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***The Nursing Labor Market in Canada:  
Review of the literature***

***Report presented to the Invitational  
Roundtable of Stakeholders in Nursing***

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**Presented to**

**The Invitational Roundtable of Stakeholders in Nursing**

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## **Executive summary**

### **Mandate and objectives**

This project consisted in the production of a review of the literature published after 1985 on the nursing labour market in Canada. The topics to be covered included: the dynamics of the market, the factors influencing supply and demand, the impact of current health care system changes. This review is expected to identify knowledge gaps and major issues that need to be further investigated, in order to perform a valid and complete analysis of nursing labour in the health care system.

### **Methodology**

In this literature search, the nursing workforce was defined as including registered nurses (RNs), licensed practical nurses (LPNs) and registered psychiatric nurses (RPNs). Two types of literature were covered: the published scientific and professional literature and the unpublished literature produced by professional associations and governments, such as briefs, reports, and studies. Bibliographical databases such as MEDLINE, CINAHL, Currents Contents, as well as ERIC were exploited, and to track the non-published literature, the collaboration of the stakeholders involved in the project was sought (and obtained).

### **Current changes in the health care system.**

As it is the case for other health personnel, the nursing workforce faces strong pressures to adapt to current changes occurring in the health care system. Reforms have stressed:

- the need for more integration and more co-ordination of care
- the need to reduce the number of hospital beds
- the search for more efficiency, including in the use of nursing staff
- the development of ambulatory care and home care
- the need for new methods of payment for physicians
- A better control of the number of physicians.

Overall, current health care transformations have an impact on the organisation of health care delivery and on the role of different providers, and are thus likely to have a significant impact on the role and development of the nursing labour market.

### **Overview of the workforce in nursing**

There has been a decline in the nursing workforce since the beginning of 1990's. The number of RNs diminished by 2,8 % between 1992 and 1998. The decrease was three times that figure for LPNs (8,4 % between 1992 and 1997). Most provinces went from an oversupply to an under-supply situation for RN's, and some provinces are also short of LP's. The perception of "crisis" in the nursing labour market is not new. Critical situations were already evoked at the beginning of the 1980's. What is new is the large drop in new Canadian-educated graduates and the reduction of those entering in practice. This trend is likely to continue since admissions in training programs decreased by more than 35 % during the last ten years.

Only half of the nursing personnel are working on a full-time basis, and casual work is now the only way to entry in the nursing labour market for a majority of graduates. Nursing is thus seen as a career with limited opportunities, with a precarious future.

The large scale layoffs of nurses and a deteriorating working environment are said to have encouraged many RNs to seek work in other provinces or other countries, even to quit nursing altogether. More than 10 % of the RN graduated in 1995 were practising in USA in 1999. Lack of attractiveness for nursing and reduction in education program financing are also seen as threatening the future supply of RN. Recent studies, which estimated the future supply and demand for RNs, showed that, even if optimistic hypothesis are made, the supply of nurses will grow at a slower rate than the demand. There is no evidence in the literature which type of models of practice and team mix produce better outcomes and reduce cost.

### **Recruitment and retention**

Recruitment and retention have been longstanding challenges to the nursing profession. Many texts refer to the roots of the problem being in the changing practice environment, particularly touched by the process of downsizing and its negative

consequences on the profession's attractiveness, and on the perceptions of the working conditions. Other authors mention the low social value given to nursing, as illustrated by the absence of career plans, and of in-service training, as a contributing factor to making recruitment difficult. Many occupations are perceived to offer better career prospects, with higher financial rewards, respect, authority in decision-making, and leadership opportunities. Some say that the perceived growing gap between the nursing discipline objectives and its clinical practice have also served to make the nursing profession less attractive to career oriented, qualified students.

Structural changes to health care delivery are seen as having an impact on the nursing personnel quality of life and job satisfaction, for example, by creating a trend of occupying two or more jobs. Research on the perception of RNs of their quality of working life, reports poor morale and widespread job dissatisfaction. RNs dissatisfaction with the work organisation in health care institutions correlates strongly with low organisational commitment, autonomy, leadership and opportunities for advancement. On specialised units, job satisfaction also correlates with autonomy, and appropriate workload. A heavy workload, the perceived inability to ensure quality care to patients, burn-out, a perceived lack of managerial support, lack of control over one's work, inflexible work schedules, a growing sense of powerlessness, and poor salaries are also sources of dissatisfaction. High levels of stress, in a context where little professional support or clinical aid is available, and lack of support or mentoring of new recruits may create retention problems. Casual work is perceived as contributing to making retention difficult.

LPNs have their own recruitment and retention difficulties. In Quebec, there is a reduction of new students, fewer job opportunities, and greater utilisation of unlicensed personnel, for example to provide home care. LPNs say there are administrative obstacles to the performance of procedures that they are legally entitled to perform. Legal issues relating to the delegation tasks and the need to work under the supervision of RNs, limit their autonomy.

Among the strategies proposed to improve recruitment and retention, the following are frequently mentioned:

- Better evaluation of staffing needs; reduction of the number of casual workers.
- Better integration of new graduates on the work site.

- The improvement of working conditions, including the implementation of family friendly policies, and better compensation and benefits.
- The review of professional legislation in the light of the new roles of RNs and LPNs in the health care system, particularly with a view to ensuring that they have more professional autonomy. Initiatives in that direction have been identified in British-Columbia, Alberta, Ontario.
- Support for professional advancement, better career plans.
- The development of continuing education to make the profession more attractive to recruits and to facilitate the return of those who have left the profession associations.

It is suggested that governments can play a more decisive role in avoiding labour market imbalances, with a comprehensive planning, political commitment, coherent and integrated policies, support for skills development, deployment and distribution of staff within the health system. This must be done quickly, because as time passes, the capacity to correct the present situation diminishes, as problems become more difficult to tackle. Also, there is a time lag between the interventions and the changes they are expected to produce.

