



Building the Future: an integrated strategy for nursing human resources in Canada



THE INTERNATIONAL
NURSING LABOUR MARKET

The International Nursing Labour Market Report

This report is part of an overall project entitled **Building the Future: An integrated strategy for nursing human resources in Canada.**

The International Nursing Labour Market

© 2004 The work in this publication was provided to The Nursing Sector Study Corporation courtesy of/or under license from the respective authors.

Publisher The Nursing Sector Study Corporation

Authors Andrea Baumann RN, PhD
Jennifer Blythe PhD
Camille Kolotylo RN, PhD
Jane Underwood RN, MBA

Editor Maude Downey

Translator France Jodoin

Designer Fair Creative

Project Management The Nursing Sector Study Corporation
99 Fifth Avenue, Suite 10
Ottawa, Ontario K1S 5K4

Phone (613) 233-1950

E-mail info@buildingthefuture.ca

Website www.buildingthefuture.ca

The International Nursing Labour Market (English, PDF)

ISBN 0-9734932-0-8

Également disponible en français sous le titre:

La main d'œuvre infirmière à l'échelle internationale.

Canada

This project is funded in part by the Government of Canada.

The opinions and interpretation in this publication are those of the author(s) and do not necessarily reflect those of the Government of Canada.



Table of Contents

Preface	ii
Executive Summary	iii
1. Introduction	1
2. Methods	2
3. Studying the International Nursing Labour Market	3
3.1. Data Quality and Limitations	3
3.1.1. Lack of Standardized Data and Comparable Databases	3
3.1.2. Inconsistent Quality of the Data	4
3.1.3. Non-standard Use of the Term <i>Nurse</i>	5
3.1.4. Nurses' Roles in Varying Health Care Systems	6
3.1.4.a. Overview of Education Programs	6
3.1.4.b. Entry Into Practice and Regulatory Frameworks	7
3.1.4.c. Variability in Nurses' Status and Roles	7
4. Labour Market Factors Affecting Nursing	9
4.1. Long-Term Trends	9
4.1.1. Demographic Changes	9
4.1.2. Technological Change	10
4.1.3. Globalization.....	11
4.2. Cyclic Change	12
4.2.1. Reduction in Demand	12
4.2.2. Reduction in Supply	13
4.2.2.a. Low Recruitment	13
4.2.2.b. High Attrition	13
4.2.2.c. Workplace Quality and Stability	14
4.3. The New Millennium: Renewal of Demand	15
5. The Current Nursing Shortage	16
5.1. Prevalence of Shortage	16
5.2. The Nature of the Shortage	17
5.3. Strategies to Address the Shortage	18
5.3.1. Internal Recruitment	18
5.3.2. Overseas Recruitment and Nurse Migration	19
5.3.3. Retention	20
6. Implications for Canada	22
7. Recommendations	23
REFERENCES	24
Appendix A. Main Search Methods	35
Appendix B. Key Indicators of the Labour Market	39
Appendix C. Acronyms	40
The Research Team	41



Preface

This report is part of an overall project, *Building the Future: An integrated strategy for nursing human resources in Canada*. The goal of the project is to create an informed, long-term strategy to ensure that there is an adequate supply of skilled and knowledgeable nurses to meet the evolving health care needs of all Canadians. Through surveys, interviews, literature reviews, and other research, *Building the Future* will provide the first comprehensive report on the state of nursing human resources in Canada. The project comprises the following two phases.

Phase I: Research about the nursing labour market in Canada is being conducted in stages. Reports will be released as the research work is completed to share interim findings and recommendations with the nursing sector. This is the first of these reports. A final report will be produced at the conclusion of this phase that will include all of the recommendations accepted by the Nursing Sector Study Corporation.

Phase II: A national strategy will be developed in consultation with government and non-government stakeholders that builds on the findings and recommendations presented at the completion of Phase I.

To oversee such a complex project, The Nursing Sector Study Corporation (NSSC) was created in 2001. The Management Committee of NSSC comprises representatives of the signatories to the contribution agreement with the Government of Canada and other government groups.

The multi-stakeholder Steering Committee for the project comprises approximately 30 representatives from the three regulated nursing occupations (licensed practical nurse, registered psychiatric nurse, and registered nurse), private and public employers, unions, educators, health researchers, and federal, provincial and territorial governments. The Steering Committee guides the study components and approves study deliverables including all reports and recommendations.

Members of the Management Committee and the Steering Committee represent the following organizations and sectors.

Aboriginal Nurses Association of Canada	National Union of Public and General Employees
Association of Canadian Community Colleges	Nurse educators from various institutions
Canadian Alliance of Community Health Centre Associations	Ordre des infirmières et infirmiers auxiliaires du Québec
Canadian Association for Community Care	Ordre des infirmières et infirmiers du Québec
Canadian Association of Schools of Nursing	Professional Institute of the Public Service of Canada
Canadian Federation of Nurses Unions	Registered Psychiatric Nurses of Canada
Canadian Healthcare Association	Representatives of provincial and territorial governments
Canadian Home Care Association	Service Employees International Union
Canadian Institute for Health Information	Task Force Two: A human resource strategy for physicians in Canada
Canadian Nurses Association	Victorian Order of Nurses Canada
Canadian Practical Nurses Association	
Canadian Union of Public Employees	
Health Canada	
Human Resources Development Canada	

Together, we are committed to building a better future for all nurses in Canada and a better health system for all Canadians.



Executive Summary

The purpose of this report is to present an overview of the international nursing labour market. It is intended to complement the *Canadian Nursing Labour Market Synthesis* to be presented as part of the overall research for Building the Future. This report includes information regarding the members of the three regulated nursing professions in Canada: registered nurses, licensed/registered practical nurses and registered psychiatric nurses. Where available, it also includes information on their international equivalents, who often have differing professional designations. The following acronyms are used in this report.

- RNs registered nurses
- LPNs licensed/registered practical nurses
- RPNs registered psychiatric nurses
(Note that although the acronym RPN refers to registered practical nurses in Ontario, Canada, it is not so used in this report.)

Methods

The study is based on published literature, grey literature, electronic sources, and correspondence with individuals with pertinent information. Major obstacles to studying the international nursing labour market include lack of standardized data elements and comparable databases, inconsistent quality of peer-reviewed and grey literature, international differences in the use of the professional designation of *nurse*, and difficulties comparing nurses' roles in qualitatively varying health care systems.

Labour Markets Affecting Nursing

Labour markets are affected by the interaction of long-term trends and labour market cycles. Trends in the nursing labour market include demographic changes, the evolution of complex technologies, and globalization. Demographic changes affect the nursing labour market in two ways. First, they affect the patient population, including their need for amounts and types of care. Second, they affect the numbers and specialties of workers in the labour force. Technological change affects how and where nurses care for patients, and globalization influences nurses' international mobility.

Market cycles determine the supply of nurses and the demand for their services. In the past decade, health care restructuring — including downsizing the nursing workforce — has occurred in most developed countries. From a nursing shortage in the late 1980s, the nursing labour market moved to a surplus state in the 1990s as a result of restructuring, then returned to a condition of shortage in the new century.

The Current Nursing Shortage

The contemporary nursing labour market is characterized by shortage in all but a few Asian and European countries. However, while there is evidence of supply problems in the international nursing workforce, it is difficult to identify their precise nature. Some writers deny that there is a true shortage of nurses and suggest that problems of supply relate to working conditions, non-competitive salaries, and the absence of full-time jobs. Developing countries experience nursing shortages because local nurses migrate to more affluent countries.



Strategies to Address the Shortage

Internal recruitment. Faced with increasing difficulties in filling nursing vacancies, many countries have implemented recruitment strategies to increase their supply of nurses (Buchan, 2002; Irwin, 2001). Strategies common to a number of countries include using high-profile recruitment campaigns, increasing the number of student placement positions in higher education, and making student scholarships and loans more plentiful (International Council of Nurses [ICN], 2001a; Sigma Theta Tau International, 2002; Victoria Auditor-General's Office, 2002). Some countries have also implemented interventions to entice nurses to return to nursing (Browne, 2001; Buchan, 2002; ICN, 2001a).

External recruitment. Many countries recruit nurses abroad. While the ICN upholds the rights of nurses to work where they wish, it suggests that the active, aggressive recruitment of nurses harms both donor and recipient countries (ICN, 2002a). In donor countries, targeting particular regions causes local shortages. When recipient countries recruit nurses into a dysfunctional health care system that has no effective human resource plan, they achieve only a short-term solution to a long-term problem (Buchan, Parkin, & Sochalski, 2003). They delay the implementation of effective measures to improve recruitment, retention, and long-term human resource planning (ICN, 1999). An additional effect of migration on nursing labour markets in developed countries is a possible deterioration of salary levels and working conditions.

Retention. While some governments are developing action plans for better deployment of the nursing workforce — including better cooperation among providers — better education for nurses, and development of guidelines for safe staffing (ICN, 2001a), few have implemented these plans.

Implications and Recommendations for Canada

The Canadian labour market can best be understood in an international and historical context, taking global trends and market cycles into account. Most of the developed world shares labour problems, such as the nursing shortage, with Canada. These problems cannot be studied and solved unilaterally. There is a need for initiation of worldwide collaboration among governments and for the development of international/statistical databases by national and international organizations. The goal would be the collection and organization of relevant, reliable, valid, comparable data on the nursing labour force, regionally and nationally, that would provide evidence to assist the international community and individual nations in formulating health care policy (Buchan et al., 2003; Irwin, 2001; Scanlon, 2001). The following are specific recommendations from this report.

1. Collaborate nationally and internationally on nursing workforce planning and research. Workforce planning should include long-term, medium-term, and short-term projections and strategies.
2. Develop national and international plans to re-create nursing capacity through recruitment and retention of staff and the maximization of human capital. A commitment should be made at all levels to plan and implement recommendations for change.



3. Initiate international collaboration among governments and develop international/statistical databases with the goal of collecting and organizing relevant, reliable, valid, comparable data on the nursing labour force. The goal would be to provide evidence to assist the global community and individual nations in formulating health care policy.
4. Create a Canadian database for health care workforce planning integrated at national, provincial, and organizational levels to serve national needs and be compatible with the proposed international database.



1. Introduction

The purpose of this report is to present an overview of the international nursing labour market. It is intended to complement the *Canadian Nursing Labour Market Synthesis* to be presented as part of the overall research for Building the Future. The report begins with a brief description of the methods and resources used in preparing the report, followed by a discussion of the barriers to obtaining an accurate picture of international labour markets. For clarity, the complex processes affecting labour market dynamics are categorized as trends and cyclic changes. The former refers to long-term historical processes such as demographic change, technological evolution, and globalization. The latter relates predominantly to labour market cycles. These processes are traced from health care restructuring in the 1990s to the severe nursing shortages in the current global labour market. The report ends with a discussion of the implications of the findings for Canada and recommendations for future workforce planning. This report includes information regarding the members of the three regulated nursing professions in Canada: registered nurses, licensed/registered practical nurses and registered psychiatric nurses. Where available, it also includes information on their international equivalents, who often have differing professional designations. The following acronyms are used in this report.

- RNs registered nurses
- LPNs licensed/registered practical nurses
- RPNs registered psychiatric nurses
(Note that although the acronym RPN refers to registered practical nurses in Ontario, Canada, it is not so used in this report.)



2. Methods

As the purpose of the project was exploratory, no selection criteria or classification frameworks were established before the sources were reviewed. A broad survey was made of the published literature, grey literature, and electronic resources, and correspondence was undertaken with individuals possessing information pertinent to the study (see Appendix A). The published literature was searched between March 2002 and July 2003 in CINAHL, MEDLINE, Healthstar/OVID, and journals at OVID. Grey literature included reports, news releases, statistical data, databases, and information from international university-based research units and international government departments. Grey literature was searched using *Copernic Pro 2001* software that simultaneously consults relevant search engines on the Internet. Both broad and narrow key words and phrases were used to search all sources. Broad terms, such as *nurse*, were used in an effort to capture information relating to all three regulated nursing professions. More specific words and phrases, such as registered nurse(s), licensed/registered practical nurse(s), and registered psychiatric nurse(s), were used in an effort to access data for each of the regulated nursing professions. As differing titles were found in the general search, they were then also used as search words.



3. Studying the International Nursing Labour Market

3.1. *Data Quality and Limitations*

Major obstacles to studying the international nursing labour market include the following items, which are discussed further below.

- Lack of standardized data elements and comparable databases.
- Inconsistent quality of peer-reviewed and grey literature.
- International differences in the use of the professional designation of the term *nurse*.
- Difficulty comparing nurses' roles in qualitatively varying health care systems.

3.1.1. Lack of Standardized Data and Comparable Databases

No Standard Terms for Nurses. Usually researchers use national census data, migration records, registration data, and work permits to describe professional workforces. However, these resources are useful only where professional categories are clearly defined. In most countries, there are no adequate systematic, national databases relevant to the nursing labour market (Aiken, 2001; Heinrich, 2001; Prescott, 2002). In some countries, even employment statistics do not adequately describe nurses. The category *nurse* may be applied to a range of workers, from unskilled and unregulated workers to baccalaureate-prepared registered nurses (RNs) and RNs with graduate education (American Association of Colleges of Nursing [AACN], 2002a).

