on both the health care system and on nurses and their families.

Cost to the system

The dollar cost of such high rates of absenteeism to the health care system is tremendous and comes in the form of productivity costs, wage replacements and disability pay-outs. In 2005, 16,500 nurses were absent an average of 20.0 hours each week due to illness or injury for a total work-time loss of 340,000 hours per week. This translates into 17.7 million hours per year or 9,754 full-time nursing positions.[2] Such a loss overtaxes a health care system that is already distressed with nursing hour shortages.

Strain on the family

The increasing workload and overtime hours puts a strain on personal and social relationships and reduces the capacity to cope with the emotional and physical stress encountered by nurses in their work and family roles.[16] On top of this—and in light of the fact that the vast majority of nurses are female—shift work, overtime and hours of work limit the time nurses' can devote to their families, not to mention social and leisure activities.[16]

Preparing for Emergencies . . .

Large-scale emergencies, such as infectious disease outbreaks, place additional stress on an already strained system. To facilitate planning, researchers from the University of Ottawa are exploring the different ways gender roles and family obligations may affect health workers under emergency conditions.

Preliminary results of a collaborative study involving Department of National Defence, Health Canada and other partners, *Caring about Health Care Workers as First Responders: Enhancing Capacity for Gender-based Support Mechanisms in Emergency Preparedness Planning*, show that health providers feel "unprepared, unsupported, and torn between loyalties to their profession, and particularly their families, who may fall ill as a result of occupational risk and exposure."[17]

Patient Care Is Affected

As discussed in the article on page 20, long work hours and heavy workloads are detrimental to patient care.[10] In the 2005 Nursing Sector Study, nurses cited onerous workloads as a barrier to patient care.[4] In another study, hospital nurses working more than 12.5 hours at a time were three times more likely to make mistakes. Moreover, errors and medical incidents increased significantly when nurses worked more than 40-hour weeks, or when they worked overtime.[4] When nurses cannot complete (or are prevented from completing) their duties, medication errors and patient falls may result.

The Challenge Ahead

Workplace and work force issues call for collaboration and input from all levels of government, in partnership with front-line health care providers, professional organizations and other stakeholders. The challenges of aligning efforts across organizational, jurisdictional and issue lines are evident. However, as discussed in the article on page 36, significant investments are being made, including those under the umbrella of the *Pan-Canadian Health Human Resource Strategy*.

A Final Note

This article has summarized evidence of serious problems in nurses' working conditions, some of the reasons behind them, as well as the complex issues involved. Although there has been some progress, front-line nurses continue to work overtime, are injured or ill, lack support and become discouraged, stressed and burnt out. A closer examination of the links between working conditions and nurses' physical and mental health is critical and will be highlighted in the next article featuring the results of the *National Survey of the Work and Health of Nurses*.

Special thanks to Teklay Messele, Microsimulation Modelling and Data Analysis Division, Health Policy Branch, Health Canada, for providing RNs-to-population data.

Please note: Full references are available in the electronic version of this issue of the Bulletin: <http://www.healthcanada.gc.ca/hpr-bulletin>.

Nurses' Work and Health: New Findings

Kathryn Wilkins, *Health Statistics Division, Statistics Canada,* **Fil McLeod**, *Special Surveys Division, Statistics Canada, and* **Margot Shields**, *Health Statistics Division, Statistics Canada*

From October 2005 through January 2006, nurses across Canada participated in a ground-breaking investigation—the first nationally representative survey on working conditions and the health of nurses. This article highlights some of the newly released findings that tell us about the nursing work force, nurses' workplace environments and their physical and mental health.

Are nurses more likely than the general working population to report work-related stress? Do nurses across the country face similar working conditions? What are the physical and emotional risks that nurses encounter at work? Results of the recently released (December 2006) *National Survey of the Work and Health of Nurses*[1] shed light on these and similar issues—a timely addition to the discussion on the working conditions of Canada's nurses.

Canada's Nurses

In 2005, an estimated 314,900 Canadians were employed as regulated nurses representing 2% of the total Canadian work force; female nurses accounted for 4% of all employed women. Eight in ten (79%) of Canada's employed, regulated nurses were registered nurses (RNs), one in five (20%) were licensed practical nurses (LPNs) and less than 2% were registered psychiatric nurses (RPNs)—who practise in the four western provinces.

About the Survey

Why a survey?

- spearheaded by Health Canada's Office of Nursing Policy to learn more about nurses' working conditions in relation to their physical and mental health

A collaborative effort

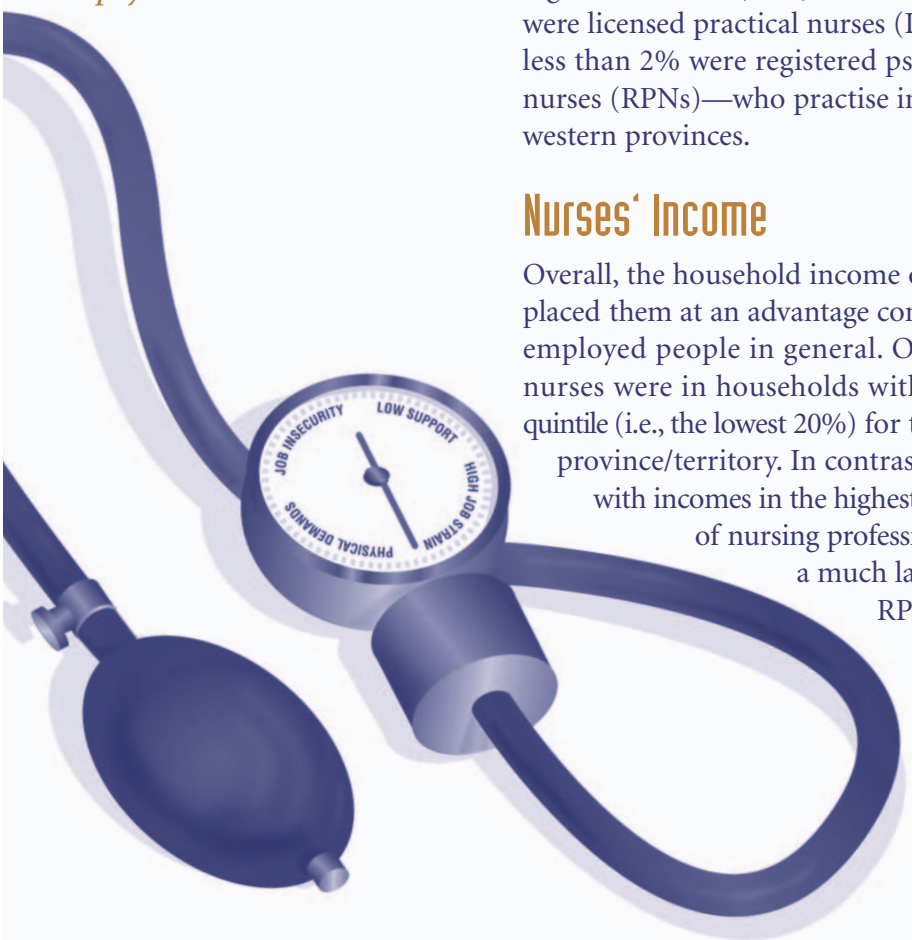
- collaboratively developed by professional nursing organizations, nursing unions, health care researchers, health information specialists and federal government departments
- conducted by Statistics Canada in partnership with Health Canada and the Canadian Institute for Health Information

Many surveyed, high response rate

- a total of 18,676 regulated nurses completed the Survey, representing licensed practical nurses (LPNs), registered nurses (RNs) and registered psychiatric nurses (RPNs) employed in a variety of settings
- 80% of sampled nurses responded to the Survey; only 7% refused to participate

Nurses' Income

Overall, the household income of nurses placed them at an advantage compared with employed people in general. Only 7% of nurses were in households with incomes that placed them in the lowest income quintile (i.e., the lowest 20%) for the general employed population within their own province/territory. In contrast, almost three in ten (29%) were in households with incomes in the highest quintile. However, a closer look at different types of nursing professionals showed some major differences. For example, a much larger proportion of LPNs (16%) than RNs (4%) or RPNs (3%) were in households classified in the lowest income quintile for their province/territory. Nurses' relative household income also differed across the country. In Québec, for example, nurses had a greater likelihood of being in a household with income in the lowest quintile than did nurses elsewhere in the country (see Figure 1).



Employment, Job and Workplace Characteristics

Findings indicate that nurses' working conditions differ by region, among types of nurses, and between nurses and the total population of employed Canadians.

Hours of work per week vary regionally

Not including overtime, Canadian nurses (including part-time workers) worked an average of 32.2 hours per week at their main job (defined as the job at which the nurse spent the most hours per week). The average work week for female nurses was 32.0 hours, slightly shorter than for male nurses (34.7 hours).

When both paid and unpaid overtime are taken into account, the average work week for a nurse was 35.7 hours. Nurses in Newfoundland and Labrador, Nova Scotia, New Brunswick, and the territories averaged more hours at their main job than nurses elsewhere (overtime included)—especially in the territories where a nurse's average week was 47.8 hours with overtime.

Shift Length

Working 12-hour shifts is relatively common—over one in four nurses surveyed reported that their usual shift was 12 hours. For those with shifts of less than 12 hours, 97% worked a shift of 8 hours or less.

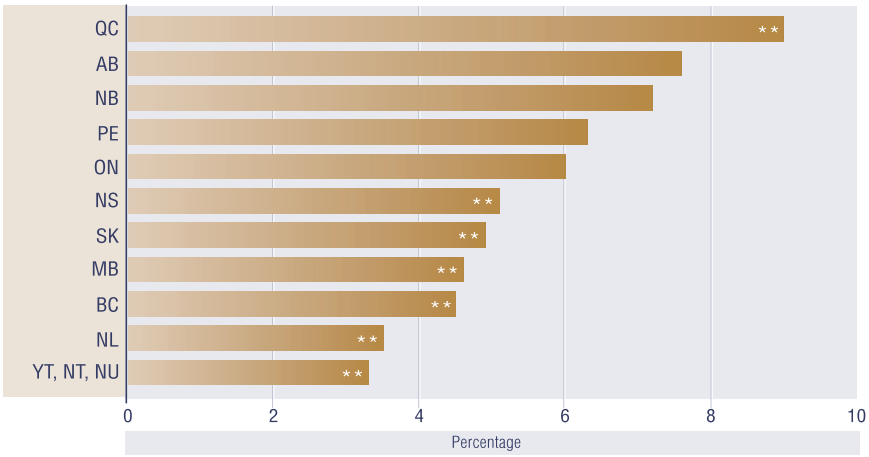
Overtime rates are higher for nurses

Despite widespread union coverage, nearly half (46%) of nurses reported that they were expected by their employer to work overtime. Three in ten reported that they usually worked paid overtime at their main job —an average of 5.4 extra hours per week. Working paid overtime was more common among nurses employed in a hospital (37%) than among those employed in other settings.

Compared with Canadian workers overall, much higher proportions of nurses worked paid overtime. For example, 30% of female nurses worked paid overtime, compared to only 13% of employed women in general. Similarly, 37% of male nurses worked paid overtime, while the rate was only 28% for employed males in general.

Unpaid overtime was even more common than paid overtime among nurses. Nearly half reported that they usually worked unpaid overtime at their main job—an average of four hours per week. Unpaid overtime was more common among nurses in Alberta, Manitoba and Ontario, where over half of nurses reported usually working unpaid overtime at their main job.

Figure 1: Percentage of Nurses with Household Income in the Lowest Income Quintile,* by Province/Territory, Canada, 2005



* Quintile cut-points were derived separately for each province and the territories and based on household income of the employed population aged 21 or older, adjusted for household size.

** Significantly different from estimate for other jurisdictions, combined ($p<0.05$).

Source: Shields and Wilkins, Findings from the 2005 National Survey of the Work and Health of Nurses.[1]

Changes in Nursing Care—Quality, Risks and Workload Pressures

When asked if the quality of care delivered in their workplace had changed over the past year, opinions varied. More than half (57%) of nurses surveyed said they felt it had remained the same, slightly more than one quarter (27%) reported deterioration in quality of care, while less than one fifth (16%) felt that quality of care had improved.

Opinions varied regionally. British Columbia nurses were more likely than their counterparts elsewhere to report that quality of care had worsened. More than one third (35%) of BC nurses reported deterioration—over twice the proportion (15%) in Prince Edward Island. Among nurses who said that quality of care had improved, the most common reasons given were improved management or reorganization, more staff, and more or improved training.

Staffing emerged from the Survey results as a major determinant of both positive and negative changes in quality of care. Having fewer staff was by far the most common reason cited for deterioration of care

(mentioned by 67% of nurses who said they perceived that the quality of care had declined); similarly, "too many patients" was mentioned by 38% of nurses who reported deterioration in quality of care.