### **Nursing responses to current challenges**

The health care system transformation stressed the necessity for nursing to use more and health care resources more efficiently. That could be achieved, among other things, by adapting the content of training programs and adopting different nursing models of practice. The training programs vary, depending on the province, and, consequently so do the organisation of nursing.

The stated objectives pursued by university training advocates to increase autonomy and capabilities of nurses to work in different settings and to assume greater accountability for the care they provide. Many authors argue that university training is now required to meet the needs of the health care system. Continuing education activities, that can take different forms, is perceived by many authors as being essential for the nursing work force to cope with future needs.

Nursing models of practice are evoked to induce new approaches on health care delivery but their impact on outcomes and efficiency remains to be assessed.

## **Conclusion**

The decrease in the number of RNs and LPNs since the beginning of the 1990's stresses the question of the capacity of the health care system to recruit and maintain a sufficient nursing workforce in regards of health care needs.

Nursing practices are in search of new approaches or models. The planning of nursing resources cannot be done independently of the type of models of practice that will be implemented, as they constitute different sets of practices and require different types and levels of staffing. But there seems to be important knowledge gaps in the assessment of the different nursing models and about their potential to contribute to the achievement of health care system objectives, such as efficiency, effectiveness and quality of care. They also need to be assessed in the light of the role assigned to other providers of care.

As it is the case for other categories of health personnel, the capabilities of nursing labour to respond to current challenges are largely determined by the content of basic training programs and by the availability of resources to update knowledge, skills and competencies afterwards. Any planning exercise of the nursing workforce must consider the type of training which is required according to the role nurses and LPN are expected to play in the health care system. Again, more knowledge about the different models of practices and their organisational consequences is needed in order to assess their impact on current training programs and on continuing education needs.

All these issues are interdependent with recruitment and retention issues. Recruitment and retention cannot be addressed without considering the different models of practices and the role of the different categories of nursing personnel and as well as their role in relation with other providers of care.



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## **List of Acronyms**

AARN- Alberta Association of Registered Nurses  
AHQ- Association des hôpitaux du Québec  
AIINB- Association des infirmières et infirmiers du Nouveau-Brunswick  
ANBRNA- Association of New Brunswick Registered Nurses Assistants  
ANEA- Alberta Nursing Education Administrators  
ANEMT- Association of Nurses Executives of Metropolitan Toronto  
ARNN- Association of Registered Nurses of Newfoundland  
BCNU- British Columbia Nurses Union  
CAPN- Canadian Association of Practical Nurses  
CAPNN- Canadian Association of Practical Nurses & Nursing Assistants  
CAUSN- Canadian Association of University Schools of Nursing  
CEGEP- Collège d'enseignement général et professionnel  
CEMOSI- Comité d'étude sur la main d'œuvre en soins infirmiers  
CHA- Canadian Hospitals Association (now Canadian Healthcare Association)  
CNA- Canadian Nurses Association  
CFNU- Canadian Federation of Nurses Union  
CNO- College of Nurses of Ontario  
CNS- Clinical Nurse Specialist  
CIHI- Canadian Institute for Health Information  
CPNA- Canadian Practical Nurses Association  
CTIIA- Comité sur le travail des infirmières et infirmiers auxiliaires  
CUP- Commission des universités sur les programmes  
CUPE- Canadian Union of Public Employees  
HEU- Hospital Employees' Union  
HRDC- Human Resources Development Canada  
HHRPD- Health Human Resources Planning Division  
IHHRPD- Integrated Health Human Resources Program Development  
LNA- Licensed Nurse Assistant  
LPN- Licensed Practical Nurse

MEQ- Ministère de l'Éducation du Québec  
MET- Manitoba Education and Training  
MNPAC- Manitoba Nursing Professions Advisory Council  
MNU- Manitoba Nurses Union  
MSSS- Ministère de la Santé et des Services sociaux du Québec  
NA- Nursing Assistant  
NAFT- A North America Free Trade  
NNCP- National Nurse Competency Project  
NP- Nurse Practitioner  
NRAC- Nursing Resources Advisory Committee  
NSDH- Nova Scotia Division of Health  
OIIAQ- Ordre des infirmières et infirmiers auxiliaires du Québec  
OIIQ- Ordre des infirmières et infirmiers du Québec  
ONTF- Ontario Nursing Task Force  
PN- Practical Nurse  
RN- Registered Nurse  
RNA- Registered Nurse Assistant  
RNABC- Registered Nurses Association of British Columbia  
RNANS- Registered Nurses Association of Nova Scotia  
RPN- Registered Psychiatric Nurse  
RPNAO- Registered Practical Nurses Association of Ontario  
RPNIA- Registered Psychiatric Nurses' Interprovincial Alliance  
WHO- World Health Organization

## **1-Introduction**

### **1.1-Mandate and objectives**

This paper consists is a review of the literature on the nursing labour market in Canada, for the period of 1985 and onwards. The objective was to collect the relevant literature, both professional and scientific, and to produce a synthesis for the benefit of the stakeholders involved in the field of nursing. Here, the nursing labour market was defined as including the following occupational groups: Registered Nurses (RNs), Registered Psychiatric Nurses (RPNs), and Licensed Practical Nurses (LPNs). In this report, we use the expression *LPN* to refer to the following professional titles: Licensed Nursing Assistants (LNA), Nursing Assistants (NA), Practical Nurses (PN), as well as Registered Practical Nurses (RPN). It was expected that the review would cover the following topics: the dynamics of the nursing labour market, the factors influencing supply and demand, the impact of current health care system transformations on the role of nurses. The mandate also included the review of current available empirical data on the nursing workforce<sup>1</sup>. This review is also expected to identify knowledge gaps and major issues that need to be further investigated, in order to perform a valid and complete analysis of the role of nursing labour in the health care system. This work represents the first stage of an eventual sector and occupational study of the nursing labour market in Canada.