Registration Versus Actual Mobility. National data on the nursing workforce are often produced by professional organizations. In Canada and other countries where registering bodies *do* keep records, accuracy is limited because internationally educated nurses who do not register are not tracked. On the other hand, double counting may occur when a nurse registers in two or more jurisdictions during a year. It is particularly difficult for registering bodies to track nurses when they move in and out of jurisdictions. Some nursing regulatory bodies keep records of requests for verification of credentials by nurses considering moving in or out of their jurisdictions. However, these records track estimated migration rather than actual migration and do not provide an accurate record of nurse mobility (Buchan, 2000a).

Non-standardized/Incomplete Nursing Workforce Databases. Many countries do not have detailed statistical databases on their workforces. Even in developed countries, databases describing nursing workforces have limitations. Fundamental problems include inconsistent use of terms, varying methodologies, and lack of standardization of all aspects of nursing. Data are incomplete and often inaccurate (International Council of Nurses [ICN], 1994; Prescott, 2002; World Health Organization [WHO], 2002). It should be noted that the International Council of Nurses represents RNs only, and not LPNs or RPNs (A. Osted, College of Registered Psychiatric Nurses of Manitoba, personal communication, September 15, 2003). These limitations impede the measurement of nursing supply and demand across states/provinces, specialties, and provider types (Buchan & Seccombe, 2002; United States General Accounting Office [USGAO], 2001). Diversity among local jurisdictions — inconsistent use of terms, varying methodologies, and lack of standardization — often makes it difficult to construct an accurate national database. Data collected in individual states in the United States (US), in countries of the United Kingdom (UK), and in the European Union (EU) have limited compatibility and comparability (Buchan, 1999, 2000a).



Non-standardized/Duplicated Interprovincial Data. In Canada, *The Supply and Distribution of Registered Nurses in Canada*, published by the Canadian Institute for Health Information (CIHI, 2002), is based on nurse registration forms submitted annually by provincial/territorial regulating authorities. Databases for licensed practical nurses (LPNs) and registered psychiatric nurses (RPNs) were released by CIHI in the fall of 2003. However, legislative differences among provinces/territories influence what data are collected. As well, the lack of permanent individual identifiers for nurses means that a certain amount of duplication may be unavoidable.

Non-standardized International Labour Market Data. Because data at the national level vary in detail and sophistication, information on the international labour market tends to be general rather than profession-specific. The International Labour Organization (ILO, 2003) has established 20 key indicators of the labour market and encourages countries to use them as a basis for collecting and storing data in order to facilitate international comparison (see Appendix B). Nonetheless, progress toward adequate international databases on specific professions is slow. Because of the resulting difficulty in comparing national data sets, little detailed research has been carried out on nursing supply and demand in the international labour market (Diallo, Zum, Gupta, & Dal Poz, 2003).

Problematic Classification of Nurses. Currently, researchers are discussing definitions and selecting indicators to guide collection of common data elements to be included in international health services databases (WHO, 2002). Some classifications are well established but problematic. For example, Diallo et al. (2003) note that the classification of nursing and midwifery crosscuts two major groups: nursing and midwifery professionals and nursing and midwifery *associate* professionals. Representatives of nursing regulatory bodies convene at the biennial meeting of the International Council of Nurses, but collection of international data to date has concentrated on practice issues, such as diagnostic categories (ICN, 2002b). The Organization for Economic Co-operation and Development (OECD) collects limited data on nurses in its member states (OECD, 2002).

3.1.2. Inconsistent Quality of the Data

Published Literature. Little research has been carried out on nursing supply and demand in the international labour market. There are some publications based on national databases that include selected demographic workforce information. There are numerous anecdotal and editorial articles and a few review articles on topics relevant to the nursing labour market, including nursing shortages, recruitment, and retention issues. A recent review article of the nursing labour market literature in the US and the UK found considerable variation in the results from the studies in the US and the single study from the UK. Using data from the UK, Antonazzo, Scott, Skatun, and Elliott (2003) emphasized the need for empirical research on many aspects of the nursing labour supply in order to support evidence-based policies.

Grey Literature. Most reports emphasized that nursing labour market data were fragmented, inconsistent, incomplete, and not comparable nationally or internationally. University-based research units accessed on the Internet focused on topics relevant to the local/national research community, including demographics, educational supply, migration, discrimination, and race relations. There was limited access



to information on the international nursing labour market in both English and French (Rhéaume, 2003). Government and international Web sites provided general information on labour markets.

3.1.3. Non-standard Use of the Term *Nurse*

The absence of a standard definition or even general consensus about the meaning of the term *nurse* makes it challenging to compare nursing workforces in various countries. The term *nurse* is not clearly defined in any international occupational classification scheme (ICN, 1994). A standard definition of *nurse* is fundamental to identifying who can be considered nursing personnel. The definition should clearly describe aspects such as knowledge, role, setting, and responsibility (ICN, 1994). However, there is currently no universal or singular meaning for *nurse*. Likewise, there is no unanimous definition of function, no collective standards for nursing education and practice, and no common understanding of a nurse's role (ICN, 1994). Even within countries, the meaning of *nurse* may vary (ICN, 1984, 1994).

In Canada, nurses include registered nurses, licensed/registered practical nurses, and registered psychiatric nurses. In Australia and the UK, enrolled or practice nurses exist, whose roles and functions appear similar to those of Canada's licensed/registered practical nurses, but may in fact differ in scope. In four Canadian provinces, registered psychiatric nurses are a distinct regulated professional category; they are also recognized in some other jurisdictions, such as Nunavut (A. Osted, College of Registered Psychiatric Nurses of Manitoba, personal communication, September 15, 2003). RPNs have differing professional designations in other countries such as the United Kingdom, Australia, New Zealand, and the Netherlands (A. Osted, College of Registered Psychiatric Nurses of Manitoba, personal communication, September 15, 2003).

In the ICN constitution, the definition of a *registered nurse* is: "A person who has completed a *nursing* education programme and is qualified and authorised in her [his] country to practise as a nurse" (ICN, 2001b, Constitution, Article 6). The following is ICN's (2003) definition of nursing, which encompasses the role of registered nurses only.

Nursing encompasses autonomous and collaborative care of individuals of all ages, families, groups and communities, sick or well and in all settings. Nursing includes the promotion of health, prevention of illness, and the care of ill, disabled and dying people. Advocacy, promotion of a safe environment, research, participation in shaping health policy and in patient and health systems management, and education are also key nursing roles.

The ILO classifies nursing personnel into three categories based on their level of general and professional education: professional nurses, auxiliary nurses, and nursing aides (ICN, 1994). There were no internationally agreed upon professional designation titles and definitions found for the Canadian designations *licensed/registered practical nurses* or *registered psychiatric nurses*, or for their international counterparts.



3.1.4. Nurses' Roles in Varying Health Care Systems

3.1.4.a. Overview of Education Programs

The nursing profession varies internationally in educational preparation, regulatory structures, practice patterns, and career trajectories. There are differences in basic nursing education, career structures, and titles for similar or overlapping roles (ICN, 2000).

RN Education. When discussing international markets, it is important to look at both the supply of nurses and the suppliers. Information on nurses' education is essential to understanding differences in their status and roles. In some countries, there is a single route to becoming a professional nurse. For example, all nurses from the Philippines complete a baccalaureate degree (Barcelo, 2002). Denmark, Ireland, New Zealand, and Spain also have single programs for qualifying as a nurse (ICN, 2000). In contrast, there are three avenues to becoming an RN in the US: a two-year associate degree, a three-year diploma, and a four-year degree (ICN, 2002d). The two-year diploma program was started in the 1950s in response to a nursing shortage. Its purpose was to teach technical nursing in order to increase the number of nurses in a shorter timeframe (Heinrich, 2001). In the UK, RNs receive either a nursing diploma or a degree (Finlayson, Dixon, Meadows, & Blair, 2002). Several other countries also have two levels of education for entry into nursing practice. These include some EU countries, Australia (Australian Labour Force Unit, 2000), the United Arab Emirates (F. Rifai, personal communication, March 25, 2003), and Asia (ICN, 2002b). In Taiwan, it takes three years to become an RN and four years to become a registered professional nurse (ICN, 2002c). The difference between these designations was not found in the literature.

LPN Education. In many countries, certain categories of nurses approximate that of LPN in Canada. In the US, LPNs complete a 12- to 18-month educational program. They must pass a national examination but are licensed by individual states with varying requirements (Heinrich, 2001). In Australia, enrolled nurses are educated to advanced certificate diploma level at colleges of technical or further education (Australian Labour Force Unit, 2000). As in Canada, they are supervised by RNs, have a specific scope of practice and are accountable for their own actions (Australian Labour Force Unit, 2000). In the UK, there are categories of nurse auxiliaries, nursing assistants, and health care assistants who receive vocational training, but are not registered with any regulatory body (Finlayson et al., 2002). In some Asian countries, there are practical nurses with varying levels of education. An enrolled nurse in Hong Kong requires two years of education; an LPN in Japan requires two or three years; and a technical nurse in Thailand requires two years of education (ICN, 2002c). Because little is known about the scope of practice of practical nurses in various countries, it is difficult to make international comparisons.

RPN Education. Registered psychiatric nurses in Canada are educated at one of four educational institutions, with educational programs ranging from a two-year diploma to a four-year baccalaureate degree (Clinton, du Boulay, Hazelton, & Horner, 2001; Psychiatric Nursing in Canada, 1998). Manitoba is currently the only province requiring graduates to attain a degree in psychiatric nursing (Psychiatric Nursing in Canada, 1998). In the UK, there are two routes to becoming a mental health nurse, depending on if one is already an RN or not. Students entering nursing must complete the 18 months of basic nursing education and then complete the further 18 months of specialist practice and education in mental health nursing.



This meets the practice requirements of the Nursing and Midwifery Council, formerly the United Kingdom Central Council for Nursing, Midwifery, and Health Visitors (Clinton et al., 2001). RNs may complete a one-year course, Bachelor of Science (Honours) Mental Health, offered by the Royal College of Nurses (Clinton et al., 2001). In Canada and other countries (e.g., the US), advanced diplomas and advanced degrees are available and a master's degree in psychiatric mental health nursing allows psychiatric nurses to assume roles as clinical nurse specialists and nurse practitioners (American Psychiatric Nurses Association, 2002; Clinton et al., 2001). Psychiatric nurses with doctoral degrees are found in various areas of employment such as education, research, and administration (American Psychiatric Nurses Association, 2002; Standards of Psychiatric Nurses of British Columbia, 1995).

3.1.4.b. *Entry into Practice and Regulatory Frameworks*

Nations vary in the way they regulate nurses' entry into practice. Examples of regulatory systems include the following.

- A single regulatory body, for example, the UK.
- A national/governmental body that determines basic competencies but has no regulatory authority, for example, Denmark, Ireland, and Taiwan (ICN, 2000).
- Provincial, state, or territorial regulatory bodies with a national body as a resource and coordinator of provincial/territorial regulatory bodies, for example, Canada.
- Regions acting as autonomous entities, with the government setting standards for only some of the jurisdictions, for example, Spain (ICN, 2000).

There are sometimes multiple regulating authorities in a country. Individual jurisdictions may implement standards differently, making mutual registration eligibility difficult. For example, in the US, there is a common national licensing examination. However, a nurse must be registered to practise in the state where he/she is employed and some states do not recognize the registration processes in certain other states. Australia has a system that is similar to that of Canada in which each of the six states and two territories has its own nursing regulatory authority and registry for RNs. Meeting national nursing competency standards is required for registration in all jurisdictions, but nurses must be registered or enrolled in the jurisdiction where they intend to practise (Australian Labour Force Unit, 2000; "Nursing Abroad", 2002). Australian laws provide recognition of registration across state boundaries. Thus, a nurse registered in one state may apply for registration in another state under mutual recognition ("Nursing Abroad", 2002), although documentation is necessary and requirements may vary by jurisdiction

3.1.4.c. *Variability in Nurses' Status and Roles*

Nurses' professional status and autonomy of practice vary internationally, in conjunction with their standards of education. In North American and some European countries, nurses have high standards of education and are "...considered by the public as trustworthy... [but nursing may have] a poor image as a career" (ICN, 2001c, p. 2). In countries such as Saudi Arabia, where nursing involves domestic work and



low levels of education, the profession has low status and an unfavourable image (Kearsey, 2002). Improvement of professional status is one reason that some countries, such as Iceland, have legally defined a baccalaureate degree as the minimum prerequisite for entry to practice, and that other countries, such as Germany, are preparing to do so (ICN, 2002b). Vietnam and Indonesia are just starting to offer a baccalaureate in nursing (Barcelo, 2002). The growing number of nurses prepared at the master's and doctoral level and the increase of nursing research both influence the status of nursing in some countries (ICN, 2002b).

Nurses' roles vary depending on the roles of other professionals. In countries where there are high ratios of physicians to nurses, the distribution of tasks between the two professions differs from that in countries where there are relatively few physicians. For example, in Pakistan, where doctors outnumber nurses by at least 10:1, doctors perform tasks that are commonly associated with nursing (Amarsi, 1998).

Because models of health care delivery and nursing roles differ among nations, it is difficult to interpret comparative statistics in a meaningful way about nurses, even where data exist. For example, the ICN (2000) listed ratios of nurses per capita for 10 countries for 1996. The numbers show considerable variation.