Workplace injury, assault

Nurses in British Columbia and in Saskatchewan were more likely than those in the rest of the country to have been injured on the job: one in eight BC nurses (12%) and nearly the same share of Saskatchewan nurses (11%) reported injuries—about twice the proportion as in Prince Edward Island. On-the-job injury was reported by only 7% of Québec nurses.

Over one quarter (29%) of nurses who provide direct care reported that a patient had physically assaulted them in the past year—over four in ten male nurses (44%) reported physical assault, compared with slightly less than three in ten female nurses (28%). Emotional abuse from a patient was reported by 44% of nurses of both sexes.

Workload pressures

Over half (54%) of nurses said that they often arrived at work early or stayed late in order to get their work done; 62% reported working through breaks. Two thirds (67%) often felt that they had too much work for one person, and 45% said that they were not given enough time to do what was expected in their job.

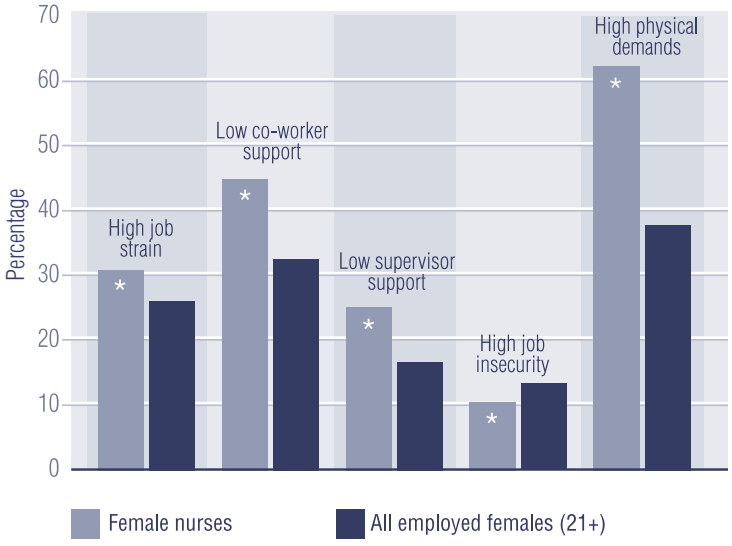
Stress, Respect and Job Satisfaction

The Survey assessed several dimensions of work stress, including job strain (i.e., when the psychological demands of a job exceed the worker's discretion in deciding how to do the job). Compared with employed people in general, higher proportions of nurses were classified as experiencing a high level of job strain. Among females, 31% of nurses versus 26% of employed women were determined to have experienced such stress. Among males, the proportions are somewhat lower—27% of nurses versus 18% of employed men (see Figures 2A and 2B).

More nurses—45% of females and 51% of males—felt they had low co-worker support; a far different picture than for the employed population overall, where the estimate for males and females was approximately 33%. However, nurses' perceptions of their working relations with physicians were overwhelmingly positive: 87% reported good relations; 81%, a lot of teamwork; and 89%, collaboration.

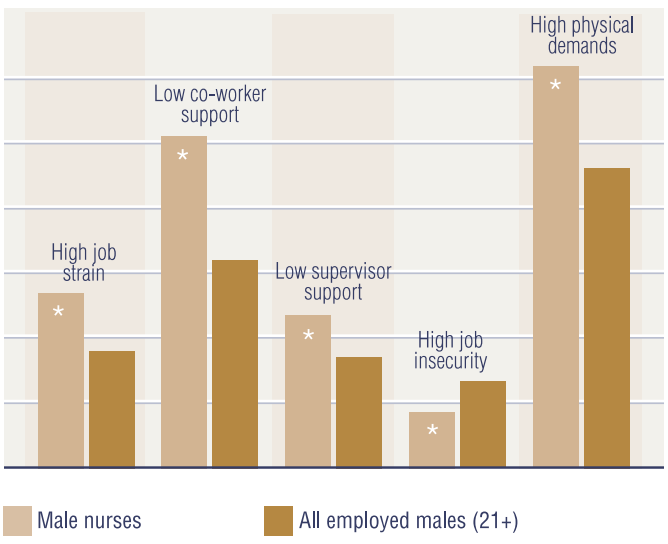
Job dissatisfaction was more prevalent among nurses than among the general employed population. About 12% of both female and male nurses were dissatisfied, compared with 8% of all employed women and men. At the same time, only 4% of nurses said they planned to leave nursing in the next year—most for retirement.

Figure 2A: Percentage of Female Nurses and All Employed Females Reporting Work Stress, Canada, 2005



* Significantly different from estimate for all employed females, combined ($p<0.05$).
Source: Shields and Wilkins, Findings from the 2005 National Survey of the Work and Health of Nurses.[1]

Figure 2B: Percentage of Male Nurses and All Employed Males Reporting Work Stress, Canada, 2005



* Significantly different from estimate for all employed males, combined ($p<0.05$).
Source: Shields and Wilkins, Findings from the 2005 National Survey of the Work and Health of Nurses.[1]

Physical and Mental Health

Back problems were more prevalent among female nurses than among employed women overall, but no significant differences emerged for men. One quarter (25%) of female nurses said they had chronic back problems, compared with 19% of females in the employed population overall. The proportions of nurses reporting migraine, high blood pressure, asthma and thyroid disorder were also higher than for the general employed population.

Depression was more common among nurses than in the employed population overall. Nearly one in ten nurses (9% of women and men alike) said they had experienced depression in the 12 months before they were surveyed, compared with 7% of all employed women and 4% of all employed men.

Health and job performance

Nurses related their health problems to their ability to perform their jobs. About one in three nurses stated that at least some of the time in the month prior to being surveyed, physical health problems had made their workload difficult to handle—and nearly one in five said that mental health problems had interfered with their ability to do their job.

For nurses across the country, the average number of days taken off during the year (prior to the Survey) for health-related reasons was 14.5 days. Nurses who had taken time off due to health missed an average of 23.9 days. An estimated 14% of all nurses had been absent for 20 or more days during the previous year due to health problems. In Québec, nurses who had taken time off for health reasons averaged a total of 44 days, well over twice as many days as any other province or territory (where average absences ranged from 13 to 20.6 days). However, only 48% of Québec nurses had taken time off work because of a health problem; the figure for all Canadian nurses was 61%.

Nurses related their health problems to their ability to perform their jobs. About one in three nurses stated that at least some of the time in the month prior to being surveyed, physical health problems had made their workload difficult to handle—and nearly one in five said that mental health problems had interfered with their ability to do their job.

Links between Work and Health

The data were analyzed to examine whether nurses' self-rated physical and mental health and health-related absences from work were associated with their work conditions. Multivariate analysis, controlling for potentially confounding effects (e.g., age, type of nurse, province/territory, etc.), was undertaken for both tangible factors of work organization and psychosocial factors of the job.

Overall, self-reported fair or poor general health, as well as fair or poor mental health in nurses, was linked to components of work stress, including high job strain and low support from their co-workers or supervisor. Other factors—low levels of autonomy, poor nurse-physician working relations, low levels of respect from superiors and high role overload—were also associated with poor or fair general and mental health. Being absent 20 or more days for health-related reasons was associated with high job strain, low supervisor support, low control over practice, lack of respect from superiors, and high role overload.

Further Analysis

The findings highlighted in this article provide a sampling of the variety of information collected by the 2005 *National Survey of the Work and Health of Nurses*. The results will continue to be analyzed to investigate the linkages between working conditions and nurses' health, and to identify the challenges ahead for improving working conditions for nurses.

Please note: Full references are available in the electronic version of this issue of the Bulletin: <http://www.healthcanada.gc.ca/hpr-bulletin>.

Nursing Shortages: Where and Why

Kisalaya Basu *and* **Anil Gupta**, *both from the Microsimulation Modelling and Data Analysis Division, Applied Research and Analysis Directorate, Health Policy Branch, Health Canada*

Canada's current nursing shortage is expected to increase significantly in the next 15 years. This article explores both demand- and supply-side factors, and highlights the impact of demographic pressures and nurses' working conditions. As well, it applies newly developed models to predict nursing specialties where shortages will be the greatest.

There is evidence of a worldwide nursing shortage—including in Canada. In fact, a new report by the Canadian Institute for Health Information (CIHI) underscores registered nurses (RNs) as "a shrinking and aging work force." Yet, Dr. Ginette Lemire Rodger, past president of the Canadian Nurses Association, noted that the nursing work force is an element important to the sustainability of the future health care system.[1] Further, the Association confirms that Canada will face a growing shortage of nurses over the next 15 years; specifically, it projects a shortage of 113,000 RNs by 2016, reflecting both expected supply and the increasing demand of an aging population.[2]

Understanding Shortages

Nursing shortages occur when the demand for nursing services exceeds the supply of nurses in the work force. Shortages cannot be measured directly, but must be estimated on the basis of complex models of demand and supply. Demand is determined mainly by the prevalence of diseases, available technology (including advancement of drugs/vaccinations) and public expectations. On the other hand, the supply of nurses is determined by the number of active nurses and the amount of time they work.

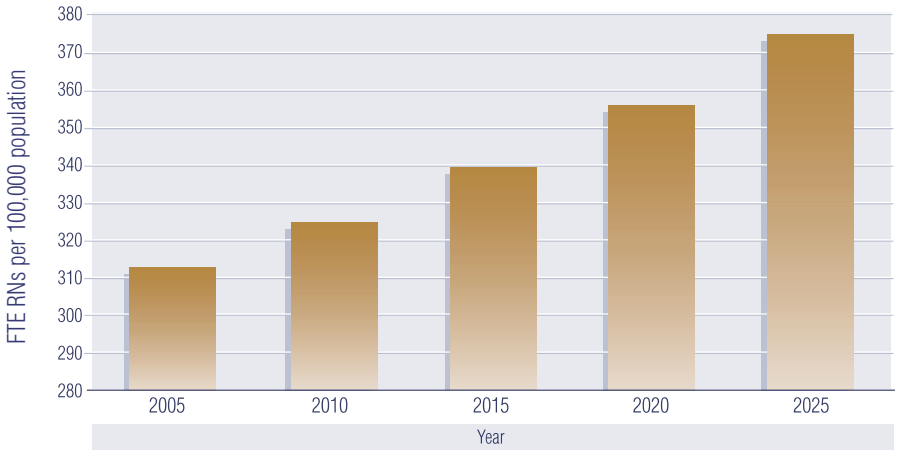
A study of nursing in OECD (Organisation for Economic Co-operation and Development) countries summarizes the causes of current nursing shortages.[3] As previous articles have shown, many are linked to working conditions:

- increased demand for nurses due to aging populations
- new technologies that increase the range of treatable conditions
- greater consumer activism
- a falling or slow-growing supply, due to fewer younger people entering the nursing work force
- a greater range of professional opportunities outside nursing
- the low social value given to nursing
- negative perceptions of nursing conditions
- an aging nursing work force

Arguments of Supply and Demand

To a large extent, the current shortage of nurses in the hospital sector is due to the fiscal restraint imposed on that sector in the early to mid-1990s. Other factors have also contributed to changes in nursing employment levels since then. According to supply-side proponents, deteriorating working conditions and stagnant wages have caused nurses to voluntarily leave for better employment prospects elsewhere, including the United States. By contrast, demand-side proponents argue that hospitals have reduced staff levels in response to a decline in inpatient use.[4] As this article shows, both perspectives have merit.

Figure 1: Demand Forecasts for Full-Time Equivalent In-Hospital and Home Care RNs per 100,000 Population, Canada, Selected Years, 2005-2025



Source: Health Canada, Microsimulation Modelling and Data Analysis Division, RN Demand Model.

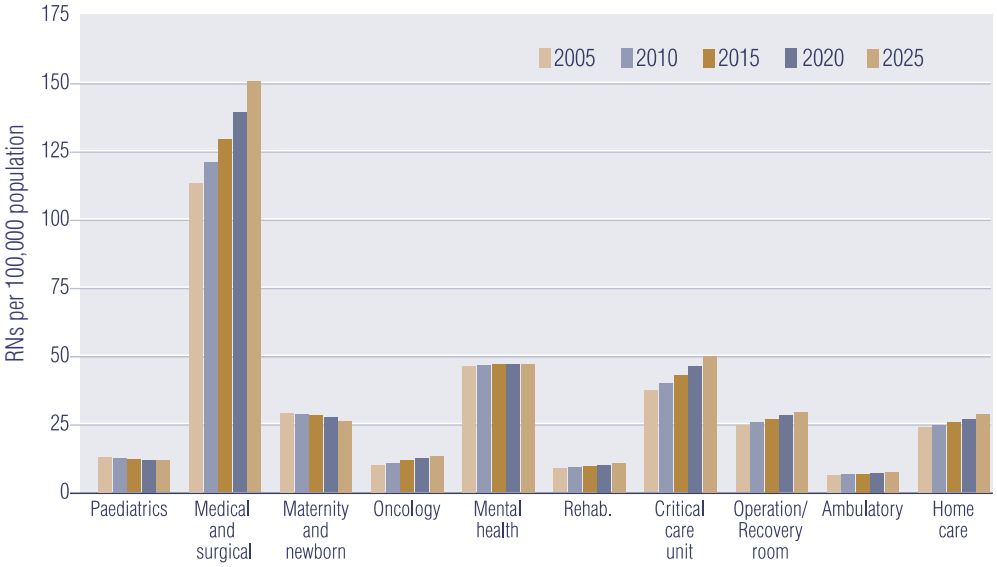
Changing Demand Patterns

The demand for nursing services is determined by a number of factors, including both the size and demographics of the population. Population aging is particularly important as the age distribution of a population affects both the prevalence and patterns of disease.