### **1.2-Outline of the report**

In the introduction we briefly discuss the mandate and the objectives corresponding to it, the planning perspective and the methodology to achieve them. In the first section, we identify the main changes that have taken place in the health care system, which form the context within which the nursing labour market has evolved in the last 15 years. In the second section, we describe the supply and demand dimensions of the nursing labour market. The third section reviews the specific issues of recruitment and retention, which are perceived as central by most actors. According to many sources reviewed, problems at that level are related to working conditions and to the status of the

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<sup>1</sup> For that purpose, support was provided by the Sectoral and Occupational Studies Division, at Human Resources Development Canada. MM. Paul Stoll and Luc Rivard provided the research team with the most recent data available.

nursing profession in the health care system. In section four, we present the literature on the potential of education programs, and of a variety of nursing practice models; to prepare the nursing workforce to adapt to the new context created by current changes. We discuss different solutions proposed in the literature to increase the fit between the level and competencies of nurses and current and future environment of the health care system. The last section synthesises the major lessons learned from this literature review.

### **1.3-The role of human resources and planning in health situation**

The need for a more systematic management and planning of human resource in health has been recognised by many authors (Dussault, 1999; Martineau & Martinez, 1999; Hall, 1988; Bankowski & Fülöp, 1987; Hsu & Lovelace, 1986). According to Martineau & Martinez (1999), the planning of the workforce in health should take in to account the dimensions of staffing (number, mix, deployment of personnel), of the level and type of education of the management of performance and of working conditions, as they relate to the achievement of objectives of the health care system. These are usually expressed in terms of achieving better equity of access to care, of producing services which are effective, in an efficient manner, of responding to the expectations of consumers (Box 1). Such a systematic approach does not exclude the use of an interactive and recursive model of planning where different stakeholders have a voice in the development of the human resources analysis. Indeed, the recognition of the importance of the involvement of major stakeholders in the planning process has been stressed by many authors (Dussault 1999; Bryson & Crosby, 1992; Benveniste, 1989; Bryson, 1988). In this project, we produced a preliminary review of the nursing labour market, based on the literature, in collaboration with the major stakeholders active in the development of the role of the nursing workforce in the production of health care services.



### Box 1- The objectives of the health care system

Equity refers to fairness, a notion that is not easily defined. Vertical equity refers to the distribution of health care among people of different levels of income (care should be available in function of need, not income), and horizontal equity to the distribution among people with the same health condition or need (equal need should entail equal treatment). As these definitions imply, access to services will play a determinant role in producing equity in the delivery of care.

Effectiveness refers to producing some expected or predicted results. It corresponds to the capacity of health care interventions to modify the health status, in the case of curative or rehabilitation procedures, or to maintain or improve it, in the case of promotion or prevention services. Theoretical effectiveness refers to the potential of an intervention to respond to a need, as measured in controlled conditions: it is also called “potential efficacy”. Utilisation effectiveness refers to the effectiveness of the intervention when applied to real users (also called “real efficacy”), and population effectiveness, to its effectiveness in the target population.

Efficiency is relative: an intervention is more efficient than another one in producing the same output. There is a large consensus in distinguishing between “technical” efficiency and “allocation” efficiency. The first notion refers to productivity or to the best use of resources so that the maximum output can be produced from given inputs. The second is concerned with choosing the interventions that produce the greatest benefits to health, at a given cost.

Satisfaction of consumers can refer to two things: first to “revealed preferences”, that is to real consumption, assumed to be the expression of what consumers want, and second to what consumers say they want (“stated preferences”). In health, there are so many economic, social, cultural, organisational potential obstacles to the expression of consumers’ real preferences, which revealed preferences say little about what consumers really want. Also, consumers have only imperfect information about their needs and about the options of services available, and most of their utilisation of services is on the recommendation of providers. Indeed, the utilisation of services probably reflects more the preferences of providers, than of users.

**Source: (Dussault, 1999).**

## 1.4-Methodology

We have reviewed the available published literature on the nursing labour market in Canada, published after 1985<sup>2</sup>. For the purposes of this literature search, the nursing workforce was defined as including the following categories of personnel: university trained nurses, RNs, and LPNs. It should be observed that the definition of occupational categories might vary from province to province, as well as their legal status. In some jurisdictions, they may have only their title legally recognised, whereas in others they control a field of practice (see Box 2). Two types of literature were covered: the published scientific and professional literature and the unpublished literature produced by professional associations and governments, such as briefs, reports, unpublished

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<sup>2</sup> Documents produced earlier and deemed important for the understanding of the current situation were also included.

studies. To identify the published literature, we used bibliographical databases such as MEDLINE, CINAHL, Currents Contents, and ERIC. To track the non-published literature, the collaboration of the professional associations involved in the project was sought. Approximately 550 documents were identified, of which 150 were analysed in greater detail<sup>3</sup>. Those tended to be more recent and to incorporate much of the information included in the others. At different times, a list of the available material was produced, to enable the stakeholders to complete it with literature not known to the researchers. This collaboration with the stakeholders will also include a discussion of the present report, before a final version is produced.

#### **Box 2- The regulation of nursing in Canada**

##### **LPNs**

Title: Alberta, British Columbia, Manitoba, New Brunswick, Nova Scotia, Northern Territories, Prince Edward Island, Quebec, Yukon

Field of practice: Saskatchewan, Newfoundland

Restricted procedures: Ontario

##### **RNs**

Title: British Columbia, Manitoba

Field of practice: Alberta, New Brunswick, Newfoundland, Nova Scotia, Northern Territories, Prince Edward Island, Quebec, Saskatchewan, Yukon

Restricted procedures: Ontario

##### **Registered Psychiatric Nurses:**

Title: Alberta, British Columbia, Saskatchewan

Field of practice: Manitoba

In the last decade, 6 provinces, and the Northern Territories have considered changing or have changed laws regulating health occupations. The major trend was to question the notion of exclusivity of practice and to introduce the more flexible notion of restricted procedures. The objective was to introduce more flexibility in the work organisation, particularly to make multiprofessional teamwork easier to implement.