Ireland	1:101	Japan	1:206
New Zealand	1:102	Spain	1:208
Australia	1:105	UK	1:222
US	1:123	Taiwan	1:292
Canada	1:134	Denmark	1:730

However, the meaning of this variation is unclear because it is not known how nurses' roles and/or scopes of practice compare among these countries (ICN, 2000). Similarly, comparisons of numbers of acute care nursing staff per bed among Australia (1.4), France (0.5), Germany (0.6), and the UK (1.0) are useful only in the context of additional information about their relationships to members of other health care disciplines (Bloor & Maynard, 2003).



4. Labour Market Factors Affecting Nursing

This section focuses on major trends and cyclic processes affecting nursing work and how they are contextualized in their temporal and geographical settings. Three broad categories of change influence labour markets: long-term trends, cyclic changes, and contingent change. **Long-term trends** (linear changes) are processes that persist and/or intensify/decrease over time. Those affecting the nursing labour market include aging populations in developed countries, increasingly complex technologies, and globalization. Major **cyclic changes** affecting the nursing workforce are market cycles. **Contingent change** refers to events such as wars, political/economic crises, and natural disasters. The three types of change are only conceptually separate, as factors driving or emanating from one type of change can augment or diminish others. Moreover, complex social and cultural environments influence all three types of change.

4.1. Long-Term Trends

4.1.1. Demographic Changes

The current nursing shortage is complicated by demographic characteristics. During recent decades, population growth in the developed countries of the north and west, such as North America and Northern Europe, has slowed, ceased, or even reversed (United States Department of Health and Human Services [USDHHS], 2002). Populations in these countries are aging due to low birth rates and an increased life expectancy. In contrast, in much of the developing world, population growth and younger populations persist (Foote, 1996).

Currently, there is international consensus that more nursing services are required in community and acute care settings (Association National de la Fédération des Infirmières et Infirmiers Diplômés et Etudiantes [ANFIIDE], 2002; Australian Labour Force Unit, 1999, 2000; Buchan, 2000b; Commonwealth Department of Education, Training and Youth Affairs [Commonwealth DETYA], 2001; ICN, 2000, 2001c; Norrish & Rundall, 2001). The nature of nursing services needed depends on the profile of the population to be served. Accordingly, the most rapid growth area for nursing care will be in services for the elderly (Irwin, 2001; USDHHS, 2002). Because of the shift of mental health care to the community, psychiatric/mental health nurses in many countries (e.g., the UK) have been required to expand their services beyond mental health institutions (Clinton et al., 2001).

To some extent, the demographic profile of nursing workforces reflects that of the workforce as a whole (Buchan & Seccombe, 2000). Demographic changes affect the nursing labour market in two ways. First, they affect the patient population, including the amounts and types of care needed. Second, they affect the numbers and specialties of workers in the labour force.

The age of the nursing workforce varies internationally. In **1996**, the average age in the Australian nursing workforce was 40 years; this was younger than that of the nursing workforce in North American and European countries (Australian Labour Force Unit, 1999; Blanchard & Mandraud, 2002). For example, in **1998** in the UK, 20% of nurses and midwives were over the age of 50 years (Buchan, 1999); in **2001–2002** 58.28% of UK nurses and midwives were over 40 years of age (Nursing and Midwifery Council, 2002). The following statistics for **2002** show a marked difference in the average age of nurses in Asia compared to those in North America and Europe.



Asia	average range from 21 years in the Philippines to 35 years in Macau and Mongolia (ICN, 2002c).
Denmark	42.7 average (ICN, 2002d)
US	43.3 average (ICN, 2002d)
Norway	43.4 average (ICN, 2002d)
Canada	43.7 average (ICN, 2002d)
Iceland	44.0 average (ICN, 2002d)
Sweden	44.7 average (ICN, 2002d)
UK	average not reported (ICN, 2002d)

It is estimated that **over the next 10 years** the average age of nurses in the US will increase to 45.5 years; **by 2020**, more than 40% of the RN workforce is projected to be older than 50 years of age (Buerhaus, Staiger, & Auerbach, 2000). Despite the high average age of nurses in the labour forces of developed countries, there are fewer nurses in the higher age range (e.g., 50 to 65 years of age) than in the lower age range, possibly due to early retirement. Australia, the US, and the UK report increased retirement rates at 55 years of age (Buchan, 1999; Commonwealth DETYA, 2001).

The length of nurses' professional careers varies among countries. The average nursing career is 25 to 40 years in Asia, except in Japan, where the average is 9.1 years (ICN, 2002c). In the US, UK and Australia, nurses' professional careers are shorter because of higher proportions of mature nursing graduates, who spend less time in the workforce (Buchan, 1999; Buchan & Seccombe, 2000; Irwin, 2001) and, because of early retirement, particularly in the US (ICN, 2001a; Peterson, 1999; Valiga, 2002). In Germany, the workforce is relatively young because few nurses remain in it for more than three to four years after graduation (Irwin, 2001).

4.1.2. Technological Change

Technological change is heavily implicated in shaping the nursing labour market (ICN, 2001a). In the 1980s, the development of more efficient technologies led to less invasive procedures and the provision of more complex care in the community (ICN, 1994). Improved technology made the restructuring strategies of the 1990s feasible and ultimately led to a smaller and older nursing workforce. Today new technologies continue to facilitate a shift from hospital to primary care and are currently creating a greater need for specialist nurses (ANFIIDE, 2002; Irwin, 2001).

Technological change also affected individual career choices. Buerhaus et al. (2000) suggest that changes in technology increased the nursing shortage by providing young women with more career options. Once restricted to a few occupations traditionally viewed as *female*, such as nursing, young women now have the option of careers that are more prestigious than nursing, with higher starting salaries, and pay scales with more increments (James, 2001). The introduction of a nursing degree as a prerequisite to entry into practice — itself a response to the growing complexity of health care — may also have exacerbated the supply problem by prolonging the length of time required for nurses to graduate and enter the job market.



4.1.3. Globalization

Globalization has led to a greater interdependency and increasing mobility of labour among world regions. There are local nursing markets within countries, regional markets comprising countries within geographical regions, and finally the world market. Technological and sociological changes in the past two decades ensured that changes occurring in one region affected the remainder of the planet.

The impact of trade agreements on the labour market is just beginning. Important agreements include the following:

- North American Free Trade Agreement (NAFTA) — includes Canada, the United States, and Mexico;
- the European Union (EU) — comprised 15 countries as of 1995, with 10 more to join in 2004; and
- the Asia-Pacific Economic Cooperation (APEC) — comprises 21 countries.

These agreements create regional labour markets and have considerable influence on the movement of workers, including nurses. However, while trade agreements encourage the free movement of professional workers, barriers are formed by the various educational and licensing systems in individual countries. Many developed countries with similar nursing education and a common language recruit nurses from one another, including the US, the UK, Canada, and Australia, with the largest recruiter being the US (CNA, 2002). While there has been a long history of informal cooperation relevant to nurses and a growing emphasis on cross-border transferability of professional credentials, international credentialing in nursing is still in its infancy (Cutshall, 2000).

Where there is a demand for a certain type of worker, governments have collaborated to ease worker shortages. In some regions, there are mutual recognition agreements involving nurses who meet the licensing requirements of one country being eligible for recognition in another country. Examples of such agreements exist between Australia and New Zealand, among the Caribbean Islands, within North America, and within the EU (Cutshall, 2000). In addition, the UK has an agreement to recruit Chinese and Filipino nurses for stays of up to two years in the UK (BBC News Online, 2000a).

NAFTA enables Canadian registered nurses to work in the US because nurses are regulated with national examinations. Nonetheless, standards, procedures, and criteria vary from state to state (Cutshall, 2000). Licensed practical nurses and registered psychiatric nurses are not included in the agreement. In Europe, all EU citizens have free mobility within participating countries, and all EU countries recognize regulated professionals from other member states (Buchan, 2002). However, individual countries may require tests to bridge national differences in laws, ethics, and language (Cutshall, 2000). For example, EU nurses may be required to submit to English language testing and adaptation programs prior to employment in the UK (Buchan, 2000a). While there are various initiatives to upgrade nursing education, countries vary in their compliance to European Commission directives; there is little information on cross-border harmonization and transferability of professional credentials (Cutshall, 2000).



The WHO (Adams & Al-Gasseer, 2001) identified challenges confronting nursing and midwifery services resulting from trade agreements under the World Trade Organization. The increased mobility of nurses and midwives is expected to create shortages in less affluent geographical areas. It is not possible to track these migrations because of incomplete or incompatible data obtained from various sources in countries, leading to an inaccurate representation of migration into or out of a country (Buchan et al., 2003).

4.2. *Cyclic Change*

While the demand for nurses has been growing, the trend to a larger nursing workforce has not been continuous. Shortages, which result when the supply of nurses fails to keep pace with the demand, lead to increased wages. This encourages nurses to work more hours and also encourages more people to join the profession. When the demand for nurses is satisfied, organizations look for ways to cut back on nursing expenditures. A nursing surplus follows, with wages becoming less competitive and fewer people joining the nursing workforce (Meltz, 1988). This in turn triggers another shortage. The following overview of the nursing labour market over the last decade illustrates a complete market cycle.

4.2.1. Reduction in Demand

After expanding in the 1970s and 1980s, workforces contracted in the 1990s when health care systems encountered an increased demand for health services at the same time as cutbacks required them to contain costs (Buchan, 2002). In developed countries, the response was restructuring (Cutshall, 2000; ICN, 2000).

Frequently, restructuring meant increased emphasis on private enterprise; changes in payment systems; shortened hospital stays; higher proportions of acute care patients; expansion of community-based services, including home-care; and greater emphasis on cost control (Guevara & Mendias, 2002; Peterson, 1999). For example, the UK, Spain, and New Zealand moved towards deregulated, non-government, private mechanisms for health care, placing more responsibility for health on individuals and communities, and adopting a more market-oriented style (ICN, 1994, 2000). Organizational change included redesigning patient care delivery through altering decision-making structures and changing the skill mix of caregivers, including the replacement of professional workers with unlicensed personnel (Joint Commission on Accreditation of Healthcare Organizations [JCAHO], 2002; Norrish & Rundall, 2001).

Downsizing the workforce was an important cost-cutting strategy and in many countries the nursing workforce was the major target (Adams & Al-Gasseer, 2001). The restructuring of nursing services included staff reduction and redeployment, changes in full-time/part-time ratios, and changes in skill mix (Baumann et al., 2001; Blythe, Baumann, & Giovannetti, 2001). In the US, almost 60% of hospitals were restructured between 1991 and 1996 (Aiken, 2001). Approximately 90% of these hospitals reduced personnel, 25% laid off RNs and almost 50% of the restructured hospitals lost RNs through attrition. (Aiken, 2001).



4.2.2. Reduction in Supply

4.2.2.a. Low Recruitment

Low recruitment into nursing programs existed worldwide. In Switzerland, the numbers of new nursing graduates fell by 36% between 1991 and 1998 and there were fewer nursing school applicants (Weyermann, 2000). In the UK, the number of new graduates fell by about one-third between 1990 and 1999 (Finlayson et al., 2002). In Australia (Australian Labour Force Unit 1999, 2000), South Africa (Southern African Migration Project [SAMP], 2002) and Canada (Canadian Nurses Association [CNA], 2002) there were also decreases in nursing students.

There are two major reasons for the decrease in nursing school recruitment. First, in some countries, governments decided to reduce nursing student positions, and/or the number of nursing schools (ICN, 2000). In the US, in 1995, a prediction of an oversupply of nurses by 200,000 to 300,000 by the end of the 20th century led to a recommendation for closure of 10% to 25% of nursing schools (Malone & Marullo, 1997). In the UK, in 1995–1996, reports of an oversupply of nurses also led to cutbacks in the number of students accepted into nursing programs (BBC News Online, 2002).

The second reason is the perceived unattractiveness of the nursing profession. Some authors attributed the low rates of admission to nursing schools to the unfavourable image of nursing as a career (Australian Labour Force Unit, 1999; Commonwealth DETYA, 2003; ICN, 2001c; Irwin, 2001). Writers agreed that conditions in restructured and post-restructuring job environments were not good advertisements for the nursing profession (James, 2001; Peterson, 1999; Romig, 2001). In one US study, more than half of RNs and LPNs surveyed would not recommend nursing as a career to their children or friends (Heinrich, 2001). Almost a quarter of the nurses reported that they would actively discourage someone from going into nursing and almost half stated they would choose a different career if starting out again (Heinrich, 2001). Nursing was considered an unstable, unpredictable, high-risk career with a precarious future and limited opportunities for career growth (Nevidjon & Erikson, 2001). Women took advantage of increased career opportunities outside the health care sector, ones that included better pay and working conditions (James, 2001). Minorities and men continued to be underrepresented in nursing schools and the profession (JCAHO, 2002). For baccalaureate-educated RNs, the disparity of the relationship between the various levels of nursing education and the ensuing professional and financial rewards was a major disincentive (Aiken, 2001; Bednash, 2000; Heinrich, 2001; Reuters, 2000).

Ryten (CNA, 2002) reported that low recruitment had raised the average age of the Canadian nursing workforce. In the UK, the proportion of RNs less than 30 years of age fell by half between 1988 and 1998 (Buchan, 1999). Similarly, in the US, with fewer nurses under 30, the average age of nurses increased 4.5 years between 1983 and 1998, although the US workforce as a whole aged only two years (Buerhaus et al., 2000).

4.2.2.b. High Attrition

Nurses leave the profession sooner after graduation than in the past in order to find safer, more professionally rewarding careers with more convenient hours, better salaries, and working conditions that facilitate their professional life (American Federation of State, County, and Municipal Employees of Medicine [AFSCMEM], 2002).