Disease patterns of aging

With an aging population, the prevalence of age-related diseases is expected to increase. For example, administrative data from Nova Scotia shows that over the next 20 years—other factors remaining the same—there will be a significant *increase* in treatment requirements for diseases of the circulatory system (36%); neoplasm (29%); endocrine, nutritional and metabolic diseases and immunity disorders (25%); and diseases of blood and blood-forming organs (25%).[5] However, demographics will *decrease* requirements in other areas, such as complications related to pregnancy, childbirth and the puerperium (12%). For paediatric patients, the prevalence of all diseases will decline.

Figure 2: Demand for Full-Time Equivalent RNs per 100,000 Population, by Selected Nursing Functions, Canada, Selected Years, 2005-2025



Source: Health Canada, Microsimulation Modelling and Data Analysis Division, RN Demand Model.

Demand for RNs by hospital function

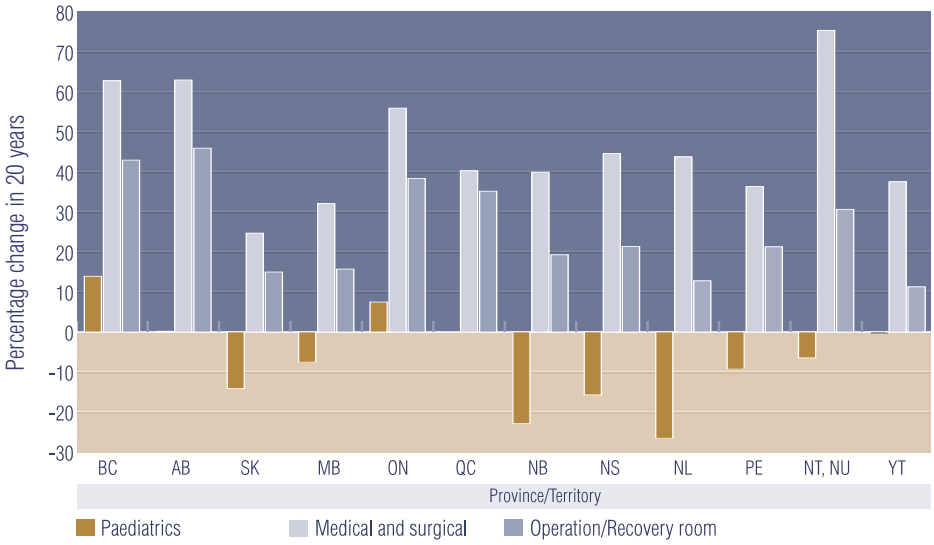
In order to fully understand shortages, we have to determine both demand and supply of nurses. Modelling the demand for nurses is a complex task. The Microsimulation Modelling and Data Analysis Division (MSDAD) of Health Canada has built a health human resources model that forecasts the demand for in-hospital and home care full-time equivalent (FTE) RNs per 100,000 population. The model was built using the Discharged

Abstract Data (2000) for all provinces and territories. Utilization-based demand was determined by using Resource Intensity Weights (RIW), which is a measure of the resources used by each discharged patient.

Using the model[6] and a base year of 2001, Figure 1 shows demand forecasts for nurses in both the hospital and home care sectors up to the year 2025.

MSDAD's model not only projects the aggregate demand for FTE in-hospital and home care RNs, it also breaks down the in-hospital demand for RNs by nursing function, such as paediatrics; medical and surgical; maternity and newborn; oncology; mental health; rehabilitation; critical care unit; operation room/recovery room; ambulatory; and home care.

Figure 3: **Percentage Growth in In-Hospital and Home Care RNs per 100,000 Population, by Province/Territory and Selected Nursing Functions, 2005-2025**

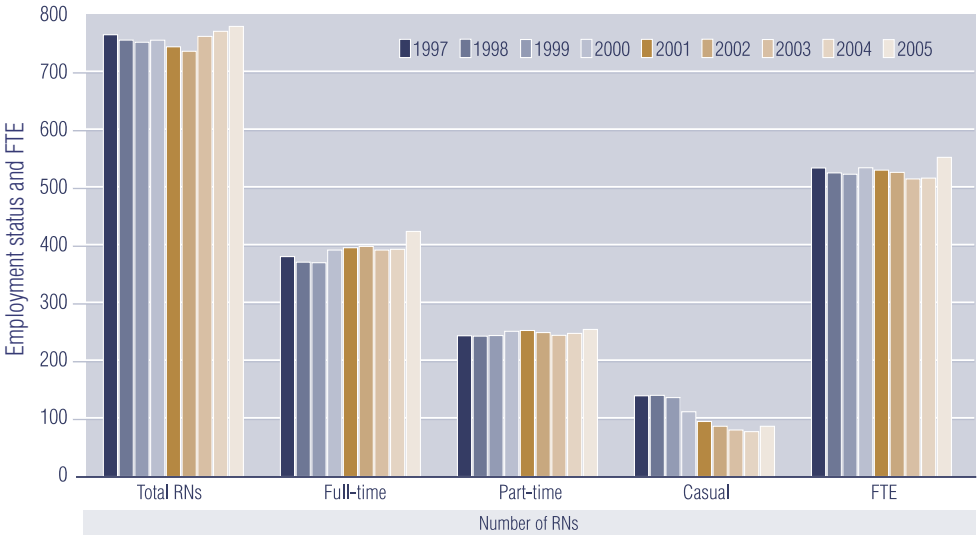


Source: Health Canada, Microsimulation Modelling and Data Analysis Division, RN Demand Model.

Figure 2 shows projected demand for RNs by nursing function from 2005 to 2025. This includes all in-hospital RNs, as well as RNs working in home care. As expected, relatively higher growth in demand for RNs is forecasted in nursing functions associated with the treatment of older patients.

Figure 3 shows the projected growth for in-hospital FTE RNs per 100,000 population by province/territory for several nursing functions from 2005 to 2025. The forecasts for demand for different types of nurses will reflect the prevalence of different diseases, as well as the demographics. Overall, the model forecasts a growing demand in all provinces over the next 20 years for selected nursing functions related to aging, such as for medical and surgical, and operation room/recovery room services. However, for paediatrics nursing services most jurisdictions show a negative percentage change in growth, reflecting the aging of the population. British Columbia and Ontario are exceptions to this trend.

Figure 4: **Number of RNs Employed in Nursing, by Employment Status, Canada, 1997-2005**



Source: Canadian Insitute for Health Information, various publications: Workforce Trends of Registered Nurses, Licensed Practical Nurses, and Registered Psychiatric Nurses in Canada.

Supply of Nurses

Nursing supply is determined by a number of factors, such as the number of students entering nursing school, attrition rates, in- and out-migration, rates of retirement, rates of death, inter-provincial migration, working conditions, job satisfaction, retention and more. A headcount of working nurses provides some information about supply, but in order to be a useful tool it must be transformed into FTEs, which reflect the actual labour supply of nurses (see *Using Canada's Health Data*, page 44).

FTEs per 100,000 population provide a better picture of labour supply as they account for the actual supply serving a certain number of the population. Figure 4 shows the trend in RNs employment per 100,000 population, by employment status (full-time and part-time), casual status and FTE (per 100,000 population) from 1997 to 2005.[7] Clearly, the number of nurses (headcount) is not a good indicator of labour supply because all nurses do not work the same number of hours—almost half of the total RN population works part time. Figure 4 also shows that the total number of part-time and full-time RNs per 100,000 population remained more or less the same during this period, while there was a slight downward trend in the total number of casual RNs.

It is apparent that in the next few years a good portion of RNs will retire or will be working fewer hours. Unless a considerable number of RNs enter the work force, the supply will not meet the needs of a growing and aging population.

An aging nursing work force

The aging of the nursing work force also affects supply because of increased retirements and reduced working hours for the older nurses who remain in the work force. According to a 2006 report from CIHI, the average age of nurses was 44.6 years in 2004. That same year, 36% of the RN work force was aged 50 years or older, with almost 7% aged 60 or older.[2]

According to a CIHI study, the number of RNs eligible to practise increased by 3.4% (254,751 to 263,356)[2] between 2000 and 2004. These figures include RNs employed in nursing, RNs not employed and RNs who failed to state their employment status. By contrast, the Canadian population grew by approximately 4% during the same period, from 30.7 million to 32.0 million.

In summary, it is apparent that in the next few years a good portion of RNs will retire or will be working fewer hours. Unless a considerable number of RNs enter the work force, the supply will not meet the needs of a growing and aging population.

Working conditions and supply

According to one study,[8] poor working conditions are also affecting nursing shortages as older nurses leave the profession and fewer younger workers are attracted to it. The study focused on the need for nursing demand to match nursing resources to ensure a certain degree of predictability in the work environment. It also revealed that:

- Canada's nursing shortage is due at least in part to a work environment that "burns out" the experienced and discourages new recruits.
- Nurses who are greatly stressed and vulnerable to injury have a higher absenteeism and disability rate than any other profession.
- Though increased workloads improve short-term productivity, they may increase long-term costs, as stress and illness among nurses lead to poor judgment and low productivity.

As discussed in other articles, this situation is exacerbated by the common practice of asking nurses to work overtime rather than staffing vacant or new positions.

Figure 5 illustrates the cycle which results in further nursing shortages and

Figure 5: Cycle of Shortages in Nursing Supply

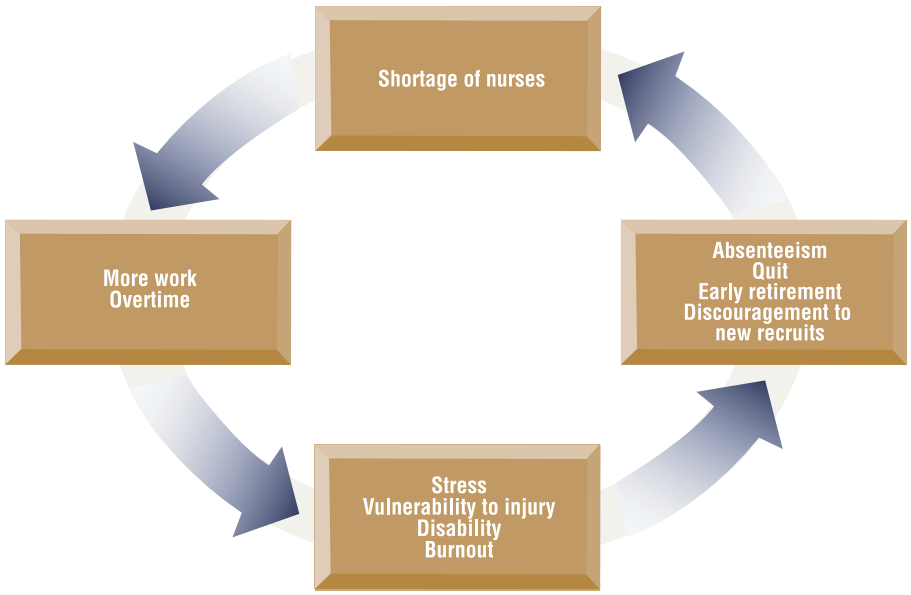


Table 1: Exit Rate of RNs, by Employment Status, Canada, 2003–2004

RN Employment Status	Number of RNs Employed	Exit Rate (%)
Full-time	124,147	3.3
Part-time	77,380	3.3
Casual	25,468	7.3
Unknown	14,347	4.0
Total	**241,342**	**3.7**

Source: Canadian Institute for Health Information, 2006.[2]

puts additional strain on working nurses. This disrupts care and makes planning difficult, resulting in considerable costs to the health care system and to the quality of patient care.

In part, working conditions are endogenous.[4] This means that if total patient volume stays the same, then a reduction in nursing staff levels—all other things being equal—will lead to an increase in per-nurse workload—and a worsening of working conditions. This, in turn, leads to more nurses leaving the sector, thereby decreasing staff levels even more.

Recruitment and retention

Recruitment and retention are also key factors in nursing supply. According to a 2006 CIHI report,[2] an average of almost 7 out of 100 RNs exit the profession annually. The exit rates vary from 1.4% in Manitoba to 6.3% in Prince Edward Island, with Yukon and Northwest Territories each exceeding 13%. As presented in Table 1,[2] exit rates also varied by employment status. It should be noted that exit from one jurisdiction to another does not necessarily signal a loss to the Canadian health system; regardless, this still highlights the number and proportion of RNs who chose not to renew their licensure the following year.