**Source: Casey (1999)**

#### **1.5-Current changes in the health care system.**

As is the case for other health personnel, nurses face strong pressures to adapt to current transformations occurring in the health care system, which, in Canada, is moving from a production driven system to a population health driven system (Hayes & Dunn, 1998; Evans & Stoddart, 1990). This means that the allocation and the utilisation of resources, including human resources, must be increasingly made in accordance with the health needs of the population, rather than with the preferences of providers. Major elements of current reforms pay attention to the need for more integration and more co-

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<sup>3</sup> The time available to produce this review was approximately 7 weeks, which obliged the researchers to

ordination of care, in order to respond to health needs, to adjust to a level of resources which is not increasing anymore, and to keep up with the pace of technological evolution (Denis, Lamothe, Langley & Valette, 1999; Shamian & Lightstone, 1997; Angus, 1991). Proposals for reforming the health care system have typically underlined the need to reduce the number of hospital beds, the search for more efficiency, the development of ambulatory care and home care, the need for new methods of payment for physicians, a better control of the number of physicians, and efforts to increase efficiency in the use of nursing staff (National Health Forum, 1997; Angus, 1991 (see Box 3). The emphasis on the development of ambulatory and community care requires changes in the role of the different categories of providers in the health care system. It also questions the traditional autonomy of health care organisations and requires more cooperation and collaboration between them and between the various categories of providers.

**Box 3- Summary of recommendations relative to nursing by Commissions and Committees of inquiry, Canada, 1983-1990**

**1- Recommendations with a potential impact on the nursing labour market**

- reduction of acute care hospital beds
- measures to encourage health care institutions to be more efficient
- more emphasis on ambulatory services and home care
- to replace the fee-for-service method of payment of physicians
- to limit the growth of the number of physicians

**2- Recommendations concerning specifically the nursing profession**

- To make a more efficient use of nurses, particularly by freeing them from non-nursing responsibilities
- To facilitate the qualification of LPNs as RNs by the implementation of appropriate education programs
- To introduce more flexibility in work schedules; to give the responsibility of the management of work schedules to head nurses
- To expand the responsibilities of nurses, to include the planning and management of programs and activities
- To assess the impact of decisions relative to the medical workforce on the nursing workforce and the practice of nursing
- To improve the salaries of nurses, to compensate their increased clinical and managerial responsibilities
- To offer the possibility to work less hours
- To improve maternity leaves, sabbatical leaves, day care services, continuing education activities
- To promote a more significant participation of nurses in multiprofessional teams
- To involve nurses in the management of hospitals to a greater extent

**Source: Angus (1991)**

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be selective in the choice of material for analysis.

Specific changes to Canada's health care system have been well documented. Since 1993, Canadians have witnessed dramatic hospital and bed closures, shorter hospital stays, and a reduction in hospital, medical, and nursing staff. One objective of the health care changes was to reduce overall health expenditures by reducing the number of hospital beds and the length of stay in hospitals. The total public expenditures in health started diminishing in 1992, when the growth rate, in Canada, was 4.7%, whereas it was 8.6% the year before. In 1992, Saskatchewan was the first province to have a negative growth rate (-0.7%). In the following four years, the growth rate was below the rate of inflation and below the population growth rate. Real growth occurred again in 1998 (see Box 4). During that period, expenditure in hospitals declined every year until 1997; total expenditure in 1998 was below that of 1992. Between 1986 and 1993, the number of beds in Ontario was reduced by 20%. Between 1991 and 1993, Winnipeg closed 18% of its hospital beds (Shamian & Lightstone, 1997). Patients are also discharged sooner. The average length of stay of a patient undergoing coronary artery bypass surgery was 8 to 10 days in 1990 compared to 3 to 5 days in 1996 (O'Brien-Pallas & Baumann, 1999; Krapohl & Larson, 1996). Such changes were in part made possible by the access to new technology, and by the use of more rigorous protocols. Now, the impact of hospital downsizing on patient accessibility to health care has become a national issue. Problems of waiting times for access to some procedures and difficulties in ensuring support for patient outside the hospital are often considered as major problems in the current reform (Saul, 1999), even though this is not always well documented (McDonald, Shortt, Sanmartin, Barer, Lewis & Sheps 1998).

**Box 4- Annual percentage (%) change in public health sector expenditure, Canada, 1992-1998, in current dollars**

1992	4.7	(Saskatchewan: -0.7)
1993	0.9	(6 provinces with a negative growth of which Saskatchewan: -5.4)
1994	1.0	(7 provinces with a negative growth of which Alberta: -5.6)
1995	-0.3	(4 provinces, plus one territory of which Alberta: -5.1)
1996	0.2	(4 provinces, plus one territory of which Quebec: -3.3)
1997	1.5	2 provinces with a negative growth
1998	3.7	2 provinces with a negative growth

**Source: CIHI website**

The insecurity and tensions generated by the implementation of major transformations in the Canadian health care system have stimulated major debates about the benefits and pitfalls of our public health care system (Drache & Sullivan, 1999). For many analysts, it is essential to move forward with further transformations without reducing the importance of the public financing of the health care system (Drache & Sullivan, 1999; Evans, 1999; see also for European health care systems: Saltman & Figueras, 1997). Health care reforms seem more beneficial if they attempt to restructure the supply of care by new incentives and modalities of organisation.

Overall, current health care transformations have an impact on the organisation of health care delivery and on the role of different providers. This context is likely to have a significant impact on the role and development of the nursing labour market.

## **2- An overview of the workforce in nursing**

This section of the report is organised as follows: first, we present the limitations of the data available at country level, which make times-series analysis and interprovincial comparisons sometimes difficult. Then we present the current situation and recent trends in the supply of RNs and LPNs by province since 1982; for RNs, this can be made according to some characteristics such as place of employment, job status (full-time/part-time, regular, casual), age, etc.; in the case of LPNs, the availability of the data does not permit such analysis; data on registered psychiatric nurses are also presented. The next sections deal with the number of students and graduates from nursing schools, the entry in the labour market, leaving and returning to practice, immigration and emigration. The last section makes a brief situational analysis and looks at future requirements.