In previous nursing shortages, nurses returned to the labour market when conditions improved. However, several factors are contributing to the increasing inadequacy of the numbers available in the nursing workforce. In many developed countries, baby boomers currently form a large percentage of the general labour force. This group will retire within the next 15 years (e.g., 78 million in the US by 2010), causing pressure on a nursing labour force faced with its own retirement problems — an increasing proportion of RNs are retiring early, many by age 56 (Buerhaus et al., 2000; ICN, 2001a; O'Brien-Pallas, Alksnis, & Wong, 2003; Sigma Theta Tau International, 2002). Also during this period, the number of women between 25 and 53 years of age (traditionally the core of the nursing workforce) is expected to remain unchanged, creating a further mismatch between future supply and demand (Heinrich, 2001). The retired baby boomers are expected to increase the demand for health care services by living longer and requiring management of chronic conditions and illnesses (American Nurses Association, 2002; Heinrich, 2001; ICN, 2002d; JCAHO, 2002).

4.2.2.c. *Workplace Quality and Stability*

Unstable funding of the health sector and inadequate planning, management, and deployment of human resources were detrimental to nursing work in many countries (ICN, 2000). Nurses' professional roles, work, and practice environments all deteriorated (Peterson, 1999). Common problems included the following: reduced job security; changes in career structures, job location, and job content; and a decrease in support services (Buchan, 2000b; Norrish & Rundall, 2001). Workload and work intensity increased and there was less continuity in the nursing team, partly as a result of the increased use of agency staff (Bosseley, 2001; Jenkins-Clarke & Carr-Hill, 2001). Less effective collaboration among health care providers, including between nurses and physicians, affected the quality of patient care (AACN, 2002a; Bosseley, 2001). Nurses were dissatisfied with both hospital management (Jenkins-Clarke & Carr-Hill, 2001) and lack of nursing leadership (Buchan, 1999). Their own jobs were less rewarding than before restructuring because they felt excluded from decision-making and unable to use their expertise (Bosseley, 2001). They did not feel valued or respected (Heinrich, 2001) and the frequent shortage of beds and equipment contributed to difficult working conditions (Baumann & Blythe, 2003). Nurses also expressed concerns for patient safety (Bosseley, 2001).

A study conducted between 1997 and 1999 in five countries in the Americas (Argentina, Brazil, Columbia, Mexico, and the US) indicates that regardless of differences in services, models, and driving forces for restructuring, nurses in each country identified similar issues. These included increased stress, heavier workloads, fewer staff, less direct patient care, more paper work, and greater demands for technical knowledge (Guevara & Mendias, 2002). A survey of 43,000 nurses from five countries (the US, Canada, England, Scotland, and Germany) reported nurses' belief that problems in work design and workforce management threatened the quality of patient care (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002).

As well as dissatisfaction with the work environment, wages were an important issue. The ICN (2001a) cited wage discrimination against women as a cause of low salaries for nurses. However, the fall in demand for nurses was the immediate cause of stagnant wages. In the US, nurses' wages remained flat



from 1993 to 1996 (ABC Action News, 2002; Aiken, 2001; Brewer, 1997). Nurses have a compressed pay scale, meaning that most of the wage growth for nurses occurs early in their careers and tapers off with time (USDHHS, 2002). The potential for increased earning decreases over time. Consequently, as individuals gain seniority, their wages compare less favourably with professionals in comparable jobs, providing a motive for transfer to other careers (USDHHS, 2002).

Given nurses' perceptions of their quality of worklife and their wages, attrition from the nursing workforce is to be expected. Heinrich (2001) reported that 50% of nurses in the US were considering leaving the profession in the next two years for reasons other than retirement. The actual US turnover rate for nurses increased from 12% in 1996, to 15% in 1999, to 26% in 2000 (Aiken, 2001). In Australia (Commonwealth DETYA, 2001; Queensland Nurses' Union, 2001) and throughout Europe, nurses are leaving the profession because of the working environment and inadequate salaries (Irwin, 2001; Peterson, 1999). Early retirement related to working conditions is common in many countries (ICN, 2001a), including the UK (Buchan, 1999; Buchan & Seccombe, 2002), the US (Jenkins-Clarke & Carr-Hill, 2001; Peterson, 1999; Valiga, 2002), and Australia (Commonwealth DETYA, 2001). Other reasons for leaving include personal disability and care-giving responsibilities for aging family members (ICN, 2000, 2001a). In addition, nurses often leave the profession soon after they qualify. In the UK, up to one-third of graduates from nursing programs never registered as nurses (Finlayson et al., 2002).

4.3. The New Millennium: Renewal of Demand

Low recruitment and high attrition during the 1990s meant that nursing workforces in many countries were under capacity by the beginning of the 21st century. Fewer nurses were caring for more patients than in the early 1990s and the numbers of vacancies had increased. While market forces alone would have caused a swing toward shortages, the linear (long-term) trends discussed earlier were implicated. With the reduction in supply, decision-makers began to realize the importance of workforce planning; governments, nursing organizations, and employers began to collect data to support their decisions.



5. The Current Nursing Shortage

5.1. *Prevalence of Shortage*

There is a surplus of nurses in many Asian countries. For example, in Taiwan 44% of licensed nurses were not employed in nursing (ICN, 2000, 2002a). In part, this surplus is due to employment patterns and to strategies to educate workers in occupations high in demand (ICN, 2000, 2002a).

A few western countries, including Spain, Finland (BBC News Online, 2001), and Germany, have also reported a surplus of nurses, but the accuracy of Germany's claim is questionable (ICN, 2002b). In contrast, most countries currently face nursing shortages, or will in the near future (ICN, 2000, 2002b). Shortages were reported in many places, including Australia, Canada, New Zealand, Ireland, the UK, the US, the Philippines, Western Europe, Australia, Africa, and South America (ICN, 2000; Sigma Theta Tau International, 2001).

In the US, while projections of shortages vary, they are uniformly high (Scanlon, 2001). US nursing unemployment rates are currently the lowest in a decade and vacancy levels, a common indicator of nursing shortages, are rising (Aiken, 2001; Heinrich, 2001). The nursing labour force participation rate is 80% or higher and there are few qualified unemployed nurses to be lured back to nursing (Aiken, 2001). Sigma Theta Tau International (2002) indicated that enrolments in entry-level baccalaureate programs in nursing increased in the fall of 2001 after five years of decline, perhaps as a result of increased recruitment efforts. However, they warned that students currently in the educational pipeline would not meet the projected demand of 1 million nurses in the US over the next 10 years (Sigma Theta Tau International, 2002).

Supply problems are common throughout Europe (Blanchard & Mandraud, 2002; Buchan, 2000b; Rhéaume, 2003; Weyermann, 2000). In the UK, a shortfall of 55,800 nurses is projected by 2004 (Buchan & Seccombe, 2002). Although the number of nurses in France has been increasing since 1971, there are currently between 10,000 and 20,000 vacant nursing positions (Blanchard & Mandraud, 2002). Belgium also has an imbalance in its nursing workforce and has experienced cyclical nursing shortages since the early 1970s because of high rates of attrition and large numbers of nurses working in part-time positions (De Pape, 2002; Orenbuch, 1974). Switzerland reported between 1,300 and 2,000 nursing vacancies (Weyermann, 2000). In Australia, the number of nurses continues to fall, with more nurses working part-time and the ratio of nurses to the population declining (Australian Institute of Health and Welfare, 2000).

There are shortages reported in developing countries such as Zambia and Chile (BBC News Online, 2000b); however, the reasons for the nursing shortages in these settings are different from those in developed countries. For example, in South Africa, the scarcity of nurses is partly a result of nurses being affected by HIV/AIDS and partly from nurses migrating to more developed northern countries and the Middle East (SAMP, 2002). Most industrialized countries are now or will be facing nursing shortages in the near future as a result of increased demands for health care, and in some countries a diminishing supply of nurses (ICN, 2002b).

There is a nursing shortage in the United Arab Emirates (UAE) because few Emiratis take up nursing (F. Rifai, personal communication, February 25, 2003). In fact, in many Middle Eastern countries, most nurses are international recruits (Royston, Mejia, & Pizurki, 1997). Saudi Arabia's population is expected



to double by 2025, which may result in a nursing shortage (Kearsey, 2002). Since many international nurses prefer to migrate to the UK, the US, and Canada rather than to the Middle East, recruitment there is challenging (F. Rifai, personal communication, March 25, 2003).

5.2. *The Nature of the Shortage*

While there is evidence of supply problems in the international nursing workforce, it is difficult to identify their precise nature. The practical result of the lack of accurate, consistent, current, and sensitive information is that it is impossible to describe the nature or extent of the nursing shortage or make accurate projections for the future (Buchan & Seccombe, 2002; USGAO, 2001). A variety of methods are used to describe current imbalances (WHO, 2002), with the result being that projections vary in terms of their severity and the time when their impact will be felt (Harte, 2000; ICN, 2001c).

Writers in some countries deny that there is a nursing shortage, arguing that high vacancy rates result from poor working conditions, not from a lack of qualified personnel (JCAHO, 2002; Kruger, 2002). There is some support for the argument that better working conditions would attract more nurses (Commonwealth DETYA, 2001; ICN, 2000, 2002a, 2002b). In Norway, vacancy rates are high because a lot of nurses work outside of nursing or work part-time (ICN, 2001a). Many would return to nursing if improvements in salary and working conditions were made (ICN, 2001a). In the US, a labour union suggested the shortage was due to nurses being unwilling to work in current conditions and that it would be resolved if working conditions were improved (AFSCMEM, 2002). The union pointed out that in 2000, an estimated 500,000 nurses in the US were not working in nursing jobs (AFSCMEM, 2002).

Some Belgian nursing associations also argue that the solution to the nursing shortage depends on improving salaries and working conditions (Rhéaume, 2003). In Belgium, the percentages of new graduates rose from 7.22% in 1992 to 13.72% in 1996, attributed mainly to salary increases between 1989 and 1993 (Leclercq & Leroy, 1998). However, the retention rate remained low (Rhéaume, 2003). Similarly, the National Health Service (NHS) in the UK has serious problems in recruiting and retaining nurses, even though almost half of the nurses who leave do practise nursing elsewhere (Finlayson et al., 2002).

In estimating supply and demand, a simple headcount is insufficient (Buchan & Seccombe, 2002). Factors that must be taken into account are the skill mix of nursing personnel, and differences among specialties and health care sectors including hospitals, home health care, nursing homes, and community care (Nevidjon & Erikson, 2001). The shortage may be more profound in some areas of nursing than in others. Australia has a shortage of nurses in specialty units such as emergency rooms and intensive care units (Australian Institute of Health and Welfare, 2000). In some countries, certain sectors of the nursing labour market have particularly severe shortages. This situation can be the result of pay differential. In Australia, all nurses were previously paid at the same scale regardless of where they worked. Now, certain sectors, such as long-term care, must struggle to attract nurses because the wages they offer are lower than in other sectors (Queensland Nurses' Union, 2001).



Aggregate national data do not reveal local or regional differences in labour markets (Prescott, 2002). In the US, there are greater shortages in certain states, and in rural and mountainous areas (USDHHS, 2002). The problem of servicing isolated areas is particularly severe in Australia where most of the population lives on the coastal fringe (Commonwealth DETYA, 2001). Nursing vacancies in less populated areas remain unfilled longer than in populous areas and there is a high demand for nurses with expertise across a range of clinical areas. In many of these rural and remote areas, nurses are the only health care providers (Commonwealth DETYA, 2001). Currently, these nurses are both aging and declining in number (Commonwealth DETYA, 2001). A similar problem is evident in rural areas and remote islands in the Pacific (Dewdney & Kerse, 2000).

In some cases, the shortage is a result of work arrangements, such as limited availability of full-time work (Australian Labour Force Unit, 1999, 2000; ICN, 2001a), and the overuse of casual and agency nurses (AFSCMEM, 2002; Cary, 2002; Davis, 2002; Commonwealth DETYA, 2001; Esser, 2002; Nursing and Midwifery Staffs Negotiating Council, 2002). The Belgium Nurses Association (Federation Nationale des Infirmières de Belgique) notes that there are sufficient nurses, but that many of them work in part-time positions (De Pape, 2002). In contrast to western countries, most nurses in Asia work full-time, ranging from 70% in Hong Kong, 95% in Korea, and 90% in the Philippines, to 100% in Macau (ICN, 2002c).

The performance of non-nursing tasks, i.e., those which could be delegated to others and which take nurses away from patient care, may falsely inflate the reported shortage of nurses in Canada and Germany (Lewis, 2002). If more auxiliary staff were employed, it is felt there would be sufficient nurses. A proper division of labour — one that respects and maximizes each professional's competencies — would also lead to a motivated and contented workforce (Lewis, 2002).

5.3. *Strategies to Address the Shortage*

Internationally, governments, employers, and nursing associations realize that there is a need to address workforce utilization. In most countries, more emphasis has been placed on recruitment than on retention. Policy makers in some countries have recently recognized that retention policies are also essential (AFSCMEM, 2002; Bednash, 2000; Buchan, 2002; Buchan & Seccombe, 2000). For example, in the UK, the Royal College of Nursing (RCN, 2002) argued that a healthy domestic nursing labour market required medium- and long-term strategies to improve workforce planning and practices and standards of human resource management.