One study[9] emphasizes the significant impact of exits by mid-career nurses in their late 30s and 40s who have 15 or more years' experience. This group has professional and corporate memory, patient expertise, and the experience and wisdom that young nurses depend on for coaching, mentoring and support.

According to the evidence, nursing shortages are affected by a complex mix of supply and demand factors. Canada's supply of nurses will continue to be affected by demographics, recruitment and retention issues, and working conditions, while demand for nursing specializations will largely be driven by our aging population.

To Sum Up

According to the evidence, nursing shortages are affected by a complex mix of supply and demand factors. Canada's supply of nurses will continue to be affected by demographics, recruitment and retention issues, and working conditions, while demand for nursing specializations will largely be driven by our aging population. From an empirical researcher's perspective, projecting the future supply of nurses is a complex task since many of the exit/entry issues are a function of working conditions. These conditions will strongly determine whether individuals are attracted to and retained in the nursing profession, and will therefore be an essential factor in the formidable challenge of eliminating nursing shortages.

Please note: Full references are available in the electronic version of this issue of the Bulletin: <http://www.healthcanada.gc.ca/hpr-bulletin>.

A Question of Patient Safety

Kendra Hunter *and* **Isabel Giardino**, *Quality Care, Technology and Pharmaceuticals Division, Health Care Policy Directorate, Health Policy Branch, Health Canada*

Over the past decade, research has focused on many aspects of the working conditions of nurses and their impact on patient safety. The results have shown that increasing workloads, extended working hours and decreased job satisfaction are significantly affecting patient outcomes. This article examines the research and underscores the importance of fostering effective communication between nurses and other members of the health care team.

What Is Patient Safety?

Patient safety is increasingly recognized as one of the most significant issues facing health systems around the world. In its seminal report *To Err is Human*,[1] the Institute of Medicine estimated that as many as 98,000 hospitalized Americans die each year as a result of errors in their care.

In 2004, Canada completed its first national study[2] on adverse events in acute care hospitals. This retrospective study estimated that 7.5% of patients admitted to acute care settings experience adverse events, and that 9,000 to 24,000 patients die annually following a preventable adverse event in hospital.

An adverse event is an unintended injury or complication which results in disability, death or prolonged hospital stay, and is caused by health care management (rather than by the patient's underlying disease process).[4]

This high volume of health care errors has received attention from policy makers and health care stakeholders. In December 2003, the Canadian Patient Safety Institute (CPSI) was established.[3] It provides leadership and a national focal point for patient safety and quality improvement by promoting best practices, and developing strategies, frameworks, standards, tools and guidelines.

Since it began, CPSI has taken a systems approach to improving patient safety, while moving away from the culture of blame. This is in keeping with research conducted on error, which shows that most quality failures result from the complexity of systems, not from poor, incompetent, or purposefully harmful individual performance.

But the changes necessary to improve patient safety are as much cultural as technical: "Creating a culture of safety requires attention

not only to the design of our tasks and processes, but to the conditions under which we work—hours, schedules and workloads; how we interact with one another; and, perhaps, most importantly, how we train every member of the health care team to participate in the quest for safer patient care."[5]

The Canadian Council on Health Services Accreditation (CCHSA) recognizes the importance of a safety culture in the accreditation decision process. In 2005, CCHSA released its *Patient Safety Goals and Required Organization Practices* organized under five categories: Culture; Communication; Medication Use; Work Force/Work Life; and Infection Control. The Work Force/Work Life goal focuses on creating a work life and physical environment that supports the safe delivery of care/service, and is supported by a number of required practices—for example, to deliver to all staff (at least annually) education or training on patient/client safety.[6]

Clearly, the systems approach to reducing error acknowledges the significant impact that working conditions have on patient safety.

The risk of an error significantly increases when nurses' shifts are longer than the standard 12 hours, or when they work overtime or more than 40 hours per week.

Working Conditions and Patient Safety

Over the past decade, Canadian and international studies have focused on many aspects of the working conditions of nurses and their impact on patient safety. Reflecting the challenges highlighted in previous articles, research has found that increased workload, extended working hours and overtime, level of education and work experience significantly affect patient outcomes.

Increased workload

One study showed that with each additional patient in an average nursing workload, there was an average 7% increase in failure-to-rescue.[7] If a nurse's workload went from four to six patients, the odds of patient mortality increased by 14%. Conversely, higher staffing levels have been linked to improved quality of care and patient outcomes.[8] The research shows that low nurse-to-patient ratios are associated with complications and poorer patient outcomes,[8] increased rates of mortality and failure-to-rescue among surgical patients,[9] and nurse burnout and job dissatisfaction.[9]

Extended working hours and overtime

The risk of an error significantly increases when nurses' shifts are longer than the standard 12 hours, or when they work overtime or more than 40 hours per week. Moreover, working overtime increases the odds of a nurse making at least one error, regardless of how long the shift was originally scheduled.[7]

Nursing staff mix

The higher the proportion of professional nursing staff in a health unit or hospital, the fewer reported adverse events. Results of a study of Ontario teaching hospitals show that the lower the proportion of professional nursing staff employed on medical and surgical units, the higher the number of medication errors and wound infections.[10] A greater proportion or number of hours of nursing care provided by registered nurses (RNs) was associated with better care for hospitalized patients[11] and fewer adverse events, such as falls.[12]

A similar study by the American Nurses Association found that higher levels of professional nurse staffing were related to shorter patient stays and fewer preventable adverse events, including pressure ulcers, pneumonia, urinary tract infections and postoperative infections.[13] Although some research has found that a higher ratio of RNs is associated with lower mortality, results are conflicting.[14]

Work experience and level of education

Levels of education and work experience are also correlated with better patient outcomes. Several studies found that nurses with a baccalaureate are more likely to solve problems, communicate effectively, and perform complex functions and behaviours critical to improved patient safety. Moreover, hospitals with a higher proportion of nurses with a baccalaureate had decreased patient mortality.[15]

Greater nursing experience has also been associated with fewer adverse events. A Canadian study found that as the years of nursing experience increased, patient deaths decreased.[16]

The Role of the Workplace Environment in Patient Outcomes

Communication is key

Communication between nurses and other members of the health care team is emerging as the single most important factor affecting quality of care. In a major U.S. study of just under 3,000 hospitals conducted over the period 1995–2004, communication failures among team members were the primary cause in 60% of sentinel or serious adverse events, with lack of communication on patient status at "hand-off" cited as the most common reason.[17]

Nursing autonomy and improvements in team communication are positively correlated with quality of care and higher levels of job satisfaction.[19] Quality communication, interactions and coordination among health providers allow team members to influence improvements in the quality of care,[20,21] while also resulting in increased positive patient outcomes.[22,23]

A sentinel event (also known as a "critical event," "serious adverse event" or "critical clinical occurrence") is an incident resulting in serious harm (loss of life, limb or vital organ) to the patient, or the significant risk of harm. Incidents are considered sentinel when there is an evident need for immediate investigation and response.[18]

Collaboration

Effective team collaboration has consistently been found to be significant in obtaining desired patient outcomes.[24] Nurse-physician collaboration has a positive effect on nurses' caregiving decisions,[25] while decreasing the risk of negative outcomes such as readmissions and patient deaths.[26,27] Effective interaction, communication and conflict management abilities have been significantly associated with a shorter length of stay for patients and higher technical quality of care.[28]

Collaboration is especially important as the complexity of the patient-care situation increases.[29] Hospitals that achieved lower adverse events for surgical services used a greater number and variety of coordinating methods.[30] These hospitals had better perceived quality of care, less morbidity, reduced lengths of stay and fewer adverse events.

Other factors

Strong nursing leadership contributes to positive patient outcomes by developing staff expertise and stability.[31] Results of a study of nursing homes identified that the longer the director's tenure, the lower the prevalence of restraint use and complications of immobility.[32]

The demand for 24-hour medical care requires that all health care providers work in shifts. The shift change—when incoming and outgoing workers have to exchange information and hand over important duties—is a critical time. Research on "handovers" on internal medicine wards has found that medication errors are often attributed to poor transitions; however, other studies found that these transitions sometimes lead to recoveries from potential failures.[33] In a one-year study in five emergency departments in Canada and the U.S., transitions sometimes led to patient reassessments due to questions from the incoming caregiver.[34]

New Initiatives Are Improving Patient Safety

While patient safety remains a challenging issue for nurses and health professionals, systemic changes have resulted in significant improvements, both in the working conditions of nurses and for patient outcomes. As noted earlier, improving nursing autonomy and staffing levels has reduced adverse events and patient mortality.

Two recent reports from the Canadian Health Services Research Foundation[15,35] evaluated research on nurse staffing and patient safety, and made several recommendations, including that patients should be cared for by highly educated, regulated and experienced nurses. They also recommended that standard nurse staffing definitions be created and used to help compare research findings and to build stronger evidence for policy and practice.[35]

Several recent initiatives involving nurses as part of a multidisciplinary team are resulting in significant improvements. Launched in April 2005, the "Safer Healthcare Now!" campaign has become a key component in the advancement of patient safety in Canada.[36] It has enrolled more than 170 organizations, including hospitals and health regions, as well as over 544 clinical teams. The campaign's goal is to improve health care

Patient Safety in Other Sectors

Patient safety research has focused on acute care hospitals, with few studies of other health care settings such as home, community and long-term care. Yet nurses provide patient care in all locations in which health care is delivered—hospitals; nursing homes; clinics and physicians' offices; community health centres; private homes; nursing stations; schools; and workplaces. Emerging evidence indicates that there are safety issues unique to care settings—for example, in home care:[37]

1. The environment is less controlled than in institutions, with much of the care provided by unregulated workers, family and caregivers in settings designed for daily living rather than providing health care.
2. The client, family, caregiver and provider are interlinked and must be included in the patient safety equation.
3. Communication and coordination issues are problematic among service sectors, providers, caregivers, family and clients.
4. There are challenges concerning the use of health care technology in an uncontrolled and unregulated home setting.

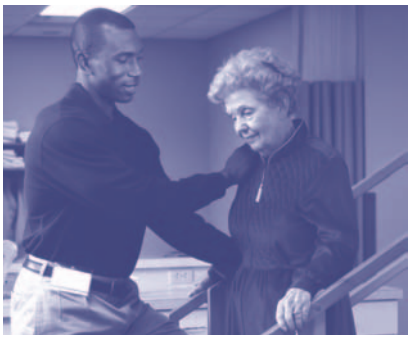
delivery by focusing on patients and their safety by promoting a collaborative effort among health care providers.

Several Canadian hospitals have begun using a communication technique called SBAR (Situation, Background, Assessment and Recommendation).[38] The tool consists of standardized "prompt" questions to ensure that clear, consistent, relevant and focused information is conveyed among health professionals.[39]

Recently, a group of Canadian hospitals in the Hamilton area piloted an initiative aimed at improving communication during shift changes and handovers. Nurses' concerns led to a hospital-wide project implementing evidenced-based Transfer of Accountability (TOA) Guidelines and a bedside patient safety checklist.[40] The standardized approach to handovers improves the effectiveness and coordination of communication among nurses at shift change, and fosters complete communication of patients' needs.

Technology also plays an important role in improving patient safety. For example, some centres in Canada are combining simulations and telehealth to provide a safe environment for health professionals to practise procedures and engage in complex scenarios.[41,42] These simulations allow nurses, physicians and other health care professionals to gain experience in handling and managing emergencies, unexpected events and difficult situations, and to make improvements in teamwork skills, communication techniques and the management of resources. The telehealth component allows health professionals to learn from a distance.

Nurses are the health care providers Canadians are most likely to spend time with at some of their most vulnerable moments. As front-line providers of care in many settings, nurses have always been champions for quality care.



Nurses are the health care providers Canadians are most likely to spend time with at some of their most vulnerable moments. As front-line providers of care in many settings (see sidebar), nurses have always been champions for quality care. With patient safety emerging as a significant national and international health care system issue, nurses will continue to be at the forefront of campaigns and initiatives ensuring that patients receive safe, high quality care.

Please note: Full references are available in the electronic version of this issue of the Bulletin: <http://www.healthcanada.gc.ca/hpr-bulletin>.

Knowledge Utilization:

How Can We Improve Nurses' Working Conditions?

Glenn Irwin, *PhD*, **Marie-Josée Therrien**, **Tiffany Thornton**, **Julie Creasey** *and* **Melissa Thornton**, *all from the Applied Research and Analysis Directorate, Health Policy Branch, Health Canada*

The authors would like to acknowledge the input of **Margaret Fitch**, *RN, PhD,* **Lesley Frank**, *MA,* **John N. Lavis**, *MD, PhD,* **Michael Leiter**, *PhD,* **Marlene Smadu**, *RN, EdD, and* **Ellen Rukholm**, *RN, PhD.*

Several key reports in recent years have made recommendations on improving working conditions for health professionals. However, little was known about how these reports were being considered and used. This article features findings from five knowledge utilization research projects, and discusses the role that reports can play in improving working conditions for nurses.