### **2.1-Limitations of the data**

One of the principal problems faced in analysing the nursing workforce is the lack of complete and reliable data allowing comparisons among provinces in terms of workers' characteristics and labour market conditions, and to monitor changes over time (O'Brien-Pallas, 1992). For example, the definition of a full-time nurse has changed over the years; also, in most years, one or more institutions did not report data on admission and graduation (Ryten, 1997).

The two main sources of information that allow to estimate the number of RNs and LPNs and the characteristics of these nurses at the national, provincial and territorial levels, are the National Census and the registration files of professional associations in the various provinces<sup>4</sup>. The *Labour Force Survey* of Statistics Canada provides also some interesting data as those on unemployment rate.

Most of the data presented below come from the files of professional associations and other professional bodies in each province. Each of these organisations sends its annual files to Statistics Canada for processing. These files are then sent to the Canadian Institute for Health Information (CIHI) and, in the case of RNs, to the CNA. Data from these three sources are thus the same. We must nevertheless stress again that there is far less data on LPNs; as of 1992, only the number total number of LPNs is available.

These data refer to RNs and LPNs who are registered (who pay their membership fees) with the professional association or the regulatory body in their province to have the right to work there. Thus, it does not include all trained RNs and LPNs who have obtained their professional certification at some point in their career. Even if the questionnaires vary from one province to another, the data make certain comparisons among provinces possible, such as whether or not they are currently working as RNs, their workplace, their employment status, and so on.

Much of our information comes from administrative files or survey results appearing in the reports and studies of governmental, professional and union bodies; professional and research journals were used as well. This wide array of sources provides a better understanding of changes in the nursing workforce, and the causes and consequences of these changes.

## **2.2- Current situation and recent trends**

In 1998, 254,964 registered nurses in Canada were registered with the professional association of their province. Among those who declared their activity status (243,262), 227,651, or 93,6%, were working in nursing (Tables 1 and 2). There were 76,680 LPNs in 1997 who paid their registration to their provincial association (Table 3). It is not known if they were working as LPN.

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<sup>4</sup> These two sources provide similar results on the number of nurses, though the breakdown by age is slightly different for each source. On the other hand, when it comes to LPNs totals, the National Census is less reliable; there are twice fewer LPNs in the census than in the files of the professional associations.

### **2.2.1-Registered nurses**

Among all RNs, 77,6% had a college diploma as their highest level of education in nursing, 20,9% had a baccalaureate, 1,5% (3,760) had a master degree and 204 a doctorate (Statistics Canada, 1999). There are important variations in the density of RNs from province to province. Whereas for Canada as a whole, there were 134 persons per RN in 1998, the Atlantic Provinces and Manitoba had fewer than 115, and Ontario and British Columbia were above the national average (Table 4). Proportionally speaking, it is Ontario, with 147 persons per RN, which has the lowest density of RNs' supply. It should be added that the population/nurse ratio (as measured at the provincial level) is generally inversely proportional to the population/physician ratio (CIHI, 1999).

After a period of strong growth in the 1980's, the number of RNs declined in the 1990's. In 1998, in Canada as a whole, there were 2.8% less RNs working in nursing, compared to 1992, a decline of 6,477 RNs (Table 2). In view of the fact that the number of RNs increased by 27% between 1981 and 1986, and by 11% between 1986 and 1991 (Ryten, 1997), this decline in the workforce may be interpreted as a new major trend. The decline observed in the 1990's may be attributed in part to budget cuts, and to the downsizing and the restructuring of the health care system.

### **2.2.2-Licensed Practical Nurses**

The population/LPN ratio also varies greatly from one province to another (Table 5), from 730 persons per LPN in British Columbia to 199 in Newfoundland with a national average of 395. The result is that the RN-LPN mix also varies a great deal (Table 6). In 1997, the RN-LPN ratio is 3,0:1 for Canada as a whole, but less than 3,0:1 in Atlantic province, 2,3:1 in Ontario and 4,5:1 in Alberta and 5,4:1 in British Columbia. This provides a good illustration of the differences in the organisation of work in nursing between provinces.

LPNs were affected more profoundly by the reduction of the workforce. Between 1992 and 1997, their number declined by 8.4%, for Canada as a whole. The provinces have employed a variety of different strategies to reduce their nursing staff. Between 1992 and 1998, while the number of LPNs declined in all provinces except New Brunswick, the number of RNs increased in 5 provinces and fell in 5 others. Alberta and

Manitoba experienced the most significant decline in LPNs (more than 25%). Some provinces partially or totally compensated the decrease in LPNs by increasing RN staff (Newfoundland, Prince Edward Island, Quebec, Manitoba and British Columbia). This reflects the changes in the philosophy of nursing care delivery that had led to a shift from team nursing to primary care nursing. This has resulted in many settings in a shift from a mix of RNs and LPNs to all RN staffing (HEU, 1995)

In addition, some provinces have reduced the number of LPNs, while increasing the number of unqualified personnel. In Quebec, for example, between 1987 and 1996, the number of LPNs in the public health care system fell by 836 (-4,7%) while the number of ward attendants increased by 3171 (11,9%) (MSSS, 1997). Other provinces used other types of strategy. For instance, in New Brunswick, the ministry of health implemented a nursing staff ratio of 20% RNs, 40% LPNs and 40% care aides (CUPE, 1999).

On the other hand, Benoit (1997b), in an overview of the situation of LPNs in different provinces, states there are shortages in some provinces because of school quota and increasing demand for LPNs in long term care and home care, but also because in some provinces (like Ontario and Alberta), more LPNs are employed in some specialised short term care, such as in emergency room and intensive care. For instance, employers surveyed in Manitoba indicated having difficulty in filling LPN positions (Assiniboine Community College, 1998). This report adds that the shortage will increase since LPNs are getting older (i. e. future retirements will increase) at the same time where recent cuts in education program financing had reduced considerably the numbers of graduates.

According to the MET (1992) the labour market indicates a shortage of LPNs mainly to rural and remote locations. Employers have difficulties in hiring casual LPNs to southern rural facilities since the number of graduates has been reduced in Manitoba since 1984.