5.3.1. Internal Recruitment

Faced with increasing difficulties in filling nursing vacancies, many countries have implemented recruitment strategies (Buchan, 2002; Irwin, 2001). Strategies common to a number of countries include increasing the supply of nurses, using high-profile recruitment campaigns, increasing the number of student placement positions in higher education, and providing more student scholarships and loans (ICN, 2001a; Sigma Theta Tau International, 2002; Victoria Auditor-General's Office, 2002).



Some countries have also implemented interventions to entice nurses to return to or remain in nursing (AACN, 2002b; Buchan, 2002; ICN, 2002b). These include funding refresher courses, delaying and phasing retirement, improving childcare, instituting flexible scheduling, and providing supplements in areas where the cost of living is high (Buchan, 2000b; Croix Rouge Française, 2001; ICN, 2001a). France encourages nurses to return to practice by providing government-sponsored refresher programs and assistance to find employment. Nursing student quotas have been increased, with 45,000 new nursing positions created (Barthes, 2002). More educational programs and continuing education programs have been developed, with facilitation of clinical placement for students (Croix Rouge Française, 2001).

Until recently, the shortage of qualified faculty — a result of retirement, resignation, and fewer nurses entering academia — has received little attention (AACN, 2002a; Peterson, 1999; Valiga, 2002). The shortage is exacerbated by higher educational standards that require educators with better credentials than in the past. In the US, while nursing programs and student enrolment allotments across the country have been increased, lack of clinical placements and too few teaching staff have limited admissions, increased class sizes, and delayed student placements (AACN, 2002b; Corcoran, 2002; Heinrich, 2001; Rothchild & Bowman, 2001).

5.3.2. Overseas Recruitment and Nurse Migration

Nurses migrate among various countries within regions such as the Caribbean, Latin America, the EU, North America, and South Africa, with the direction of migration usually being toward the country offering the greatest rewards. Intercontinental migration of medical and nursing personnel is frequently uni-directional from developing to developed nations, with nurse migration causing serious shortages in the poorest nations (Royston et al., 1997). The US acts a powerful magnet for many (Buchan et al., 2003; Royston et al., 1997). The old British Commonwealth also provides opportunities for nurse migrants to move to richer countries. The least affluent countries, such as Ghana, suffer severe shortages. Recently, numbers of migrants have increased (Buchan et al., 2003). Nurse migration will be considered in greater depth in a future report; here it is discussed as a recruitment strategy.

While the ICN upholds the rights of nurses to work where they wish, it opposes the active, aggressive recruitment of nurses, which harms both donor and recipient countries (ICN, 2002a). When recruiters target particular regions, they cause local shortages. Recruiting nurses into a dysfunctional health care system that has no effective human resource plan is a short-term solution to a long-term problem (Buchan et al., 2003). It delays the implementation of effective measures to improve recruitment, retention, and long-term human resource planning (ICN, 1999). A possible effect of migration on nursing labour markets in developed countries is deterioration of salary levels and working conditions. Foreign nurses may be willing to work for less pay and in poorer working conditions than nationals may because the conditions offered are still better than those in their home country (Irwin, 2001).

Despite potential harm to donor countries, most countries with nursing shortages encourage nurses to immigrate. In the US, international nurse migration has long been considered a strategy for supplementing the workforce (Davis, 2002). Even though foreign nurses make up only 1% to 3% of the RN workforce,



they often work in positions that are hard to fill with US-educated RNs (Davis, 2002). The UK vigorously recruits abroad. In the 1990s, the ratio of national to foreign nurses in the UK nursing registry was 1 in 10. In 2000, the ratio was 1 in 3 (Buchan, 2001). In 2001, registration by foreign nurses rose by 4.1% (Carvel, 2001), with the majority coming from non-EU countries such as Australia, the Philippines, South Africa, and Nigeria (Buchan, 2001; Irwin, 2001). Currently in the UK, international recruitment is an important strategy in achieving the NHS's target of an increase of 20,000 nurses by 2004 (Buchan, 2001). Within Europe, France has targeted Spain and Lebanon for nurse recruitment (Barthes, 2002), while Switzerland recruits about 500 nurses a year from Québec, Canada (Toupin, 2002).

The United Arab Emirates started depending on foreign nurses to supplement their meagre national nursing workforce in the 1960s and recruited mainly from the Philippines, India, and other Arab countries such as Egypt and Jordan (F. Rifai, personal communication, March 25, 2003). Incentives for these international recruits include higher salaries than in their home countries, yearly return airline tickets to their home locations, and shared single accommodations; some may have family accommodation if they are entitled to a married contract (F. Rifai, personal communication, March 25, 2003).

Countries that over-produce nurses may benefit from their migration in that remittances from migrants may have a significant impact on these countries' economies (Abella, 1997). The Philippine government traditionally encouraged migration, although recent concern about depleting the nursing workforce, particularly specialty nurses, has led to suggestions that the government take action to combat excessive migration (Barcelo, 2002; JCAHO, 2002).

Frequently, countries recruit nurses from one source and lose them to another. The UK loses many of its nurses to the US, Canada, and Ireland (Browne, 2001). Australia experiences both in- and out-migration, with a small positive balance (Australian Labour Force Unit, 2000).

Many underdeveloped countries do not produce enough nurses for their own needs. Scarce health workers from Namibia and Botswana leave local health care centres severely understaffed when they migrate to find better salaries abroad (SAMP, 2002). In Namibia, 30% of the nursing positions are vacant through migration, death, and resignation (SAMP, 2002). Health care systems in South Africa and the Caribbean are suffering because of excessive international recruitment by northern developed countries and Saudi Arabia (Browne, 2001). Central and Eastern European countries are concerned that the enlargement of the EU will enable their nurses to find jobs in more affluent Western European countries (Irwin, 2001).

5.3.3. Retention

Governments and nursing organizations recognize that the nursing profession and the nursing workplace must be made more attractive to promote retention. The suggested changes address the issues about which nurses have been expressing dissatisfaction for a decade. For example, attention would be given to improving nurses' professional status by building nursing leadership, including them in decision-making, and recognizing that their knowledge and expertise contribute to clinical care quality and patient outcomes. Attention would also be given to creating a practice environment that emphasized interdisciplinary collaboration, quality of care, and patient safety. Professional development and nursing education would also receive more attention and support (AACN,



2002a). Safe and healthy work environments (Baumann et al., 2001; JCAHO, 2002; Milburn, 2002; Nevidjon & Erikson, 2001; RCN, 2002) with modernized equipment (AFSCMEM, 2002) are considered essential. Inducement for individual nurses includes creating more full-time positions (ICN, 2001a); providing benefits and pensions for casual nurses (ICN, 2001a); better salaries and career ladders (Buchan & Seccombe, 2000); more flexible working hours (Buchan, 2002; Buchan & Seccombe, 2000); and greater opportunities for promotion and advancement (AFSCMEM, 2002; Buchan, 2000b; Ward, 2001). While more full-time positions are needed for nurses, it is recognized that some nurses are required in a casual capacity for vacation relief and to respond to contingent needs (S. Sholzberg-Gray, personal communication, September 16, 2003). Reverse attrition, which returns older experienced nurses to the workforce, could be facilitated by offering better pension schemes and pay arrangements for nurses at the top of their pay scales (Buchan, 1999).

Some governments are developing action plans for better deployment of the nursing workforce (ICN, 2001a). For example, the NHS in the UK has put increased emphasis on flexible working hours, actions to reduce violence, and increased funding for lifelong learning. There are also plans to introduce new pay and career structures for nurses (Buchan, 2002). However, few of the strategies discussed above have been implemented. And while there is a strong growing interest in the economic value of nursing in the US, most countries do not conduct cost effectiveness research (ICN, 2002b). Meanwhile, traditional strategies to remedy the shortage have had only limited success (Nevidjon & Erikson, 2001).



6. Implications for Canada

The Canadian Labour Market can best be understood in an international and historical context, taking global trends and market cycles into account. Most of the developed world shares labour problems, such as the nursing shortage, with Canada. These problems cannot be solved unilaterally.

A prerequisite of labour force planning is sound evidence. It is important to collect relevant, reliable, valid, and comparable data — regionally and nationally — to exchange information, and to guide the planning of health human resources for nurses nationally and internationally (Irwin, 2001; Robert Wood Foundation, 2002; USGAO, 2001; WHO, 2002). To obtain accurate data there needs to be cooperation by a variety of international organizations such as the International Labour Organization, the Organization for Economic Co-Operation and Development, the International Council of Nurses, and national statistical repositories.

Currently, a variety of international organizations collect data on the general labour market. These data are compiled by an ILO program based on *Key Indicators of the Labour Market* (see Appendix B; ILO, 2003). However, these databases are broad in nature because of the difficulties inherent in obtaining comparable international data for individual professions.

There have been a number of attempts to create classification systems that reflect nurses' clinical practice. The International Classification of Nursing Practice, sponsored by the ICN, is the most inclusive of these (CNA, 2000). Currently there are no comprehensive international databases for health human resources in general or nursing in particular. However, WHO intends to take the lead in formulating an international health human resources database and is currently preparing a template of data elements relevant to nursing that can be used internationally (Dobson, 2003).

Profession-specific databases for health science professions will be very useful to planners; therefore, it is important to encourage efforts to create them. For example, good evidence, based on sound statistical data, would help policy makers and planners to minimize the effects of economic cycles on the workforce. In the past, incorrect projections led to radical reductions in student enrolments, and low recruitment of new nurses led to a workforce skewed to older workers. The creation and use of formulas designed to predict future trends in nursing supply and demand would avoid this problem (Peterson, 1999). However, the feasibility of creating a standardized international database depends on international agreement on definitions of *nurse* and other relevant terms and concepts (Carlson, Cowart, & Speake, 1992; ICN, 1984, 1994; Robert Wood Foundation, 2002; WHO, 2002). Currently, CIHI is improving tracking of the nursing workforce in Canada. In the future, this organization could work with international partners to explore common indicators and data collection (Aiken, 2001; Buchan, 2000b; Buchan & Seccombe, 2002; Heinrich, 2001; Prescott, 2002). Ultimately, an organization should be established that is dedicated to coordinating the collection, management, and dissemination of health care labour force data.

This study provides evidence that the international nursing workforce is under capacity and indicates that overseas recruitment is not the answer to this problem. However, there is strong evidence that high-quality workplaces result in an adequate supply of nurses and high retention results. Recommendations for transforming the nursing workforce are numerous, and well disseminated. What has been lacking is the commitment at all levels to carry out these recommendations.



7. Recommendations

Specific recommendations from this report are as follows.

1. Collaborate nationally and internationally on nursing workforce planning and research. Workforce planning should include long-term, medium-term, and short-term projections and strategies.
2. Develop national and international plans to re-create nursing capacity through recruitment and retention of staff and through the maximization of human capital (e.g., assuring appropriate use of nursing and auxiliary staff). A commitment should be made at all levels to plan and implement recommendations for change.
3. Initiate international collaboration among governments and develop international/statistical data bases with the goal of collecting and organizing relevant, reliable, valid, comparable data on the nursing labour force. The goal would be to provide evidence to assist the international community and individual nations in formulating health care policy.
4. Create a Canadian database for health care workforce planning integrated at national, provincial, and organizational levels to serve national needs and to be compatible with the proposed international database.



REFERENCES

- Abella, M. (1997). *Sending Workers Abroad: A manual for low- and middle-income countries*. Geneva: International Labour Organization.
- ABC Action News. (2002). *Nursing shortage* [Electronic version]. ABC Action News: News Stories. ABC Action News Online. Retrieved May 30, 2002, from <http://abclocal.go.com/kfsn/news/health_080802_nursing.html>
- Adams, O., & Al-Gasseer, N. (2001). *Strengthening nursing and midwifery: Process and future directions - Summary Document, 1996-2000* [Electronic version]. Geneva: World Health Organization. Retrieved January 8, 2003, from <http://www.who.int/health-services-delivery/nursing/who_eip_osd_2001.5en/who_eip_osd_2001.5en.pdf>
- Aiken, L. H. (2001). *The hospital nurse workforce: Problems and prospects* [Electronic version]. Prepared for the Council on the Economic Impact of Health System Change. University of Pennsylvania. Retrieved January 6, 2003, from <<http://www.sihp.brandeis.edu/council/pubs/hospstruct/council-Dec-14-2001-Aiken-paper.pdf>>
- Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *JAMA*, 288(16), 1987-1993.
- Amarsi, Y. N. (1998). *Key stakeholders' perceptions of nursing human resource development in Pakistan: A situational analysis*. Unpublished doctoral dissertation, McMaster University, Hamilton, Canada.
- American Association of Colleges of Nursing. (2002a). AACN white paper: *Hallmarks of the professional nursing practice environment, January, 2002* [Electronic version]. Washington, DC: American Association of Colleges of Nursing Publications. Retrieved June 6, 2002, from <www.aacn.nche.edu/Publications/positions/hallmarks.htm>
- American Association of Colleges of Nursing. (2002b). *Strategies to reverse the new nursing shortage: A policy statement from tri-council members – The American Association of Colleges of Nursing (AACN), The American Nurses Association (ANA), The American Association of Nurse Executives (AONE), The National League for Nursing (NLN)* [Electronic version]. Washington, DC: American Association of Colleges of Nursing Publications. Retrieved June 6, 2002, from <<http://www.aacn.nche.edu/Publications/positions/tricshortage.htm>>
- American Federation of State, County and Municipal Employees of Medicine. (2002, September 24). *Comments of the American federation of state, county and municipal employees of medicine: Work environment for nurses and patient safety project* [Electronic version]. American Federation Employees: United Nurses of America. Retrieved January 9, 2003, from <<http://www.afscme.org/una/una0209.htm>>