Engaging the Research Community

In 2002, a Department-wide consultation of senior officials led by Health Canada's Health Policy Research Program (HPRP) identified research on the utilization of reports on quality workplaces for health professionals as a priority area that was not being addressed by other funders.

While a growing number of reports on quality workplaces in the health care field tabled recommendations for improving the working conditions and the health care system, evidence was needed on the uptake of these reports and their resulting impacts. To learn more about how or whether the information, report recommendations and strategies had been used to improve health care working conditions, HPRP released a Request for Applications in March 2003. The overall purpose of the research was to examine the impact the reports had in creating healthy workplaces for Canadian health professionals. Specifically, the research objectives were to:

- study the dissemination of key reports
- assess how or whether the reports were considered
- investigate whether report recommendations were implemented
- identify barriers and/or facilitators, both in implementing the recommendations and for creating healthy workplaces for health professionals

Five applications passed policy relevance and scientific peer review. The funded projects approached the research objectives from differing perspectives using a variety of methods, including surveys, focus groups and case studies.

While some researchers included other reports in their research, all five projects focused on four key health human resources reports:

- *Commitment and Care: The Benefits of a Healthy Workplace for Nurses, their Patients and the System* (2001)[1]
- *Creating High Quality Health Care Workplaces* (2002)[2]
- *Our Health, Our Future—Creating High Quality Health Care Workplaces for Canadian Nurses* (2002)[3]

- *Health Human Resource Planning in Canada—Physician and Nursing Work Force Issues* (2002)[4]

Research Highlights

Results of the five projects became available in the summer and fall of 2006. In keeping with the original intent of the Request for Applications, they focus on the knowledge transfer of reports and the implementation of recommendations for improving working conditions of all health professionals. The results of the projects also provide an understanding of nurses' current working conditions, and of the barriers and facilitators for change. The findings presented below focus on the latter. More detailed information on the projects is available on the Health Canada website: <http://hc-sc.gc.ca/sr-sr/finance/hprp-prpms/results-resultats/proj015_e.html>.

Evidence from Policy Makers and Researchers

A project entitled *The Supply, Distribution and Working Context of Health Professionals: Why Do Things (Almost) Never Change?* was led by John N. Lavis of McMaster University.[5] The findings showed some similar viewpoints among researchers and policy makers. For example, a high proportion of both groups agreed that research organizations/researchers and policy makers are jointly responsible for knowledge translation. However, their views differed over whether broad challenges in intergovernmental relations had hindered health human resources policy making, with the majority of researchers suggesting that they had and the majority of policy makers disagreeing. However, this was a unique example, as there was overall agreement on the influence of other factors on health human resources policy making.

Health Human Resources Reports Studied: Recommendation Highlights

The four key reports included a number of recommendations:

- Promote workplaces that value employees, support leadership, recognize seniority, and reward efforts and achievements.
- Fund continuing education and professional development, and promote learning in the workplace.
- Promote workplace health and safety (i.e., provide appropriate supplies, implement policies to prevent violence and abuse).
- Address staffing issues (i.e., offer competitive pay, address the mix of full- and part-time status, develop an integrated health human resources strategy).
- Ensure manageable workloads (i.e., employ support staff to assist nurses, reduce non-nursing tasks).
- Conduct ongoing monitoring (i.e., forecasting HHR demands, the health of nurses, spending).
- Address quality of life issues (i.e., flexible scheduling, child care).

Case studies

Of the project's four case studies, two related directly to nursing:

- the (initial lack of) attention to nurses' working environment during a period of hospital restructuring and downsizing in Ontario, and the establishment of the Nursing Task Force
- the decision to provide public funding for nurse practitioners in Newfoundland and Labrador to address (at least in part) poor physician distribution

These studies demonstrated that increased knowledge translation helped to direct political attention towards issues in nursing work environments. It also made policy networks that had previously been limited to health care executives and government officials more accessible to a broader range of social actors. The heightened engagement enabled new policy choices.

Evidence from "the Field"

While Lavis' work focused on knowledge translation and its influence on health human resources policy, the *Nursing Environments: Knowledge to Action* (NEKTA) project, led by Michael Leiter of Acadia University, examined knowledge uptake in the field in Atlantic Canada.[6] Leiter's results showed limited transfer of the reports. Few nurses on the front line knew of them—with the exception of the highly publicized Romanow Report.[7] However, nursing stakeholders and health human resources planners in government, unions and professional associations, as well as administrators in health care organizations used these reports in a various ways, including as information sources and lobbying tools. In analyzing transfer and use, NEKTA also identified several factors that act as facilitators or barriers for knowledge transfer and utilization, including: report length and readability; dissemination processes; roles and workload; influence of the disseminator; endorsement within nursing

environments; and the amount of human and financial resources devoted to their dissemination.

Signs of positive change

Despite the barriers to transfer and use—and limited evidence of familiarity with the reports—NEKTA showed that the issues in the reports studied were topics of discussion and action across the region. As such, it found some positive changes in nurses' working environments in Atlantic Canada and gathering momentum as governments, schools and nursing leaders address issues of work force supply and quality of work life.

Researchers measured changes in nursing environments by grouping them in seven key theme areas:

1. **Work Force Supply** (health human resources strategies, education, number of nurses employed, recruitment and retention)
2. **Workload** (easing workload, nurse-to-patient ratio, support staff, equipment)
3. **Hours of Work** (employment status, scheduling, overtime)
4. **Work and Health** (healthy workplace culture, health of nurses)
5. **Nursing Leadership** (integrating nurses into governance, nurse managers' span of control, succession planning, supports for managers)
6. **Scope of Practice** (maximizing scope of practice, reviews of scope of practice)
7. **Information Systems** (integrated human resource information systems, workload measurement, other workplace systems such as electronic health records)

Positive change was demonstrated in work force planning, leadership, scope of practice and information systems. Success was also evident in provincial nursing strategies, phased-in retirement, continuing education, increases in university nursing seats, conversion of casual positions to full time and healthy workplace agendas (see sidebar below).

Persisting challenges

There were fewer changes in other areas, especially quality of work life, and participants were discouraged about how slowly change occurred. Particularly at the institutional level, nurses, managers and administrators were all challenged by quality of work life issues such as workload, staff shortages and retention. For example, NEKTA highlights the issue of burnout for nurses. Figure 1 shows how nurses in Atlantic Canada scored on *energy* and *efficacy*, indicating exhaustion and low confidence in their work. They also scored in the negative range on five areas of work life that can contribute to burnout (see Figure 2); manageable *workload* (demands are manageable within available time, resources and energy), *control* (decision-making involvement and personal autonomy), *reward* (opportunities for recognition and enjoyable work), *fairness* (respect, equity and social justice) and *value* congruence (between individual and organizational values). The only area that scored in the positive range was *community* (the social world of work including social support and interpersonal conflict), but these results were not significant.

Evidence on Barriers and Facilitators

The work led by Marlene Smadu of the University of Saskatchewan, entitled *Promoting High Quality Health Care Workplaces: Learning from Saskatchewan*, focused on barriers and enablers to knowledge translation.[8] Her report concluded that study participants were not aware of the specific policy documents identified. However,

Positive Changes Observed by the NEKTA Project

Creation of education initiatives and supports for students (such as Nursing Re-entry Programs in Nova Scotia and the Rural Student Nursing Incentive Program in Newfoundland and Labrador).

More nurses employed—all four Atlantic Provinces showed an overall increase in the number of registered nurses (RNs) from 2003 to 2004.

Introduction of float pools across Atlantic Canada provides job variety and an increase in full-time positions.

Figure 1: Burnout/Engagement Profile

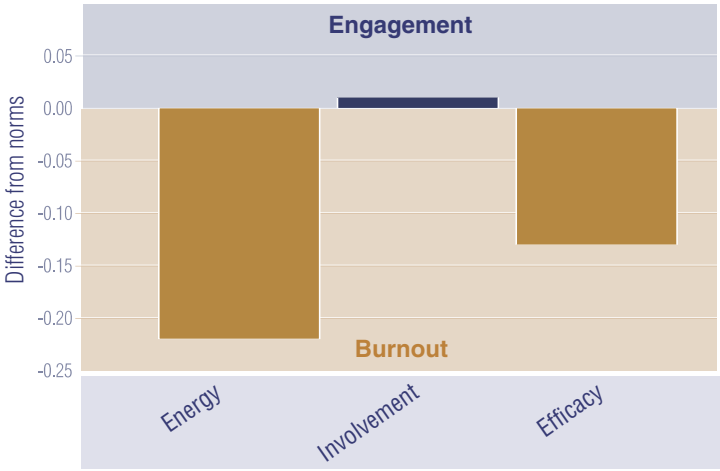
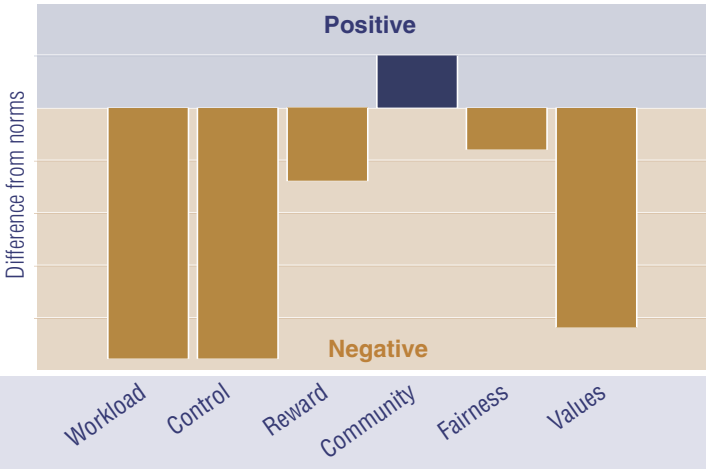


Figure 2: Areas of Work Life Profile



Source for Figures 1 and 2: Leiter, 2006.[6]

effective communication was seen as a critical factor in developing high quality health care workplaces, as well as in their sustainability. Other enablers included employee recognition, respect and trust, and teamwork. Budget constraints were considered to be a key barrier, with front-line workers noting that budget decisions came from above with little consultation. Also cited as barriers were employee morale, workload and the *Health Information Protection Act*, which was seen as having a negative impact on teamwork and communication.

The report recommended the use of leadership programs, and change management and communication strategies to create high quality health care workplaces. To improve knowledge transfer and evidence-based decision making, the recommendations focused on improved knowledge dissemination to target audiences, the use of deliberative processes that allowed for face-to-face interaction between different levels of decision maker, and knowledge utilization networks. They also encouraged the creation of mechanisms traditionally considered more personal or colloquial, such as blogs or web pages, meeting minutes or newsletters.

Evidence from a Regional Perspective

Ellen Rukholm of Laurentian University highlighted a specific Canadian region in her report, *Knowledge Utilization: Creating Quality Northern Rural Workplaces.*[9] It showed that senior and middle managers had little or no knowledge of the reports and that they had not been disseminated effectively. She identified a number of barriers to implementation, including relevance, insufficient resources and competing priorities. Her project included suggestions for developing policies and procedures to support implementation, which would: 1) be transferable to northern settings; 2) improve access to opportunities currently limited by distance; 3) build capacity; 4) promote sharing of resources; 5) link with local networks; 6) support accreditation standards; 7) include an evaluative component; and 8) outline leaders' expectations.

Evidence from Cancer Settings

Margaret Fitch of the Sunnybrook Health Sciences Centre addressed a specific field of nursing in *Canada's Experience Translating Workplace Knowledge in Cancer*

Overtime hours reduced in some areas by creating full-time positions from the causal work force.

Healthy workplace agendas in the strategic plans of all the six data collection sites.

Healthy Workplace Coordinators hired in some health districts.

Support for front-line managers in training, leadership conferences and other forms of development.

Settings.[10] Cancer statistics have shown a steady increase in incidence and a shift toward treatment as a chronic disease. This has significant implications for workloads, suggesting that a substantial part of the future demand for nursing services will come from the field of oncology.

Awareness of the policy reports in cancer settings was lower than expected among senior decision makers, change champions, managers and staff nurses. Most who were aware used the information to validate their ideas or reinforce an initiative currently in place. The primary barrier to using the reports was seen as organizationally related (e.g., budgetary constraints and lack of organizational infrastructure).

Researchers observed many changes to improve the workplace conditions for nurses in cancer settings, such as initiatives to address recruitment and retention, augmentation of clinical support, professional development, and health and wellness recognition. However, the reports were seldom consulted directly to identify, plan or implement initiatives, and there were only limited systematic evaluations to assess workplace improvements for oncology nurses. Nevertheless, respondents did identify a number of success factors, including increased collaboration, commitment, clarity about expected outcomes, accountability for knowledge exchange and capacity for sustainability.