Data from the CLPNA (1999b) reveal a favourable professional context in Alberta including a wider offer of education programs and more stable job positions (31% of LPNs have a full time work and 45% of them have a part-time; only 15% have a casual work).



The American literature revised by Benoit (1996) revealed that the non utilisation of LPNs in the system of providing health care increases the service costs, overcharges the RNs, requiring them to perform more activities with a minimal amount of personnel as well as to provide direct patient care without any professional assistance. Furthermore, this literature review shows that LPNs are currently employed in all models of nursing care such as team caring, integrated care, modular care, integral care, home care, and patient focused-care.

### **2.2.3-Registered Psychiatric Nurses**

RPNs constitute the third professional group of the nursing workforce for which a specific registration body exists. There are currently 1,034 RPNs in Manitoba, 1,166 in Alberta, 1,035 in Saskatchewan and 2,173 in British Columbia (RPNAM, 1999).

There are severe difficulties in recruiting and retaining psychiatric nurses. Available data show that the number of RPNs in Manitoba was the same in 1990, 1995 and 1999 (MNPAC, 1996); in British Columbia the number decreased from 2,280 in 1992 to 2,173 in 1999 (Health Human Resources Unit, University of British Columbia, unpublished data). We can expect that an important number of RPNs will retire in the next years as 29% of the RPN in the four provinces are over 51 years of age and 23% between 41 and 50 years old (RPNIA, 1999).

According to RPNIA (1999), the number of RPNs is inadequate to meet the current demand and the number of jobs offered increases. A precipitating factor may be the successful shift of their setting of practice from hospital to community services. RPNs also work in facilities of child and youth mental health, correctional institutions, tertiary psychiatric care, emergency mobile outreach units, as well as substance abuse, eating disorders and pain programs. Employers suggest additional utilisation of these nurses in some other settings and programs, i.e., mental teaching in schools, dual diagnosis and multiculturalism, palliative care. But as the demand increases, future supply will diminish since retirements from practice will increase due to the gradual reductions in the number of places in psychiatric nursing programs and financial support from the government to RPNs education over the last years.

#### **2.2.4.-Nursing services in Aboriginal communities**

High differences in the distribution of nursing personnel affect particularly Aboriginal communities. There are 223 full-time equivalent RNs in the nursing stations in remote and isolated communities located in the northern regions of provinces, which are accessible, only by air. Vacancy rates for RN positions fluctuated constantly, but are generally between 30% and 40%. This represents an average shortage of 100 to 125 RNs at a given time (Medical Services Branch, Health Canada, 1999). It takes at least 2 months and up to 8 months to fill a position. Turnover is high- the average length of stay is 24 months.

A major challenge in recruitment and retention is the working environment. RNs work in very small, isolated communities, which are very difficult to leave even when they are not working. Higher rates of illness and violence make the workload demanding, even more so because most facilities are short-staffed due to the high vacancy rate. RNs work in what is defined "expanded scope of practice", which means more responsibilities and skills with no additional compensation. As the number of RNs all over Canada is dropping, it is more and more difficult to recruit RNs for those communities (Medical Services Branch, Health Canada, 1999).

#### **2.2.5-Employment and working conditions**

The available data on RNs allow a more detailed analysis of changes that affected this category of nursing labour. During the 1990's, the number of RNs working in hospitals and in education institutions declined, whereas the number of those working in other types of settings increased or remained stable (Table 7). Between 1991 and 1998, the number fell in hospitals by 23,000 (14%) and in teaching institutions by 1,000 (37%), but increased by 50% in nursing homes and by 30% in home care and community health (Table 6).

Working conditions have also undergone considerable change in recent years. Between 1992 and 1998, the percentage of RNs in Canada as a whole working part-time increased from 36% to 48% (Table 8). These figures are substantially the same in every province. This high proportion of part-time workers might seem to correspond to a high level of job insecurity. However, several studies have revealed that not all-nursing staff want to work full-time (CNA, 1998a; 1998b; MSSS, 1989a), which could even be a

source of job dissatisfaction, and induce unplanned leaves or withdrawal from work because of work overload or stress.

Part-time work can take two forms: working part-time in a regular position or casual work. The phenomenon of nurses working on a casual basis, particularly in the hospital environment, is of great importance in all provinces. In 1997, only 40% of RNs in Quebec's public sector held a full-time regular position, 35% held a part-time regular position, while 25% were casuals (OIIQ, 1999). In 1999, the proportion of RNs who are working in casual positions is 21% in British Columbia, 21% in Alberta, 14% in Ontario and 21% in Newfoundland (Lanctôt, 1999).

In many cases, regular part-time work may be enough to meet both the requirements of the task at hand, and the workers' needs. Only a small number of workers, however, want casual work (SÉCOR, 1996). Based on data from the Association of Registered Nurses of Newfoundland (ARNN, 1999), 13% of RNs graduates between 1980 and 1994 worked part-time, and 26% were casuals. Ninety-one per cent of the casuals would rather work full-time, while only 0.8% wanted a part-time position and 8,1% wanted to maintain their casual status.

Casual work is a source of job dissatisfaction that can ultimately lead to withdrawal from the profession (OIIQ, 1999; RNABC, 1999; RNANS, 1996). Since many positions have been abolished or unfilled in recent years, working as a casual in one or more institutions provides the only way for the vast majority of young graduates to enter the labour market. In British Columbia, 90% of 1998's graduates were working in casual position in 1999 (Lanctôt, 1999). In 1997, more than half of the 1993's graduates in Nova Scotia was still casual, and their working time was equivalent to less than half of a full-time position (IHHRPD & NSDH, 1999). In Newfoundland, 66% of those who had graduated in 1991 were still working as casuals in 1996 (ARNN, 1999). In 1996, 96% of New Brunswick's nurses who were 25 years of age or less, were casuals (NRAC, 1997). In 1998, 10% of full-time RNs declared having more than one job, and this proportion reached 20% for those on part-time basis (Table 9). This fragmentation of the working life could be a source of dissatisfaction for workers of a weaker adhesion to organisational objectives, and of less continuity of care (Dussault, 1999). Furthermore, it makes it difficult to integrate young RNs, and may even threaten the

health and safety of patients, since most casualties are RNs with little experience (RNANS, 1996).