- American Psychiatric Nurses Association. (2002). *FAQ's about psychiatric nursing* [Electronic version]. Arlington, Virginia: American Psychiatric Nurses Association. Retrieved April 29, 2002, from <<http://www.apna.org/faq/aboutnursing.html>>
- American Nurses Association. (2002). *A call to the nation: Nursing's agenda for the future: Nursing profession unveils strategic plan to ensure safe, quality patient care and address root causes of growing shortage – Nursing's agenda for the future calls for broad support from other stakeholders* [Electronic version]. Washington, DC: American Nurses Association. Retrieved January 9, 2003, from <<http://nursingworld.org/naf>>
- Antonazzo, E., Scott, A., Skatun, D., & Elliott, R. F. (2003). The labour market for nursing: A review of the labour supply literature [Electronic version]. *Health Economics* 12(6), 465-478. Retrieved July 3, 2003, from <<http://www3.interscience.wiley.com/cgi-bin/fulltext/97516195/PDFSTART>>
- Association National de la Fédération des Infirmières et Infirmiers Diplômés et Étudiantes (ANFIIDE). (2002). *Gérer la pénurie infirmière* [Electronic version]. Retrieved November 20, 2002 from <www.infirmiers.com/anfide/positions/penurie.php4>
- Australian Institute of Health and Welfare. (2000). *Media Release: Nursing numbers continue to fall* [Electronic version]. Canberra, Australia: Australian Institute of Health and Welfare. Retrieved February 6, 2003, from <<http://www.aihw.gov.au/media/2000/mr000901.html>>
- Australian Labour Force Unit. (1999). *Nursing labour force 1998* [Electronic version]. (Rep. No. AIHW, Cat No. HWL 14). Canberra, Australia: Australian Institute of Health and Welfare. Retrieved August 20, 2002, from <<http://www.aihw.gov.au/publications/health/nlf98/nlf98.pdf>>
- Australian Labour Force Unit. (2000). *Nursing labour force 1999: Preliminary report* [Electronic version]. (Rep. No. AIHW, Cat. No. HWL 18). Canberra, Australia: Australian Institute of Health and Welfare. Retrieved February 6, 2003, from <<http://www.aihw.gov.au/publications/health/nlf99pr/nlf99pr.pdf>>
- Barcelo, T. I. (2002). The internationalization of nursing education and licensing [Electronic version]. *PhilipiNurse: The Filipino Nurses Guide to Global Nursing*. Retrieved March 6, 2002, from <http://www.philipinurse.com/nurses_education.htm>
- Barthes, R. (2002). Recruter des infirmiers espagnols: pourquoi pas? *Information sur les ressources humaines à l'hôpital*, no. 22, 3-8.
- Baumann, A., O'Brien-Pallas, L., Armstrong-Stassen, M., Blythe, J., Bourbonnais, R., Cameron, S., et al.(2001). *Commitment and care: The benefits of a healthy workplace for nurses, their patients and the system*. Ottawa, Canada: Canadian Health Services Research Foundation.
- Baumann, A., & Blythe, J. (2003). Restructuring, reconsidering, reconstructing: Implications for health human resources. *International Journal of Public Administration*, 26(14), 1563-1581.



- BBC News Online. (2000a, September 7). *NHS drafts in Chinese nurses* [Electronic version]. BBC News Online: Health. Retrieved December 9, 2002, from <<http://news.bbc.co.uk/1/hi/health/914736.stm>>
- BBC News Online. (2000b, December 21). *UK 'fueling global nurse shortage'* [Electronic version]. BBC News Online: Health. Retrieved December 9, 2002, from <<http://news.bbc.co.uk/1/hi/health/1082120.stm>>
- BBC News Online. (2001, December 12). *Nurse recruitment 'on target'* [Electronic version]. BBC News Online: Health. Retrieved December 11, 2002, from <<http://news.bbc.co.uk/1/low/health/1705664.stm>>
- BBC News Online. (2002, August 1). *NI hospitals target foreign nurses* [Electronic version]. BBC News Online: Health. Retrieved December 9, 2002, from <http://news.bbc.co.uk/1/hi/northern_ireland/2164940.stm>
- Bednash, G. (2000). The decreasing supply of registered nurses: Inevitable future or call to action? [Electronic version]. *JAMA*, 283(22), 2985-2987. Retrieved June 6, 2002, from <<http://jama.ama-assn.org/cgi/reprint/283/22/2985.pdf>>
- Blanchard, S., & Mandraud, I. (2002). L'été et les 35 heures aggravent la situation des hôpitaux publics. *Le Monde*, 5 juillet. Paris.
- Bloor, K., & Maynard, A. (2003). *Planning human resources in health care: Towards an economic approach. An international comparative review* [Electronic version]. University of York. Ottawa, Canada: Canadian Health Services Research Foundation.
- Blythe, J., Baumann, A., & Giovannetti, P. (2001). Restructuring in Three Ontario Hospitals. Image: *Journal of Nursing Scholarship*, 33, 61-68.
- Bosseley, S. (2001, June 13). Acute wards: New burdens on senior nurses are bringing many of them to breaking point [Electronic version]. *Guardian Unlimited: SocietyGuardian.co.uk*. Retrieved June 5, 2002, from <<http://society.guardian.co.uk/NHSstaff/story/0,7991,505831,00.html>>
- Brewer, C. S. (1997). Through the looking glass: The labour market for registered nurses in the 21st century. *Nursing and Health Care Perspectives*, 18(5), 260-269.
- Browne, A. (2001, August 19). Nurses desert NHS for good life: Growing crisis for our hospitals as 5,500 a year join the brain drain in search of better pay [Electronic version]. *Guardian Unlimited: SocietyGuardian.co.uk*. Retrieved June 5, 2002, from <<http://society.guardian.co.uk/NHSstaff/comment/0,8005,539642,00.htm>>
- Buchan, J. (1999). The 'greying' of the United Kingdom's nursing workforce: Implications for employment policy and practice [Electronic version]. *Journal of Advanced Nursing*, 30(4), 818-826.
- Buchan, J. (2000a). *Happy landings?* [Electronic version]. Retrieved August, 4 2002, from <<http://www.hsj.co.uk/collections/happy.htm>>



- Buchan, J. (2000b). *Nursing labour markets in Europe: Planning for change*. (Rep. No. EUR/00/5019309/7). Edinburgh, Scotland: Queen Margaret University College.
- Buchan, J. (2001). The way we were... [Electronic version]. *Nursing Standard*, 15(47), 20-21.
- Buchan, J. (2002). *International recruitment of nurses: United Kingdom case study* [Electronic version]. Edinburgh, Scotland: Queen Margaret University College. Retrieved January 8, 2003, from <<http://www.rcn.org.uk/publications/pdf/irn-case-study-booklet.pdf>>
- Buchan, J., Parkin, T., & Sochalski, J. (2003). *International nurse mobility: Trends and policy implications* [Electronic version]. (Rep. No. WHO/EIP/OSD/2003.3). Geneva: World Health Organization. Retrieved July 16, 2003, from <http://www.icn.ch/Int_Nurse_mobility%20final.pdf>
- Buchan, J., & Seccombe, I. (2000). *Making up the difference: A review of the UK nursing labour market in 2000* [Electronic version]. Royal College of Nursing Labour Market Review, prepared by the Queen Margaret University College, Edinburgh. London: Royal College of Nursing. Retrieved December 12, 2002, from <<http://www.data.rcn.org.uk/pay/lmr2000/labreview.pdf>>
- Buchan, J., & Seccombe, I. (2002). *Behind the headlines: A review of the UK nursing labour market in 2001* [Electronic version]. Review prepared by Faculty of Social Science and Health Care. Queen Margaret University College, Edinburgh. London: Royal College of Nurses. Retrieved February 19, 2002, from <<http://www.epolitix.com/data/companies/images/Companies/Royal-College-of-Nursing/edit2.htm>>
- Buerhaus, P. I., Staiger, D. O., & Auerbach, D. I. (2000). Implication of an aging registered nurse workforce. *JAMA*, 283(22), 2948-2953.
- Canadian Institute for Health Information. (2002). *Registered nurse database: Supply and distribution of registered nurses in Canada, 2001*. (Rep. No. ISBN 1-55392-025-2). Ottawa, Canada: Canadian Institute for Health Information.
- Canadian Nurses Association. (2000). *Collecting data to reflect nursing impact*. Ottawa, Canada: Canadian Nurses Association.
- Canadian Nurses Association. (2002). *Planning for the future: Nursing human resource projections*. Ottawa, Canada: Canadian Nurses Association.
- Carlson, S., Cowart, M. E., & Speake, D. L. (1992, Fall). Causes of nursing shortage: A critical review of the theoretical and empirical literature. *Journal of Health and Human Resources Administration*, 224-250.
- Cary, A. (2002, August 7). CBC, health agencies remedying nursing shortage [Electronic version]. *Top mid-Columbia Stories*. Washington: Tri-City Herald. Retrieved December 9, 2002, from <<http://www.tri-cityherald.com/news/2002/0708/story2.html>>



- Carvel, J. (2001, May 4). Influx of foreign nurses helps NHS [Electronic version]. *Guardian Unlimited: SocietyGuardian.co.uk*. Retrieved June 3, 2002, from <<http://society.guardian.co.uk/NHSstaff/story/0,7991,485775,00.html>>
- Clinton, M., du Boulay, S., Hazelton, M., & Horner, B. (2001). *Mental health nursing education and health labour force: Literature review* [Electronic version]. National Review of Nursing Education. (ISBN 0 642 777243 6). (ABN: 51 452 193 160). Australian Government, Commonwealth Department of Education, Science and Training. Canberra, Australia: The Commonwealth of Australia. Retrieved November 19, 2002, from <http://www.dest.gov.au/highered/nursing/pubs/mental_health/2.htm#contents>
- Commonwealth Department of Education, Training and Youth Affairs (DETYA). (2001). Chapter 6: The nursing workforce in Australia [Electronic version]. In *National review of nursing education: Discussion paper*. (ABN 51 452 193 160). Canberra, Australia: The Commonwealth of Australia. Retrieved June 3, 2002, from <<http://www.dest.gov.au/highered/nursing/pubs/discussion/chap6.htm#nurse>>
- Commonwealth Department of Education, Training and Youth Affairs (DETYA). (2003). National review of nursing education: Exhibit 6 [Electronic version]. *National review of nursing education: Discussion paper*. (ABN 51 452 193 160). Canberra, Australia: The Commonwealth of Australia. Retrieved June 3, 2002, from <<http://www.dest.gov.au/highered/nursing/pubs/discussion/11>>
- Corcoran, R. D. (2002, May 13). A federal focus on the faculty shortage [Electronic version]. *National League for Nursing Update Newsletter & CEO Letter*, V(10). Retrieved June 5, 2002, from <<http://www.nln.org/newsletter/newsle110a.htm>>
- Croix Rouge Française. (2001). La Croix Rouge Française et la Général de Santé partenaire pour la formation du personnel infirmier. *Communiqué de Presse*, 4 octobre 2000.
- Cutshall, P. (2000). *Understanding cross boarder professional regulation: What nurses and other professionals need to know*. Geneva: International Council of Nurses.
- Davis, C. R. (Ed.). (2002). *Characteristics of foreign nurse graduates in the United States workforce 2000-2001: A survey by the Commission on Graduates of Foreign Nursing Schools (CGFNS)*. (Rep. No. ISBN 0-9630592-0-3). Philadelphia: Commission on Graduates of Foreign Nursing Schools.
- De Pape, N. (2002). *La balade européenne des infirmières*. Le soir en ligne, 27 avril.
- Dewdney, J., & Kerse, L. (2000). Special article: Health workforce planning: Developing expertise in Eastern Asia and the Pacific Islands [Electronic version]. *Human Resources for Health Development Journal*, 4(3), 146-157. Retrieved June 6, 2002, from <<http://www.moph.go.th/ops/hrdj/hrdj11/pdf11/Hwhp43.pdf>>