The Role of Reports

Overall, what do these research projects tell us about how reports on the working conditions of nurses can help? What roles can these reports play? How can they be more effective? What else is needed to improve nurses' working conditions?

Emerging evidence of positive change

In the most concrete sense, the working conditions of nurses are determined by the immediate physical, institutional and social environments in which they work. Responsibility for these rests with front-line supervisors and local administrators. However, according to the research summarized above, these are the people least likely to be aware of reports aimed at improving nurses' working conditions. Yet, as Leiter and Fitch show,[6,10] there has been some improvement in areas identified by the reports. To what extent these reports were responsible for the change is difficult to assess. In some cases, they may have fostered discussion that brought new ideas and approaches to the attention of front-line supervisors and administrators, or changed the constraints under which they operated.

Raising the issue

One role that the reports certainly played was to raise the profile of nurses' working conditions on the political agenda. Given governments' responsibility for providing and funding health care, as well as their activities in health human resources planning and education, it is unlikely that nurses' working conditions will improve unless they are given explicit consideration in government planning and policy-making processes.

Building collaboration

The reports also expanded the range of participants and interests involved in policy debates on the topic. They provided senior decision makers and other leaders with evidence to validate their own ideas, challenge others, assess change initiatives, or lobby for change. In this way, the reports supported a broader range of policy choices.

Barriers to Improving Workplace Health

Barriers to implementing change identified by HPRP research include:

Poor communication: Information is not always made available to all levels of the work force. Expectations are unclear—i.e., who is responsible for implementing change?

Lack of buy-in: Change requires collaboration among many players, some of whom may be more accepting than others. Agreement on an appropriate course of action may be difficult.

Lack of resources: Implementing changes requires financial and human resources, both of which can be in short supply.

Improving transfer and utilization

Evidence from the HPRP projects does not show whether these reports could have played other important roles in improving nurses' working conditions if a significant number of nurses, front-line supervisors and local administrators had been aware of them. However, the potential for increased transfer and utilization appears to exist. Some of the challenges facing nurses (e.g., discouragement about the slowness of change, quality of work life, communication, employee recognition, teamwork) might have been mitigated had nurses, their supervisors or administrators been aware of the findings and given the opportunity to discuss them in relation to their own workplaces.

Putting to use emerging knowledge on "facilitators" of knowledge transfer and utilization will assist efforts to improve working conditions for nurses. In turn, these efforts will contribute to achieving the goals of Canada's national health human resources strategy.

If these and similar reports can play a greater role in improving working conditions for nurses, how can they be made more effective? The projects summarized reinforce the importance of disseminating information by mechanisms and in formats suitable for the intended audiences. For example, Leiter noted that extensive media promotion of the Romanow Report[7] was one reason that front-line stakeholders were aware of it. Several of the projects also identified length and readability of reports as a key factor.[6] Research by Rukholm and Fitch showed that including issues specific to certain segments of the target audience could increase the reach and impact of such reports.[9,10] Additionally, Lavis noted that both researchers and policy makers see themselves as jointly responsible for knowledge transfer.[5] Thus, the institutional capacity to receive, digest and respond to such reports also influences their effectiveness.

Looking Ahead

This research provides abundant information on the barriers to implementing the reports' recommendations, including budgets, workload, competing priorities and lack of organizational infrastructure. These factors, in turn, link to issues such as the level and distribution of resources in the health care system, the demand for various types of health care services, and the competing demands on the health care system and its organizational resources. While these broader issues ultimately place some limits on what is possible, this type of report can help focus attention on nurses' working conditions when these broader issues are being considered.

As the interview on page 3 notes, and as the findings from the HPRP reports support, positive changes in nurses' working conditions are underway. Building on this momentum, putting to use emerging knowledge on "facilitators" of knowledge transfer and utilization will assist efforts to improve working conditions for nurses. In turn, these efforts will contribute to achieving the goals of Canada's national health human resources strategy. The next article explains the components of this strategy more fully.

Please note: Full references are available in the electronic version of this issue of the Bulletin: <http://www.healthcanada.gc.ca/hpr-bulletin>.

Competing agendas: Political agendas may differ from health care organizations' agendas and are subject to change.

Lack of context: Some of the recommendations may be vague, provide no direction for action, or not be applicable in all settings.

Time constraints: Immediate priorities (i.e., health crises, labour negotiations) take precedence over longer term goals. Nursing workloads limit time available for knowledge transfer.

Robin Buckland, *RN, MScN,*
Venetia Lawless *and*
M. Ian Bowmer, *MD, all of the Health Human Resources Strategies Division, Health Policy Branch, Health Canada*

The Power of Collaboration

This article examines recent investments and collaborative efforts made through the Pan-Canadian Health Human Resource Strategy. *It also demonstrates how the federal, provincial and territorial governments'* Framework for Collaborative Pan-Canadian Health Human Resource Planning *constitutes a powerful policy lever vis-à-vis the working conditions of Canada's health care providers.*

Healthy Working Conditions for All Health Care Providers

Nurses are a cornerstone in Canada's health care system. They constitute a major component of our health human resources, with an important role in virtually all aspects of health care delivery. As an integral part of the health care team, issues affecting nurses—such as working conditions—have an impact on the entire team and how it functions.

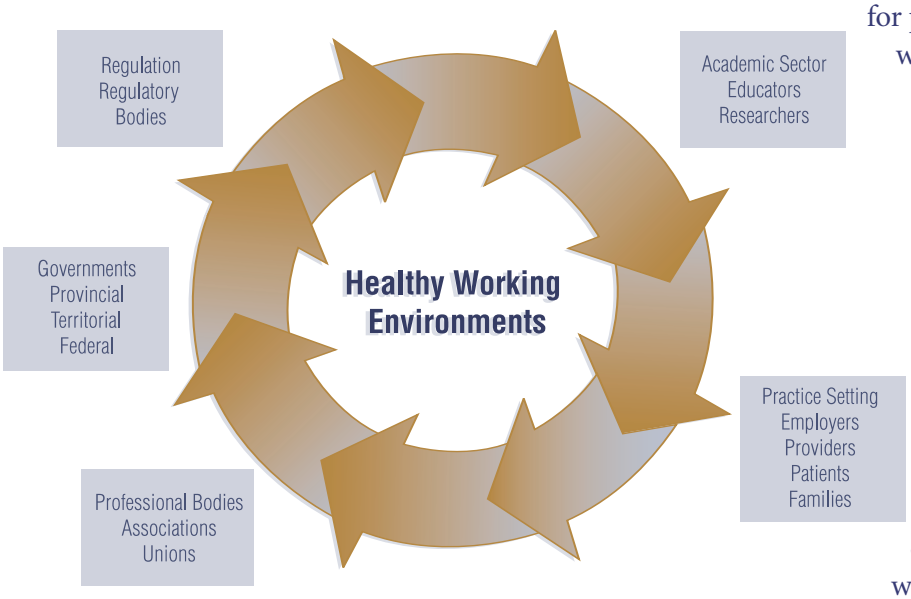
A healthy work force is a prerequisite to quality health services. Promoting healthy working conditions for all health care providers is a powerful policy lever. But, as Figure 1 shows, the solutions must come from multiple levels with collaboration among the many layers of players and stakeholders.

Multiple Levels of Influence

A recent study[1] identifies a number of themes important in the creation of high quality health care workplaces (see Figure 2). Several of these themes have been discussed earlier in this issue (e.g., human resource issues, information, systems and structures). Figure 2 also identifies other key themes for facilitating change. Supervisory support for balancing work and life, and the transparency of the process of decision making have been found to be enabling forces in a healthy working environment (**leadership**). Enabling forces also include improvements in autonomy and workplace practices that ensure fairness and the flexibility of managers (**work relationships**).

Clearly, there are multiple levels of influence and areas for potential action. Although many of these areas are well known, change will require the involvement of multiple stakeholders. The federal government, in partnership with key stakeholders, is playing an important role promoting healthy working conditions for Canada's health care providers by addressing the many components of health human resources planning that influence working conditions.

Figure 1: The Power of Collaboration



Following Through on an F/P/T Agreement

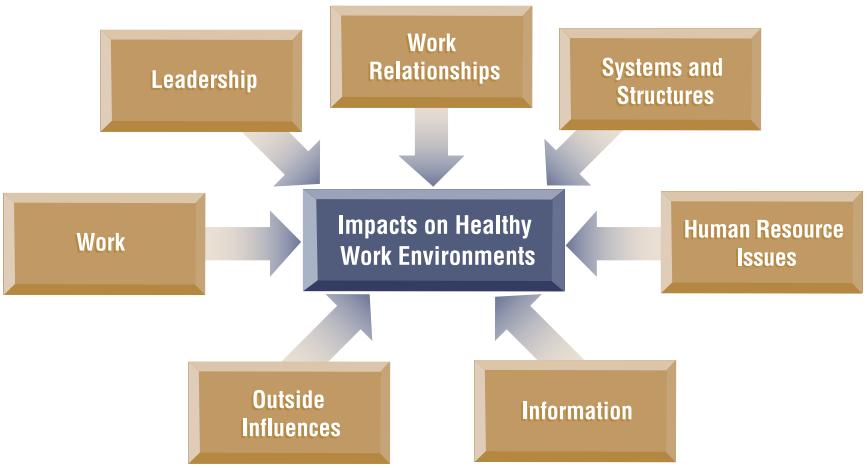
Canada's health care providers are part of a constantly evolving health care landscape in which factors such as an aging population and

work force and health care reforms (e.g., patient wait time guarantees) all contribute to the need for change. Health human resources are the health care system's greatest asset. In fact, Canada's ability to provide access to high quality, effective, patient-centred and safe health services depends on having the right mix of health care providers with the right skills, who are in the right place at the right time.

The *2003 Health Accord*, signed by all First Ministers, sets out a health care renewal agenda based on consultations with Canadians, including the Romanow Commission.[2] The *Pan-Canadian Health Human Resource Strategy* responds to the Accord by seeking to secure and maintain a stable and optimal health work force and supporting overall health care renewal.[3] The three components of the Strategy contain important policy levers that can promote healthy working conditions for Canada's health care providers. The following section describes each component and highlights some of the achievements so far.[3,4]

At the heart of any health care system are the people who deliver care—health human resources.

Figure 2: Key Themes Critical to the Creation of High Quality Health Care Workplaces



Source: Adapted from Smadu et al., 2006.[1]

The Strategy: Progress to Date

Interprofessional Education for Collaborative Patient-Centred Practice (IECPCP)

Collaborative patient-centred practice is a practice orientation, a way of health care professionals working together and with their patients.

. . . changing the way we educate health providers so Canadians will have better and faster access to the health care they need when they need it, ultimately boosting the satisfaction of both patients and health care providers

Interprofessional, collaborative team-based practice may well be the way of the future.[5] Collaborative patient-centred practice promotes the active participation of each discipline in patient care by optimizing staff participation in clinical decision making within and across disciplines, and encouraging respect for the contributions of all professionals.[6] Increasingly, evidence suggests that collaborative, team-based practice results in improved job satisfaction—key to a healthy working environment.

The IECPCP component of the Strategy has made significant strides in promoting interprofessional education and collaborative patient-centred practice. It has developed a theoretical framework, funded 20 learning projects across Canada, and established a Canadian Interprofessional Health Collaborative[7] to help identify promising practices. These efforts will contribute to IECPCP's growing evidence base and, by extension, promote positive working relationships and working environments for tomorrow's health care providers. Other achievements include:

- efforts to support interprofessional collaboration through the identification of specific liability barriers, which prevent health care professionals from working together
- educational initiatives on interprofessional collaboration partnerships for patient-family centred care

Recruitment and retention of health care providers/professionals

. . . encouraging more people to enter the health care field and improving working conditions to keep them there

Evidence demonstrates an urgent need to recruit and retain key professionals to ensure Canadians have access to the health care they need.

There are current and impending imbalances in the supply of health care providers across a wide variety of disciplines. As the health work force continues to age, demand for services increases; and as the workplace becomes more global, the need to appropriately recruit and retain health human resources is becoming essential.[4] We have seen shortages increase

the strain upon those left to provide the care. Using a multi-pronged approach, this component of the Strategy is addressing provider shortages.

Efforts include a promotional campaign in partnership with the Canadian Medical Association and the Canadian Nurses Association that targets health professions generally and, more specifically, recruitment of young people.

As well, the Internationally Educated Health Care Professionals (IEHPI) initiative has worked in partnership with provincial and territorial governments and stakeholders in facilitating the assessment and integration of internationally educated health care professionals. One goal is to help alleviate the burden of work on overextended health care providers already in the system.

A major component of the recruitment and retention component of the Strategy is the Healthy Workplace Initiative (HWI) which will build momentum for positive change and provide a basis for a shared vision of a healthy workplace by identifying innovative initiatives that promote healthy workplace practices.