Casuals may be necessary to ensure that staffing can be maintained at the required levels, but there seems to have been a trend to use them to replace full-time or part-time employees. In the short run, they are cost-effective for the employer, but not in the medium to long term, for the system as a whole, as these RNs have less opportunities to develop their skills (MSSS, 1989a; 1989b).

Issues of occupational health complete the picture of working conditions. All categories of nurses are exposed to occupational risks inherent to their professional tasks, conditions of tasks' execution, environmental factors as well as to the direct contact with the clients. In Canada, nurses are exposed to three major risks, i.e., strains and sprains, slips and falls, and violence (CNA, 1998c; D. McPherson, CFNU, personal communication, November 25, 1999). Shamian (1999) argues that illness and disability of nurses account for the loss of 6.3 % of the workweek. Nursing is the professional group with the highest level of illness or disability in 1997 among all occupations. RNs lost on average 150 % more days of work than the average full-time employee in the country (Akyeampong, 1999; Sullivan, Kerr & Selahadin, 1999).

### **2.2.6-Ageing of the workforce**

Nurses are ageing as a group. Given that the average age of RNs at retirement is currently 56 years, the proportion of RNs over 45 years of age provides a useful gauge for estimating attrition (Ryten, 1997; ONTF, 1999). The proportion of RNs over 45 years of age has almost doubled since 1982, increasing from 23% in 1982 to 34% in 1991 and 44% in 1998 (Table 10). We may therefore anticipate a considerable increase over the next few years in RNs going to retirement (Ryten, 1997). In addition, recent graduates are ageing as a group. In 1994, 16% of graduates were less than 22 years of age, three times less than in 1980 (48%) (Ryten, 1997). Their delayed entry into the labour market probably signifies that the length of their professional careers will be shorter.

The ageing of the workforce is also a matter of concern for LPNs' workforce. For instance, 44,1% of LPNs in Manitoba were aged 45 and over in 1995 (39,2% in 1993); in Alberta, 79% are aged 36 and over in 1999.

## **2.3- Students in Canadian schools of nursing**

To measure the labour-market entry of new RNs, we must take into consideration that there are two routes to qualification as a RN: (1) Diploma programs offered at community colleges, and (2) Baccalaureates of Science in Nursing offered by universities, the program leading to a license to practice for those without a college-level background. To have the exact picture of new entrants in practice, we must not take into consideration those who first obtained a college diploma in nursing, and then went on to earn a university degree. There is no national data on LPN schools.

### **2.3.1-Sources and limitations of data**

Data on college students come from the Statistics Canada annual survey of colleges offering education programs in nursing, and data on university programs are extracted from the annual survey of the CAUSN. These data present limitations, according to Ryten (1997), who has made extensive use of data banks on health human resources, in a study for the CNA. She notes that one of the main difficulties in analysing trends in the educational system is the unreliability of admissions and graduation data found in national publications<sup>5</sup>.

### **2.3.2-Trends in admissions and graduation**

Despite the data problems, several points can be made here. During the 1990's, the total number of nurses in education fell substantially. Slightly more than 4,600 students graduated from Canadian colleges in 1996-97, compared to slightly over 7,000 at the start of the 1990's (Table 11). Since the number of graduates increased by only about 300, climbing from 1,200 to 1,500 (Table 12), university education did not compensate this decline. The number of educate nurses will continue to decline over the

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<sup>5</sup> This unreliability stems from that: (1) between one and 10% of institutions fail to respond to the questionnaire; (2) some data are estimates, not actual figures; and (3) some data may confound new admissions with the first year of enrolment, which includes students repeating the first year of their program or returning after a leave of absence. In her view, even if these problems have existed for a long time, they seem to have worsened over the last ten years; questionnaires sent to institutions no longer reflect the contemporary reality of nursing education, which has evolved considerably in recent years. The result is that, at the national level and sometimes at the provincial level, it is impossible to estimate the pass-rate in education programs for nurses. It follows that it is impossible to estimate precisely the impact of recent admissions to education programs on the future of the nursing workforce. It is therefore better to identify and employ data that is reliable and then extrapolate the results, and make adjustments at the national level as necessary.

next few years, since college-level admissions have fallen rapidly, from about 10,000 at the beginning of the 1990's to less than 4,000 in 1997 (Table 13) and university program admissions rose only from 1,800 to 3,000 (Table 12)

The increase in admissions to university programs and the decline in admissions to college programs were felt primarily in provinces where university education provides the only access to the profession. The overall decline in admissions is attributed to policies adopted by several provinces in the context of public sector budget cuts, and to the perception that the downsizing of the health care system would lead to a diminishing demand for nurses (IHHRPD & NSDH, 1999; SÉCOR, 1996). In 1996, Nova Scotia reduced its education budget by 40% (IHHRPD & NSDH, 1999), and Quebec cut colleges admissions by 50% and universities admissions by 20% (MEQ, 1999).

Many teaching institutions may have difficulty to attract suitable candidates, but this is not easy to document at the national level. Ryten (1997) has tried to measure the demand for nursing education empirically, and points to the lack of reliable data to measure the level of demand. Among other factors, the problem stems from the fact that the published data include the number of admissions, but not the number of applicants. Applicants sometimes apply to several institutions. Ryten uses the data of the Ontario Universities Application Center. This database contains information on every application made by an individual, to every university program in Ontario. The data used by Ryten focus on applicants to the generic BScN program between 1976 and 1997. She first shows that, even though the number of applicants fluctuated over the last 20 years, it has remained below its 1976 level since the beginning of the 1990's. It went from 1,780 in 1976 to 2,078 in 1985, to 1,718 in 1990 and to 1,529 in 1996. In 1997, a period characterised by budget cuts and a mood of uncertainty, it shrank by a third, to 1,058. Secondly, the data indicate that nursing is experiencing a steady decline as a preferred career. Until 1985, nursing was the first choice for over 80% of applicants, but in 1996 the proportion had dropped to 72%, and in 1997 to 69%. These observations raise the issue of how to attract quality candidates, at a time when the proportion of women who undertake university studies is increasing, and fewer women envisage selecting nursing as a first choice of career (Aiken & Salmon, 1994).