- Diallo, K., Zum, P., Gupta, N., & Dal Poz, M. (2003). Monitoring and evaluation of human resources for health: An international perspective [Electronic version]. *Human Resources for Health*, 1(3). Retrieved June 30, 2003, from <<http://www.human-resources-health.com/content/1/1/3>>
- Dobson, R. (2003). WHO to create international human resources database on health care [Electronic version]. *British Medical Journal*, 326(7397), 1004. Retrieved May 26, 2003, from <<http://bmj.com/cgi/content/full/326/7397/1004/a>>
- Esser, D. A. (2002). A summary of item 130 of the 2002-2004 Appropriation Act: A study of the funding needed and sources of funding to train nurses in Virginia [Electronic version]. Virginia Employment Commission. Retrieved January 9, 2003, from <<http://legis.state.va.us/jchc/1008vec.pdf>>
- Finlayson, B., Dixon, J., Meadows, S., & Blair, G. (2002). Education and debate: Mind the gap: The extent of the NHS nursing shortage. *British Medical Journal*, 325, 538-541.
- Foote, D. K. (1996). *Boom, bust, and echo: How to profit from the coming demographic shift*. Toronto, Canada: MacFarland Walter & Ross.
- Guevara, E. B., & Mendias, E. P. (2002). A comparative analysis of the changes in nursing practice related to health sector reform in five countries of the Americas. *Pan America Journal of Public Health*, 12(5), 347-353.
- Harte, C. (2000, December 11). Nursing exodus 'hits target hopes' [Electronic version]. *Guardian Unlimited: SocietyGuardian.co.uk*. Retrieved June 5, 2002, from <<http://society.guardian.co.uk/health/news/0,8363,409782,00.html>>
- Heinrich, J. (2001). *Nursing workforce: Multiple factors create nurse recruitment and retention problems* [Electronic version]. (Rep. No. GAO-01-912T). United States General Accounting Office [USGAO]: Testimony before the Subcommittee on Oversight of Government Management, Restructuring and the District of Columbia, Committee on Governmental Affairs, U.S. Senate. Washington, DC: USGAO. Retrieved December 19, 2002, from <<http://www.gao.gov/new.items/do1912t.pdf>>
- International Council of Nurses. (1984). *Regulation of nursing*. Geneva: International Council of Nurses.
- International Council of Nurses. (1994). *Planning human resources for nursing: Reference document*. Geneva: International Council of Nurses.
- International Council of Nurses. (1999). *Position statement: Nurse retention, transfer and migration* [Electronic version]. Geneva: International Council of Nurses. Retrieved December 18, 2002, from <<http://www.icn.ch/psretention.htm>>



- International Council of Nurses. (2000). *International Council of Nurses credentialing forum: Overview (updated and revised)* [Electronic version]. Geneva: International Council of Nurses. Retrieved December 9, 2002, from <<http://www.icn.ch/forumoverview.pdf>>
- International Council of Nurses. (2001a). *Overview paper prepared by the Canadian Nurses Association and the Canadian Federation of Nurses' Unions for the International Council of Nurses workforce forum, Ottawa, Canada* [Electronic version]. Geneva: International Council of Nurses. Retrieved December 9, 2002, from <<http://www.icn.ch/forum2001overview.pdf>>
- International Council of Nurses. (2001b). *International Council of Nurses Constitution (Amended in 2001). III. Membership: Article 6: Definition of nurse for membership purposes*. Retrieved July 11, 2003, from <http://www.icn.ch/const_membership.htm>
- International Council of Nurses. (2001c, May-July). Human resources supply and demand in the global market. *Socio-Economic Newsletter, International Council of Nurses (SEW Newsletter, No. 2)*. Geneva: International Council of Nurses. Retrieved July 14, 2002, from <<http://www.icn.ch/sewmay-july01.htm>>
- International Council of Nurses. (2002a, January-March). *Socio-Economic Welfare Newsletter, International Council of Nurses (SEW Newsletter, No. 1)*. Geneva: International Council of Nurses. Retrieved May 15, 2002, from <<http://www.icn.ch/sewjan-mar02.htm>>
- International Council of Nurses. (2002b). *ICN workforce forum: Overview paper* [Electronic version]. Prepared by the Icelandic Nurses Association for the International Council of Nurses Workforce Forum, Reykjavik, Iceland. Geneva: International Council of Nurses. Retrieved December 10, 2002, from <<http://www.icn.ch/forum2002overview.pdf>>
- International Council of Nurses. (2002c). Asia nursing workforce profile, 2002. Geneva: International Council of Nurses. Retrieved December 10, 2002, from <<http://www.icn.ch/sewDatasheet02asia.pdf>>
- International Council of Nurses. (2002d). Nursing workforce profile, 2002. Geneva: International Council of Nurses. Retrieved December 20, 2003, from <<http://www.icn.ch/SewDatasheet02.pdf>>
- International Council of Nurses. (2003). *The ICN definition of nursing* [Electronic version]. Retrieved July 11, 2003, from <<http://www.icn.ch/definition.htm>>
- International Labour Organization. (2003). *Key indicators of the labour market* [Electronic version]. Geneva: International Labour Organization. Retrieved July 2, 2003, from <<http://www.ilo.org/public/english/employment/strat/kilm/indicats.htm>>



- Irwin, J. (2001). Cross border healthcare: Migration patterns of nurses in the EU: The international mobility of nurses has become a contentious issue in the context of a growing and critical global shortage of nurses [Electronic version]. *Eurohealth*, 7(4), 13-15. Retrieved January 8, 2003, from <http://www.lse.ac.uk/Depts/lsehsc/papers/Eurohealth/Autumn2001_issue.pdf>
- James, M. S. (2001, May 18). Who'll care for us? Experts see shortage of nurses worsening [Electronic version]. *ABCnews.com: Health*. Retrieved May 30, 2002, from <http://abcnews.go.com/sections/living/DailyNews/nursing_shortage010518.html>
- Jenkins-Clarke, S., & Carr-Hill, R. (2001). Changes, challenges and choices for the primary healthcare workforce: Looking to the future. Health and Nursing Policy Issues. *Journal of Advanced Nursing*, 34(6), 842-849.
- Joint Commission on Accreditation of Healthcare Organizations. (2002). *Healthcare at the crossroads: Strategies for addressing the evolving nursing crisis* [Electronic version]. Washington, DC: Joint Commission on Accreditation of Healthcare Organizations. Retrieved January 6, 2003, from <<http://www.jcaho.org/about+us/public+policy+initiatives/health+care+at+the+crossroads.pdf>>
- Kearsey, K. (2002, November/December). The Saudi nursing experience. *Registered Nurse Journal*, 14(6), 19.
- Kruger, D. (2002, November). End of the NHS? [Electronic version]. *Prospect*. Retrieved December 19, 2002, from <<http://www.cps.org.uk/prospect.pdf>>
- Leclercq, A., & Leroy, X. (1998). *Offre et demande de travail infirmier et soignant en Communauté française et en Communauté germanophone de Belgique : projections jusqu'en 2000 et scénarios jusqu'en 2010*. Bruxelles: SESA, Retrieved November 20, 2002 from <<http://www.ulb.ac.be/project/tef/Leclercq199.html>>
- Lewis, S. J. (2002). Retaining nurses in the NHS: Extent of shortage will be known only when nurses spend all their time nursing [Electronic version]. (Letters). *British Medical Journal*, 32(7376), 1362.
- Malone, B. L., & Marullo, G. (1997). *Workforce trends among U.S. registered nurses* [Electronic version]. Prepared by the American Nurses for the International Council of Nurses ICN workforce forum, Stockholm, Sweden. American Nurses Association Policy Series. Retrieved June 12, 2001, from <<http://www.nursingworld.org/readroom/usworker.htm>>
- Meltz, N. (1988). *Sorry no care available due to nursing shortages*. Toronto, Canada: Registered Nurses Association of Ontario.
- Milburn, A. (2002, April 24). *Speech by Rt Hon Alan Milburn, MP, Secretary of State to the Royal College of Nursing Congress*. United Kingdom: Department of Health. Retrieved January 14, 2003, from <<http://www.doh.gov.uk/speeches/apr2002milburnrcn.htm>>



- Nevidjon, B., & Erikson, J. I. (2001). The nursing shortage: Solutions for the short and long term. *Online Journal of Issues in Nursing*, 6(1), Manuscript 4. Retrieved May 30, 2002, from <http://www.nursingworld.org/ojin/topic14/tpc14_4.htm>
- Norrish, B. R., & Rundall, T. G. (2001). Hospital restructuring and the work of registered nurses. *Milbank Quarterly*, 79(1), 55-79.
- Nursing Abroad: General Information. (2002). *Nursing in developed countries*. Nursing Abroad: Nurse Registration in Australia. NursingAbroad.net. Retrieved December 19, 2003, from <http://www.nursingabroad.net/general_information/work_in_Australia.html>
- Nursing and Midwifery Council. (2002, November). *Statistical analysis of the register: 1 April 2001 to 31 March 2002*. United Kingdom: The Nursing and Midwifery Council. Retrieved December 20, 2003, from <<http://www.nmc-uk.org/nmc/main/about/nmcStatistics.html>>
- Nursing and Midwifery Staffs Negotiating Council. (2002). *Staff side evidence to the review body for nursing staff, midwives and health visitors* [Electronic version]. London: Nursing and Midwifery Staffs Negotiating Council. Retrieved December 12, 2002, from <<http://www.rcn.org.uk/pdf/brol.pdf>>
- O'Brien-Pallas, L., Alksnis, C. & Wong, S. (2003). *Bringing the future into focus*. Ottawa: Canada: Canadian Institute for Health Information.
- Orenbuch, J. (1974). La situation du personnel soignant en Belgique. *Revue de l'Institut de Sociologie*, 2, 343-352.
- Organization of Economic Co-operation and Development. (2002). *International mobility of the highly skilled*. Paris: Organization of Economic Co-operation and Development.
- Peterson, C. (1999). Nursing supply and demand: Is the nursing profession facing a famine? *American Journal of Nursing*, 99, 57-59.
- Psychiatric Nursing in Canada. (1998). *Educational opportunities and educational institutions* [Electronic version]. Psychiatric Nursing in Canada. Retrieved April 3, 2002, from <<http://members.tripod.com/~psychnursing/education.html>>
- Prescott, P. (2002). The enigmatic nursing workforce. *Journal of Nursing Administration*, 30(2), 59-65.
- Queensland Nurses' Union. (2001, September 7). *Federal election 2001 - Defending wages and conditions* [Electronic version]. Queensland Nurses' Union in association with the Australian Nurses Federation (Qld Branch). Australia: Queensland Nurses' Union. Retrieved December 3, 2002, from <<http://www.qnu.org.au/wagesfeature.htm>>



- Reuters. (2000, June 13). Nurse shortage: More nurses needed as population ages [Electronic version]. *abcNEWS.com: Health*. Retrieved May 30, 2002, from <<http://abcnews.go.com/sections/living/DailyNews/Nurses000613.html>>
- Rhéaume, A. (2003). *Review and synthesis of nursing manpower issues within Francophone regions*. Unpublished manuscript, Hamilton, Canada: Nursing Effectiveness, Utilization and Outcomes Research Unit, McMaster University.
- Robert Wood Foundation. (2002). *The American nursing shortage: Strategies and recommendations for action* [Electronic version]. (Special Report). The Robert Wood Foundation. Retrieved December 9, 2002, from <<http://www.rwjf.org/newsEvents/nursingStrategies.jhtml>>
- Romig, C. (2001). The nursing shortage demands action now - state and federal legislation passed. *Health Policy Issues. AORN Journal*, 74(5), 733-738.
- Rothchild, M., & Bowman, N. (2001). *Recruitment of foreign nurse graduates* [Electronic version]. Retrieved January 13, 2003, from <<http://www.ucihs.uci.edu/cspsn/FNGMn.pdf>>
- Royal College of Nursing. (2002). *Working well: Internationally recruited nurses: Good practice guide - lines for healthcare employers and RCN negotiators* [Electronic version]. United Kingdom: Royal College of Nurses. Retrieved January 8, 2003, from <<http://www.rcn.org.uk/publications/pdf/irn-insides-001-788.pdf>>
- Royston, E., Mejia, A., & Pizurki, H. (1997). *Physician and nurse migration: Analysis and policy implications - Report of a WHO study*. Geneva: World Health Organization.
- Toupin, G. (2002). La Suisse maraude les infirmières Québécoises. *La Presse*, 21 juillet.
- Scanlon, W. J. (2001). *Nursing workforce: Recruitment and retention of nurses and nurse aides is a growing concern* [Electronic version]. (Rep. No. GAO-01-750T). United States General Accounting Office. Testimony before the Committee on Health, Education, Labor and Pensions, U.S. Senate. Washington, DC: USGAO. Retrieved January 7, 2003, from <<http://www.gao.gov/new.items/d01750t.pdf>>
- Sigma Theta Tau International. (2001, July). *Facts about the nursing shortage* [Electronic version]. Nurses for a Healthier Tomorrow Resource Info. Honor Society of Nursing, Sigma Theta Tau International. Retrieved December 9, 2002, from <http://www.nursesource.org/facts_shortage.html>
- Sigma Theta Tau International. (2002, Second Quarter). Enrollments rise at U.S. nursing schools. *Reflections on Nursing Leadership: Honor Society of Nursing, Sigma Theta Tau International*, 28(2), 17.
- Southern African Migration Project. (2002, December). *Southern African Migration Project Newsletter*, 9(12). Retrieved January 31, 2003, from <<http://www.queensu.ca/samp/news/2002/dec.htm>>



- Standards of Psychiatric Nurses of British Columbia. (1995). *Standards of psychiatric nurses of British Columbia* [Electronic version]. Coquitlam, BC: College of Registered Psychiatric Nurses of British Columbia. Retrieved May 8, 2002, from <<http://www.crpnb.bc.ca/>>
- United States General Accounting Office. (2001). *Nursing workforce: Emerging nurse shortages due to multiple factors* [Electronic version]. (Rep. No. GAO-01-944). United States General Accounting Office. Report to the Chairman, Subcommittee on Health, Committee on Ways and Means, House of Representatives. Washington, DC: USGAO. Retrieved December 19, 2002, from <<http://frwebgate.access.gpo.gov/cgi-bin/useftp.cgi?IPaddress=162.140.64.21&filename=d01944.pdf&directory=/diskb/wais/data/gao>>
- United States Department of Health and Human Services. (2002). *Projected supply, demand, and shortages of registered nurses: 2000-2020* [Electronic version]. United States Department of Health and Human Services (USDHHS), Health Resources and Services Administration, Bureau of Health Professions, National Center for Health Workforce Analysis. Washington, DC: USDHHS. Retrieved December 9, 2002, from <<ftp://ftp.hrsa/bhpr/nationalcenter/rnproject.pdf>>
- Valiga, T. M. (2002, April 11). *The nursing faculty shortage: National League for Nursing perspective* [Electronic version]. Presentation to the National Advisory Council on Nurse Education and Practice. New York: National League for Nursing. Retrieved June 5, 2002, from <<http://www.nln.org/slides/speech.htm>>
- Victoria Auditor-General's Office. (2002). *Nurse work force planning: Part 1 – Executive summary, background*. Australia: Victoria Auditor-General's Office. Retrieved December 19, 2002, from <http://www.audit.vic.gov.au/reports_par/agp7801.html>
- Ward, M. (2001, April 11). *Tackling the shortage of nurses in the NHS: Improved pay must be accompanied by better training and promotion opportunities* [Electronic version]. Retrieved January 7, 2003, from <<http://www.dur.ac.uk/economics.finance/PRESS/linked/Ward3.html>>
- Weyermann, U. (2000). Le problème est complexe, mais les solutions existent. *Krankenpflege-Soins Infirmiers*, 7, 65-67.
- World Health Organization. (2002). *WHO consultation on imbalances in the health workforce: Background*, March 10-12, Ottawa, Canada. World Health Organization, Department of Health Service Provision. Geneva: World Health Organization. Retrieved January 9, 2003, from <<http://www.who.int/health-services-delivery/imbalance>>



Appendix A. Main Search Methods

Key Words and Phrases

Note:

All key words and phrases were used to search for data for each of the three regulated nursing professions, registered nurses, licensed/registered practical nurses, and registered psychiatric nurses. As differing titles were found in the general search, they were then also used as search words. This list below is not a comprehensive list.