The main objective is to support current actions by health care organizations to create and maintain healthy work environments by addressing symptoms of unhealthy workplaces, focusing on front-line patient care or related health services, and supporting initiatives that lead to improvements in:

- work environments
- health and well-being of health care staff
- job satisfaction and quality of work life

Four million dollars has been invested in a series of provincial and national projects.[8] For example, in Newfoundland and Labrador, a project entitled *Creating a Culture of Safety* creates awareness and recognition of a culture of safety, while balancing the mental, emotional and physical health needs of employees. In Québec, the McGill University Health Centre is improving workplace health for individuals and helping organizations address their unique work force challenges through *Programme inter-hospitalier de recherche-action sur le climat de travail.* In Manitoba, the Winnipeg Regional Health Authority *Healthy Workplace Project* is working to increase morale, job satisfaction and productivity, and to reduce accidents and absenteeism by creating a healthier workplace culture.

A more integrated approach to health work force planning that responds to the complexity of Canada's health care system and its ongoing challenges.

Some other activities of the HWI include:

- a Quality Worklife-Quality Health Care Collaborative which is working to develop an integrated action strategy to transform the quality of work life for Canada's health care providers
- a study on retaining and valuing experienced nurses through innovative healthy workplace practices
- sharing practices through a series of knowledge exchange activities
- supporting the implementation of healthy workplace strategies in the areas of home and community care settings

Over the long term, the HWI will contribute to enhancing the recruitment and retention of health providers/ professionals, the quality of patient care and patient safety, and operational excellence.

Pan-Canadian health human resource planning

. . . ensuring we have enough of the right types of health care providers to meet the needs of Canadians

This component is designed to ensure that Canada has the right mix of health care providers, now and in the future. It will consider the trends, gaps and risks associated with the health work force and establish a process for collaborative decision making.

Progress to date is promising and includes work through the *Health Human Resources Databases Development Project* and the *Health Cross-Jurisdictional Labour Relations Database.* These projects will aid planners in ensuring that appropriate health human resources are in place which will decrease the strain felt by front-line providers, improve working conditions and, ultimately, enhance the quality of health care services. This work includes physician resource projection modelling and a Health Human Resources Modelling Working Group to advance a network of policy and technical experts.

Framework for Collaborative Pan-Canadian Health Human Resource Planning

The Advisory Committee on Health Delivery and Human Resources (an F/P/T committee reporting to the Conference of Deputy Ministers of Health) has recently developed a *Framework for Collaborative*

Pan-Canadian Health Human Resource Planning that will help shape the future of health human resources planning and health service delivery in Canada.[9] The Framework will be a powerful tool in improving the working environments of health care providers.

A vision that includes a more supportive satisfying work environment for health care providers through collaborative strategic federal/provincial/territorial health human resources planning.

In the proposed approach, each jurisdiction will continue to plan its own health care system, develop service models, and develop and implement health human resources policies and plans. However, all jurisdictions will do this within the context of a pan-Canadian framework that shares information and works collaboratively to develop the optimum number and mix of providers needed to meet their needs by enhancing each jurisdiction's capacity to:[10]

- plan for the optimal number, mix and distribution of health care providers, based on system design, service delivery models and population health needs
- work closely with employers and the education system to develop a health work force that has the skills and competencies to provide safe, high quality care, work in innovative environments, and respond to changing health care system and population health needs
- achieve the appropriate mix of health providers and deploy them in service delivery models that make full use of their skills
- build and maintain a sustainable work force in healthy, safe work environments

The goals and objectives are to improve health human resources planning in general and, specifically, to enhance working environments. Success will depend on the partners' commitment to a more collaborative approach.[10] The critical success factors for applying the Framework and building this commitment are listed in the sidebar below.

Critical Success Factors

Critical Success Factor	Context
Appropriate stakeholder engagement	• Delivery models based on population health models • Changing skills and competencies • Consultation and timely communication
Strong leadership and adequate resources	• Leaders at all levels • Champion collaborative health human resources planning and shared vision • Resources to support planning functions
Clear understanding of roles and responsibilities	• Different issues best addressed at appropriate levels
A focus on cross-jurisdictional issues	• Value added • Tools that enhance capacity to plan • Priorities based on consultation
A change in system or organizational culture	• Need to understand current cultural landscape • Readiness to change • Health care providers as a valuable asset • Issues identified that affect recruitment and retention • Decisions that support healthy workplaces and increase job satisfaction
Flexibility	• Responsive to changes in system design and the impact of those changes on health human resources

Conclusion

Canada's health care providers are our health care system's greatest asset. Their health and well-being affect the quality of care within the health system. Healthy working environments support healthy providers, and a healthy cadre of providers will help all levels of government, health care organizations, health professional associations, and providers themselves, attain the goal of a strong and sustainable health care system.

As noted in the article on page 13, "workplace and work force issues alike call for collaboration and input from all levels of government, in partnership with front-line health care providers, professional organization and other stakeholders." The federal, provincial and territorial *Framework for Collaborative Pan-Canadian Health Human Resource Planning* offers an important policy lever. Its power will be in a continued collaboration.

Please note: Full references are available in the electronic version of this issue of the Bulletin: <http://www.healthcanada.gc.ca/hpr-bulletin>.

Who's Doing What?

Who's Doing What? *is a regular column of the* Health Policy Research Bulletin *that looks at key groups involved in policy research related to the theme area. This article profiles national-level initiatives and various stakeholders addressing working conditions for nurses. Given the importance of a collaborative approach, these initiatives engage stakeholders at multiple levels, including provincial partners.*

Julie Creasey, *Applied Research and Analysis Directorate, Health Policy Branch, Health Canada*

The author acknowledges the assistance of **Sandra MacDonald-Rencz**, *Office of Nursing Policy, Health Policy Branch, Health Canada.*

Government of Canada

Health Canada

Office of Nursing Policy (ONP)
ONP promotes quality workplace settings in Canada and around the world, including leading initiatives under the *Pan-Canadian Health Human Resource Strategy*, such as a national strategy for interdisciplinary education and the Healthy Workplace Initiative (see page 38).

Health Human Resource Strategies Division (HHRSD)
HHRSD manages the Strategy's three initiatives (see sidebar), as well as developing policy and providing advice about health human resources priorities. HHRSD also offers secretariat support to the Federal/Provincial/Territorial Advisory Committee on Health Delivery and Human Resources.

First Nations and Inuit Health Branch (FNIHB)
FNIHB implements the Strategy from a First Nations and Inuit perspective. In 2005–2006, Health Canada funded 10 projects under this component of the Strategy (visit: <http://www.hc-sc.gc.ca/hcs-sss/hhr-rhs/strateg/ar-ra-2006/abor-autoch_e.html>).

Microsimulation Modelling and Data Analysis Division (MSDAD)
MSDAD has developed models that forecast demand for registered nurses (RNs), and demand and supply forecast models for physicians by region across Canada. As these models aim to identify gaps in demand and supply, they are useful for policy development.

Key Collaborative Initiatives

Pan-Canadian Health Human Resource Strategy
<http://www.hc-sc.gc.ca/hcs-sss/hhr-rhs/strateg/index_e.html>

As discussed on page 36, the Strategy seeks to secure and maintain a stable and optimal health work force in Canada and to support overall health care renewal through three initiatives:

1. Pan-Canadian Health Human Resource Planning
2. Interprofessional Education for Collaborative Patient-Centred Practice
3. Recruitment and Retention of Health Care Providers/Professionals

Building the Public Health Workforce for the 21st Century: A Pan-Canadian Framework for Public Health Human Resources Planning
<http://www.phac-aspc.gc.ca/php-psp/pdf/building_the_public_health_workforce_fo_%20the-21stc_e.pdf>

The goals of this Framework include increasing jurisdictions' planning and recruitment/retention capacity, developing an interprofessional public health work force, and maintaining a stable, affordable public health work force in healthy, safe work environments.

Building the Future: An Integrated Strategy for Nursing Human Resources in Canada
<http://www.buildingthefuture.ca>

This recently completed two-phase national **Nursing Sector Study** was endorsed and led by Canadian nursing stakeholder groups.

Canadian Nursing Leadership Study
<http://www.nursingleadershipstudy.ca>

Led by the University of Western Ontario School of Nursing, this study profiles nursing leadership/management structures in Canadian hospitals.

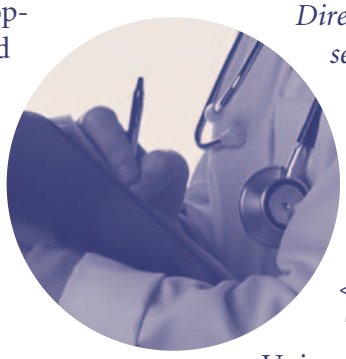
Public Health Agency of Canada

The Workforce Development Division

Along with partners and stakeholders, the Agency is working to mobilize pan-Canadian action to improve Canada's public health work force. Approaches involve: public health human resources planning; training, recruitment and retention strategies; the development of competency profiles; and practice-based educational, training and professional development opportunities and incentives.

Statistics Canada

With funding from the Canadian Institute for Health Information and Health Canada, the Department recently conducted the *National Survey of the Work and Health of Nurses* (see page 17).



Research Organizations

Canadian Institute for Health Information (CIHI)

<http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=hhrdata_nursing_e>

CIHI provides data and research on various aspects of nursing and health human resources. Its work includes:

- participation in the *National Nursing Sector/ Occupational Study* led by Human Resource Development Canada
- development of a pan-Canadian supply-based minimum dataset that identifies and validates health human resources priority information needs, related indicators, and data elements collected in a standardized fashion across Canada

Canadian Health Services Research Foundation (CHSRF)

<http://www.chsrf.ca/research_themes/nlop_e.php>

Nursing Leadership, Organization and Policy is a key research theme for CHSRF. Some examples of research projects underway are *Understanding the Factors that Influence Recruitment and Retention in Oncology Nurses* and *Integrating New Nursing Graduates in the Workplace: Strategies for Retention and Career Development.*

Canadian Institutes of Health Research—Institute of Health Services and Policy Research (IHSPR)

<http://www.cihr-irsc.gc.ca/e/13733.html>

IHSPR works to strengthen Canada's health care system through health services and policy research. Along with CHSRF, IHSPR co-leads *Listening for Direction: A national consultation on health services and policy issues.* Phases I and II have been completed and planning for *Listening for Direction III* is underway.

Nursing Effectiveness, Utilization and Outcomes Research Unit

<http://www.nhsru.com/index.html>

This collaborative project involves the University of Toronto Faculty of Nursing and McMaster University School of Nursing. It conducts research and other forms of inquiry to help set evidence-based policy and management decisions about the effectiveness, quality, equity, utilization and efficiency of health care and health services in Ontario.

Professional Organizations and Associations

Canadian Council on Health Services Accreditation—Quality Worklife-Quality Healthcare Collaborative

The Canadian Council on Health Services Accreditation, with funding from the Strategy, manages a coalition of 11 national health care organizations and more than 45 quality work life experts focusing on a national change strategy for patients and health care workers.

Canadian Nurses Association (CNA)

CNA has developed *NurseOne*—a web-based nursing portal that connects nurses to timely, easily accessible information on all aspects of health care. *NurseOne* is especially valuable for those working in rural, isolated and First Nations and Inuit communities (visit: <http://www.nurseone-inf-fusion.ca/splash.html>).

Who's Doing What?, *continued on page 45*

Did You Know?

Did You Know? is a regular column of the Health Policy Research Bulletin *that explores commonly held misconceptions about health data and information. This issue uses currently available data to support—or to refute—common perceptions about the nursing work force.*

Teklay Messele, *Microsimulation Modelling and Data Analysis Division, Applied Research and Analysis Directorate (ARAD), Health Policy Branch, Health Canada*

Are these propositions . . .	True or False?
1 **Growth in nursing employment slowed in the 1990s.**	**True.** During the 1980s, nursing employment increased by 3.4%, but grew by only 0.2% in the next decade. During the cutback period (1993–98), nursing employment fell by a total of 3.3% before beginning to recover.[1,2] Employment of registered nurses (RNs) increased from 232,566 in 2000 to 251,675 in 2005, at an annual average growth rate of 1.6%.[3]
2 **Unemployment for nurses is low.**	**True.** The unemployment rate for RNs (those seeking employment in nursing) in 2005 was 1.3%, well below the national labour force average of 6.8%.[4] Even in the mid-1990s, the unemployment rate for nurses was low (4.1% in 1996), compared to the national average (9.6%). As a result, there are few qualified unemployed nurses available.[5]
3 **The proportion of part-time workers in nursing is the same as in the general work force.**	**False.** Even in the 1980s, about 35% of nurses worked on a part-time basis, well above the average for the overall labour force (14.4%).[6,7,8] In 2005, 43.8% of RNs worked part time (including 11.1% in casual work), compared to 18.3% of the general work force.[9] The number of RNs working full time increased just 10.7% from 1980 to 2005, while the total number of RNs working in nursing increased 29.5%.[3]
4 **Nurses' retirement age cuts into the nursing work force.**	**True.** Most nurses retire around age 56. In 2005, RNs age 55 and over made up 19.7% of the RN work force,[10] compared to 13.7% of all workers in that age group.[11] It is projected that, if RNs retire at age 55, and no new recruiting and retention initiatives are put in place, up to one third of the 2001 RN work force could be lost by 2010.[12,13]
5 **The entry-level nursing cohort is smaller than the one approaching retirement.**	**True.** In 2005, only 2.5% of RNs were under age 25, whereas 19.7% were age 55 and over.[14] This compares to 16.3% and 13.5%, respectively, for the general labour force.[15] The ratio of RNs in their 50s to those in their 20s is three to one. These numbers indicate that nurses are the "bow wave" of an aging society.
6 **Nursing school enrolments have risen in recent years.**	**True.** The provinces recently committed to increasing the number of new nursing seats by a minimum of 10% annually over 1998–99 Canadian admission levels of 5,787.[16,17] The ARAD Nursing Supply Model calculates that this increase will bring the number of graduates to 10,083 by the year 2013, equal to the 1972 graduate peak.