Asian nursing labour market and nursing workforce	Nursing early retirement
Caribbean nursing labour market and nursing workforce	Nursing employment
Definition of nurse	Nursing labour market
European Union nursing labour market and nursing workforce	Nursing labour trends
Foreign nurses	Nursing labour workforce analysis
Ghana nursing labour market and nursing workforce	Nursing manpower
Globalization of nurse labour market	Nursing manpower planning
Guest workers	Nursing registration
Health care restructuring	Nursing shortages
International	Nursing standards
International labour market	Nursing surpluses
International nursing labour market	Nursing workforce
International nursing labour market trends	Patterns in nursing employment
International nursing standards	Patterns of nursing employment
International trends in health care	Philippine nursing labour market and nursing workforce
Labour market	Registered nurse(s)
Labour market analysis	Registered psychiatric nurse(s)
Labour sectors	Role definitions
Licensed/registered practical nurse(s)	Scope of practice
Middle East nursing labour market and nursing workforce	South Africa nursing labour market and nursing workforce
Nurse attrition	Supply and demand in the international nursing labour market, nursing labour market, nursing workforce
Nurse job dissatisfaction	Trends of foreign nurses
Nurse licensing	United Kingdom nursing labour market and nursing workforce
Nurse recruitment	United States nursing labour market and nursing workforce
Nurse retention	Work environment and nursing
Nurse turnover	Working conditions
Nurses and quality of work life	



Sources

- Databases** Electronic Databases
Health Sciences Library
Mills Library at McMaster University
- Published Literature** CINAHL
HealthSTAR/Ovid
Journals at OVID
MEDLINE
- Grey Literature** Copernic Pro 2001 software (Search Tool)
Migration Dialogue <<http://migration.ucdavis.edu/>>
Migration News <http://migration.ucdavis.edu>
Migrant News (newsletter) <<http://migration.ucdavis.edu/mn/>>
- United Kingdom* BBC News Online <<http://news.bbc.co.uk>>
NHS Education for Scotland <<http://www.nes.scot.nhs.uk/nursing/>>
Nursing and Midwifery Council <<http://www.nmc-uk.org/cms/content/home/>>
The Government of the United Kingdom <www.ukonline.gov.uk>
The Guardian Online (UK Journal) <<http://society.guardian.co.uk/NHSstaff/>>
The Royal College of Nursing <www.rcn.org.uk>
The United Kingdom Home Office <www.ind.homeoffice.gov.uk/news>
United Kingdom Immigration and Nationality Directorate
<www.ind.homeoffice.gov.uk/>
United Kingdom, Department of Health <www.doh.gov.uk>
United Kingdom, National Health System <www.hsdirect.nhs.uk>
- Australia* Australian Government Department of Education, Science, and Training
<<http://www.dest.gov.au/highered/programmes/nursing/>>
Australian Government Information <www.fed.gov.au/KSP/>
Australian Institute of Health and Welfare
<<http://www.aihw.gov.au/media/2000/mr000901.html>>
Australian Bureau of Statistics <www.abs.gov.au>
- United States* Agency for Healthcare Research and Quality
<<http://www.ahrq.gov/news/press/pr2002/dilinkpr.htm>>
American Association of Colleges of Nurses <<http://www.aacn.nche.edu/>>
American Association of Colleges of Nursing
<<http://www.aacn.nche.edu/education/Resindex.htm>>
Journal of the American Medical Association <<http://jama.ama-assn.org/>>



National League for Nursing <<http://www.nln.org/newsletter/newsle110a.htm>>
 US Census Bureau <www.census.gov/>
 US Department of Health and Human Services <<http://www.hhs.gov/>>
 US Department of Health and Human Services, Bureau of Health Professionals
 <<http://www.bhpr.hrsa.gov/nursing>>
 US Department of Labour, Bureau of Labour Statistics
 <<http://www.bls.gov/opub/>>
 US General Accounting Office <www.senate.gov/ndpc/cvs/>
 US General Accounting Office. Nursing Workforce
 <<http://www.gao.gov/new.items/d01912t.pdf>>
 US General Accounting Office: Nursing Workforce
 <<http://www.gao.gov/new.items/>>
 US Nursing Associations <http://www.nurse.ca/Organizations/United_States/>
 US Nursing Workforce Analysis
 <<http://www.bhpr.hrsa.gov/healthworkforce/rnproject/>>
 US Projected Supply, Demand, and Shortages of Registered Nurses: 2000-2020
 <<ftp://ftp.hrsa.gov/bhpr/nationalcenter/rnproject.pdf>>
 USAABC News Online <<http://abcnews.go.com/>>

Ghana Ghana Home Page www.ghanaweb.com

International Centres and Organizations

International Labour Organization (ILO) <<http://www.ilo.org/>>
 International Labour Organization, Key Indicators of the Labour Market
 <<http://www.ilo.org/public/english/employment/strat/kilm/overview.htm>>
 International research centres online library
 <www.ercomer.org/wwwl/centers.html>
 Link for International Labour Statistics
 <<http://130.15.161.74/webdoc/web/labour.htm>>
 Organization for Economic Co-Operation and Development (OECD)
 <<http://www.oecd.org/EN/home/0,,EN-home-0-nodirectorate-no-no-no-0,FF.html>>
 Pan American Health Organization (PAHO) <<http://www.paho.org/>>
 Southern Africa Migration Project (SAMP) <<http://www.queensu.ca/samp/>>
 Southern Africa Migration Project Newsletter
 <<http://www.queensu.ca/samp/news/>>
 World Health Organization (WHO) <<http://www.who.int/en/>>

Nursing International Council of Nurses <www.icn.ch/>
 International Council of Nurses, Credentialing Forum
 <<http://www.icn.ch/forumoverview.pdf>>



- International Council of Nurses, Position Statement: Ethical Nurse Recruitment
<<http://www.icn.ch/psrecruit01.htm>>
- International Council of Nurses, Workforce Forum
<<http://icn.ch/forum2002overview.pdf>>
- International Council of Nurses, Workforce Forum
<www.icn.ch/forum2001overview.pdf>
- International Council of Nursing, Asian Nursing Workforce
<<http://www.icn.ch/SewDatasheet02Asia.pdf>>
- International Nursing Associations <www.nursingworld.org/rnindex/intl.htm>
- International Nursing Organizations
<http://www.nurse.ca/Organizations/_International/>
- International Nursing Website Links (All Nurses) <<http://www.allnurses.com/>>
- National Nursing Associations (NNA)
<<http://www.nursefriendly.com/nursing/natlink.htm>>
- Northern Nurses Association
<<http://www.nur.utexas.edu/0305/jkang/JKweb/Nurse/North.pdf>>
- NursingLinks International Organizations Page
<<http://www.nursingworld.org/rnindex/intl.htm>>
- Sigma Theta Tau International, Facts about the Nursing Shortage
<http://www.nursesource.org/facts_shortage.html>
- Standing Committee of Nurses in the European Union
<http://www.cpme.be/adopted/CPME_AD_Pre_240202_10_EN.pdf> link
to <www.pcn.yucom.be>
- General* Online Journal of Issues in Nursing <www.nursingworld.org/ojin/>
- Service Employees International Union
<<http://www.seiu.org/health/nurses/resources2/research.cfm#jama1002>>



Appendix B. Key Indicators of the Labour Market

The International Labour Organization has identified the following as key indicators of the labour market.

Educational attainment and illiteracy
Employment by sector
Employment-to-population ratio
Hourly compensation costs
Hours of work
Inactivity rate
Informal sector employment
Labour force participation
Labour market flows
Labour productivity and unit labour costs
Long-term employment
Manufacturing wage trends
Occupational wage and earnings indices
Part-time workers
Poverty and income distribution
Status in employment
Time-related underemployment
Unemployment
Unemployment by educational attainment
Youth employment



Appendix C. Acronyms

AACN	American Association of Colleges of Nursing
AFSCMEM	American Federation of State, County, and Municipal Employees of Medicine
AIHW	Australian Institute of Health and Welfare
ANA	American Nurses Association
ANFIIDE	Association National de la Fédération des Infirmières et Infirmiers Diplômés et Etudiantes
APEC	Asia Pacific Economic Cooperation
CGFNS	Commission on Graduates of Foreign Nursing Schools (US)
CIHI	Canadian Institute for Health Information
CNA	Canadian Nurses Association
DEST	Commonwealth Department of Education, Science and Training (Australia)
DETYA	Commonwealth Department of Education, Training and Youth Affairs (Australia)
EU	European Union
ICN	International Council of Nurses
ILO	International Labour Organization
JCAHO	Joint Commission on Accreditation of Healthcare Organizations (US)
LPN	Licensed Practical Nurse
NAFTA	North American Free Trade Agreement
NHS	National Health Service (UK)
NMC	Nursing and Midwifery Council (UK)
OECD	Organization of Economic Co-operation and Development
RCN	Royal College of Nursing (UK)
RN	Registered Nurse
RPN	Registered Psychiatric Nurse
SAMP	Southern African Migration Project
USDHHS	United States Department of Health and Human Services
USGAO	United States General Accounting Office
WHO	World Health Organization



The Research Team

The Nursing Effectiveness, Utilization and Outcomes Research Unit (NRU) has been engaged by The Nursing Sector Study Corporation to conduct research and prepare ensuing reports for Building the Future. The NRU is a network of researchers located in several provinces. The co-directors are as follows.

Linda O'Brien-Pallas, RN, PhD
Co-Principal Investigator, NRU
University of Toronto

Andrea Baumann, RN, PhD
Co-Principal Investigator, NRU
McMaster University

Collectively NRU investigators have established reputations for conducting high quality research on a variety of issues related to nursing and health human resources. Nationally and internationally, the team has established extensive contacts in education, management, research, practice and policy development.

AUTHORS' BIOGRAPHIES

Andrea Baumann, RN, PhD

Co-Principal Investigator, NRU, McMaster University

Dr. Baumann has authored or edited several books and chapters and has many peer-reviewed publications focusing on decision making and nursing. Her most recent work is on investment in human capital. She is the editor for the *Journal of Advanced Nursing for the Americas*. Dr. Baumann is known internationally for capacity building in educational health services. She is a member of several provincial and national research review committees and was a member of the interim governing council of the Canadian Institutes of Health Research.

Jennifer Blythe, MLS, PhD

**Senior Scientist, NRU, McMaster University
Associate Professor, School of Nursing, McMaster University**

Dr. Blythe's academic background includes degrees in anthropology, library and information science, and English language and literature. Dr. Blythe has authored book chapters, periodical articles and reports on human resources, women and work, nursing informatics and social change in Northern and Pacific communities. Her current research interests include innovation and change in health human resources and nurse migration. Recent committee work includes membership of the Hamilton Wentworth Training Board.

Camille Kolotylo, RN, PhD

Senior Research Associate, NRU, McMaster University

Dr. Kolotylo's previous research includes the study of chronic pain in women with migraine headache. Current interests include nursing human resources research. Camille has co-authored a book chapter and several peer-reviewed publications in the areas of pain and nursing care.

Jane Underwood, RN, MBA

Clinical Professor, School of Nursing, McMaster University

Professor Underwood's research foci include the quality of workplace for nurses, roles and skills of professionals in community health, and the use of evidence by public health and community practitioners. She has taken an active role on numerous committees such as the Provincial Public Health Research Education and Development (PHRED) Committee and the Mandatory Programs Measurement Group of the Ontario Ministry of Health and Long-Term Care (MOHLTC), and has been involved in provincial initiatives such as the development of the Healthy Babies, Healthy Children Program. Professor Underwood had published in the area of public health nursing and health promotion and currently is a reviewer for the *Canadian Journal of Public Health*.