Are these propositions . . .	True or False?
7 Immigration is an important source of new nurses in Canada.	**True.** In Canada, the proportion of foreign-educated RNs employed in nursing increased from 6.8% (15,659) in 2001 to 7.6% (19,230) of all RNs employed in nursing in 2005.[3] During the same period, foreign-educated RNs in Ireland and Austria made up 3.6% and 6.7% of the nursing work force, respectively, while they made up 8.3% and 23.1% in the United Kingdom and Switzerland, respectively.[18] The proportion of foreign-educated nurses in the United States was 16.5% in 2000.
8 The nursing profession is self-regulated.	**True.** Like other health professions, provincial nursing associations develop and apply standards of practice and codes of conduct, and take disciplinary measures to ensure public safety.[19]
9 The nursing profession is mostly unionized.	**True.** About 52% of nurses are unionized, compared to 16.7% of all other workers. The main exceptions are, nurses working in private nursing homes, physician offices, and community health and similar settings. Most unionized nurses work in hospitals. The high rate of unionization reflects the fact that health care providers (especially in hospitals) are part of the public sector, which was widely unionized in the 1960s.[20]
10 The provinces and territories are solely responsible for delivering health care services to First Nations and Inuit communities in the North.	**False.** The federal government is mandated to deliver health care services to the more than 600 First Nations and Inuit communities across Canada. However, based on a transfer agreement with the federal government, Band councils in about half of these communities are responsible for delivering health care services, and so directly hire about 600 nurses. Health Canada, through the Office of Nursing Services and the Regional Offices of the First Nations and Inuit Health Branch, hires about 700 nurses for the balance of communities.[21]
11 The number of qualified nurses per capita in Canada is lower than the average of OECD countries.	**False.** Qualified nurses include regulated nurses: RNs, licensed practical nurses (LPNs) and registered psychiatric nurses (RPNs). There were 990 qualified nurses per 100,000 people in Canada in 2004, more than the average of 830 in OECD (Organisation for Economic Co-operation and Development) countries. Nurses per capita have decreased in Canada since 1990, but have increased in most other countries. However, in recent years, Canada's downturn has halted and the per capita ratio has risen since 2002. Reductions are attributed to a decline in enrolment and graduation from nursing schools, and a reduction in the number of hospital beds.[22]
12 The ratio of practising physicians to practising nurses in Canada is one of the highest in OECD countries.	**False.** There is a significant variation in the physician-to-nurse ratio among OECD countries and these ratios change over time. In Canada, there were 190 physicians per 1,000 nurses in 1990 and 211 in 2001. The lowest reported ratio was in Norway (117) and the highest was in Portugal (841). In some countries, such as Australia, the ratio is increasing, while in others, such as France, it has been decreasing (from 557 in 1990 to 477 in 2001).[23]

@ *Please note: Full references are available in the electronic version of this issue of the Bulletin: <http://www.healthcanada.gc.ca/hpr-bulletin>.*

Using Canada's Health DATA

Using Canada's Health Data *is a regular column of the* **Health Policy Research Bulletin** *highlighting some of the methods used in analyzing health data. In this issue, we examine a methodology that uses survey data to estimate the full-time equivalent of registered nurses.*

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Estimating the Full-Time Equivalent

As the article on nursing shortages illustrates (see page 21), estimates of the full-time equivalent (FTE) of registered nurses (RNs) are key to analyzing the supply of Canadian nurses. One FTE reflects the typical workload of an average RN, so the *work intensity* of each nurse can be estimated with respect to one FTE.

The Registered Nurses Database is commonly used to provide information about the number (headcounts) of RNs by full- or part-time status. A method was needed to convert these work force headcounts into FTEs so that analysts could estimate the effective supply and use of nurses. This article uses survey data to present such a methodology.

About the Data

Data are from the 2000 cross-sectional Public-Use Microdata File (PUMF) for the *Survey* of *Labour and Income Dynamics* (SLID), which is a collection of income, labour and family variables on adults and their families in Canada. The **person** file from SLID provides information on such personal characteristics as year of birth, sex, marital status, household size, household type and main occupation. Information is also included on an individual's financial situation, such as income sources, educational activity and level of schooling.

Since females constitute 95% of the RNs, a certain number of male survey respondents were randomly included such that, in the pool of RNs, the males would constitute only 5% of the full-time RNs in each province.

A Two-Step Methodology

One of the categories in the SLID **occupation** variable is "professional occupations in health, nurse supervisors and registered nurses."

Step One: Identify RNs from this category by making the following assumptions:

- An RN has a university degree/certificate/diploma.
- An RN earns an hourly wage in the range obtained from the National Nurses Salaries Data Base, 2000.

The income assumption excludes RN supervisors whose minimum hourly wage is greater than the maximum wage of RNs who are not supervisors, as well as other health care professionals with a high minimum wage. Health care professionals (e.g., technicians) whose wages are within the same range as RNs may be included; however, RNs significantly dominate this group, as they do all health human resource categories.

The final sample included all female RNs, identified by the above criterion, who were working full time. Since females constitute 95% of the RNs, a certain number of male survey respondents were randomly included such that, in the pool of RNs, the males would constitute only 5% of the full-time RNs in each province.

Step Two: Calculate the median working hours of all full-time RNs.
Using the selected sample, the median working hours of full-time RNs is calculated to be 1,955 hours/year, which is consistent with the range of 1,879 hours/year and 2,015 hours/year given by the Canadian Federation of Nurses. Median estimates are used because the data are highly skewed (see example in Figure 1).

Having determined nursing working hours/year, it is now possible to estimate FTEs by age group and province. Table 1 shows the FTE of full-time RNs by age group. Due to the small sample size for male RNs, FTE estimates were made by age group, not by age-sex group. Note also that any estimates beyond the 55–59 age group are unreliable due to small SLID sample size and are therefore

excluded. This exclusion does not affect the method's usefulness, however, as most RNs retire by age 60.

Skewed Distribution

Note that the mean is less than the median for all age groups. This means that the extreme values on the lower end of the scale are farther from the mean than the extreme values on the high side (see example in Figure 1). The smaller values skew the mean downward, which is consistent with the high level of absenteeism in the nursing sector.

A Useful Tool

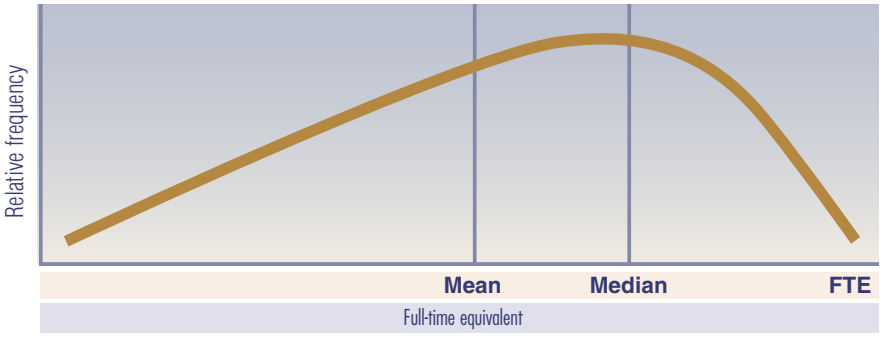
The method presented in this article is a very useful tool for estimating the FTE of RNs by age, province and full- or part-time status, which is key to understanding nursing shortages in Canada. As well, the method could be adapted to estimate the FTE of other health care professionals and to help inform overall health human resource policies.

Table 1: Full-Time Equivalent of Full-Time RNs, by Age Group, Canada, 2000

Age Group	Median of FTE			Mean of FTE		
	FTE	Lower 90% CL	Upper 90% CL	FTE	Lower 90% CL	Upper 90% CL
25–29	0.933	0.800	1.000	0.884	0.829	0.940
30–34	0.933	0.800	1.000	0.862	0.817	0.907
35–39	1.000	0.960	1.067	1.038	0.940	1.137
40–44	0.968	0.880	1.000	0.910	0.864	0.956
45–49	1.000	0.960	1.067	0.978	0.909	1.047
50–54	1.000	1.000	1.067	1.021	0.949	1.093
55–59	1.067	0.934	1.067	1.010	0.925	1.095
60–64	NA			NA		
65+	NA			NA		

CL—confidence level

Figure 1: Example of a Skewed Distribution to the Left



Who's Doing What?, *continued from page 41*

Selected Provincial Nursing Organization Initiatives

College of Registered Nurses of Nova Scotia (CRNNS)—*A Practice Environment Collaboration Program* is a self-directed program that identifies key quality attributes or systems that are critical to nurses meeting their standards of practice and quality care (visit: <http://www.crnns.ca/default.asp?id=190&sfield=Content.Id&mn=414.70.81.413&search=1159>).

The **College of Licensed Practical Nurses of Newfoundland and Labrador** and the **Association of Registered Nurses of Newfoundland and Labrador** have begun a *Quality Practice Environment Program* and articulated standards shown to influence the professional practice environment.

College & Association of Registered Nurses of Alberta (CARNA)—*Alberta RN* publishes a regular column called "Healthy Solutions" to provide information on topics such as compassion fatigue and violence in the workplace (visit: <http://www.nurses.ab.ca/issues/Healthy_solutions.html>).

Registered Nurses' Association of Ontario (RNAO) is leading a *Healthy Work Environments Best Practice Guidelines* project that will deliver six guidelines related to healthy work environments (visit: <http://www.rnao.org/Page.asp?PageID=751&SiteNodeID=241&BL_ExpandID=>).

Mark Your Calendar

What	When	Theme
1st National Conference for Community Health Nurses: Mapping the Future for Better Health	May 3–5, 2007 Toronto, ON <http://www.chnac.ca/>	Exploring the realities, challenges and opportunities that confront nurses and the nursing profession related to community health and health care reform
18th International Conference on the Reduction of Drug Related Harm: Harm Reduction—Coming of Age	May 13–17, 2007 Warsaw, Poland <http://www.harmreduction2007.org/>	Disseminating harm reduction ideas and practice, including a review of harm reduction over the past 18 years
International Council of Nurses 2007 International Conference	May 27–June 1, 2007 Yokohama, Japan <http://www.icn.ch/conference2007/info.htm>	Highlighting the realities of nursing practice and nurses' expertise in dealing with the unexpected
34th International Conference on Global Health	May 29–June 1, 2007 Washington, DC <http://www.globalhealth.org/conference/>	Focusing on a range of partnerships—how they are built, what they have and can deliver, and how those living in poverty and disease can best benefit
International Conference on Evidence-Based Best Practice Guidelines	June 6–8, 2007 Markham, ON <http://www.rnao.org/Page.asp?PageID=1209&ContentID=1436&SiteNodeID=196&BL_ExpandID=>	Setting the context for excellence in nursing clinical practice and healthy work environments
National Healthcare Leadership Conference 2007	June 11–12, 2007 Toronto, ON <http://www.healthcareleadershipconference.nexx.com/default1.asp>	Addressing innovation in health services: from local leadership to national performance
19th World Conference on Health Promotion and Health Education—Health Promotion Comes of Age: Research, Policy and Practice for the 21st Century	June 11–15, 2007 Vancouver, BC <http://www.iuhpeconference.org/>	Reviewing and critically reassessing health promotion's progress since the Ottawa Charter and setting the course for new challenges in an increasingly globalized world
International Conference on Physical Activity and Obesity in Children	June 24–27, 2007 Toronto, ON <http://www.phe.queensu.ca/epi/obesity/>	Informing the development of a scientifically-based community strategy to reduce the incidence of childhood and youth obesity
6th World Congress on Health Economics	July 8–11, 2007 Lund, Sweden <http://www.healtheconomics.org/congress/2007/>	Focusing on the theme of explorations in health economics
2007 Conference on the Ethics of Health Promotion	September 18–20, 2007 Ghent, Belgium <http://www.healthpromotionethics.eu/index.php?option=com_frontpage&Itemid=1>	Setting an ethical agenda for health promotion