As we have said earlier, there are no reliable data that permit a cross-national measure of graduation rates. Nevertheless, comparing data on the number of graduates

and admissions or first year of study three or four years earlier (Tables 11,12 and 13) permit to roughly estimate a rate of 75% for college graduates and 85% for university graduates.

#### **2.4-Joining the labour market**

There are no reliable information systems to estimate the proportion of RNs graduates across Canada who will actually enter the nursing labour market in their province of graduation or in Canada. Some provinces have systems to monitor students who have completed their education. There are also studies, conducted on an irregular basis, that intend to track graduates on the labour market, but usually they do not consider inter-provincial mobility. This means that some RNs will be considered as not being on the market, when in fact they work in another province.

Punctual studies have been carried out in recent years in various provinces (ARNN, 1999; OIIQ, 1999; RNABC, 1999a; RNANS, 1998; 1996; ANEA, 1996; MNPAC, 1995). Some are based on surveys of graduates registered in a particular province, while others compare data obtained from the files of graduates of teaching institutions with that obtained from professional bodies at the provincial level. The analysis of these studies leads to observe the following: to a significant degree, in all provinces, the situation regarding entry into the labour market has been reversed over the last two or three years. From the beginning of the 1990's until quite recently, a growing proportion of new graduates did not work as RNs in their own province several years after graduation.

Now there is hardly any unemployment, although the vast majority works as casuals, frequently at several locations and for fewer hours than they wish. The most recent *Nursing Employment Cross-Country Checkup*, reveals a comparable situation in every province (Lanctôt, 1999). For example, 99% of the 1990 graduates in Nova Scotia found work in the province within a year of graduating, compared to 90% of 1994 graduates (RNANS, 1996). In 1989, 91% of RNs in Alberta were registered as active with the AARN; for 1991 and 1995, the proportions were 97% and 71% respectively (ANEA, 1996). During this period, many RNs looked for employment in other fields, within and outside the health sector. In 1994, 47% of Nova Scotia's graduates were

looking for work as a LPN or as a personal care worker, compared to only 4% in 1990 (RNANS, 1996).

In most provinces, the conditions for new graduates improved around the mid-1990, at least as RNs getting a job in nursing in the province. In Quebec, the percentage of new RNs graduates were registered as active with the OIIQ in 1998 was 84% for the RNs graduates of 1994 and 92% for the RNs graduates of 1997; in 1996, 46% of those registered were working as RNs, compared to 83% in 1997 (OIIQ, 1999). In 1998 and 1999, 49% of Newfoundland's 1995 graduates were working as RNs in that province; the proportion increased to 79% for 1998 graduates (ARNN, 1999). In New Brunswick, 85% of 1990 to 1992's RNs graduates renewed their practising membership one-year after the graduation. This proportion fell to 54% for 1995's RNs graduates and increased to 74% for 1998 RNs graduates (New Brunswick Board of Directors, 1999).

These data do not consider the fact that new graduates can work in other provinces, which is a loss for the province, but not for the country. The most recent data show that 22% of all RNs (not only new RNs) in 1998 were educated in another province (CIHI, unpublished data). In British Columbia, 28% of RNABC new registrants in 1998 were graduates from other provinces.

Unemployment is still low for RNs in comparison to other occupations. The Labour Market Surveys conducted by Statistics Canada confirm not only that RNs unemployment rate is very low, but also that this rate is declining (from 2,3% in 1991 to 0,9% in 1998).

## **2.5-Immigration**

The number of new RNs trained outside of Canada entering in practice each year is less than 1% of the total workforce (CNA, 1997), and has been in constant decline since the beginning of the 1990's. The number of foreign trained new RNs registered with a provincial regulating authority, fell from 2,289 in 1991 to 628 in 1996 (Ryten, 1997).

## **2.6-Leaving and returning to practice**

Data from 1991 Census show that 82% of all graduates from college or university nursing programs and active in the labour force are working as RNs



(Statistics Canada, unpublished data). This percentage is considered high for a predominantly female occupation (Ross, 1996)

In Nova Scotia, 4,5% of those RNs aged less than 50 was employed in nursing in 1997 had not re-registered to the RNANS or were not employed in nursing in 1998 (IHHRPD, & NSDH, 1999). The same report indicates--without giving data--the majority of those who have left for other reasons than retirement between 1993 and 1998 did not return.

RNs who are returning spontaneously to nursing after an absence do not appear to be a significant contribution to the growth of the workforce. In 1998, in an effort to stimulate returns, the Quebec government initiated a program to encourage nurses who had left the practice prior to 1995 to undergo an education program that would allow them to resume their practice. Only one quarter of the targeted nurses participated in the program (OIIQ, 1999).

## **2.7-Emigration**

No data exist to establish precisely how many nurses leave the country, but there are signs that, in recent years, there might have been an increase of emigrants. HRDC and Statistics Canada conduct surveys at regular intervals on graduates (of which approximately 1,000 are nurses) of educational institutions. According to the last survey, they estimated that over 900 of college and university trained graduates during the year 1995 were working in the United States in March 1999 (HRDC & Statistics Canada, 1999). That number represents 9% of the about 10,000 who graduate<sup>s5</sup> during the same period.

Other sources of data were used to estimate emigration. Iqbal (1999) published a study that estimated that 56% of the RNs who graduated from 1995 to 1997 and immigrated to the United States compared to 30% for the 1986-1988 graduates. These figures are very high and quite surprising. Further investigation on methodological aspects should be done. Problems can come from the estimation of the number of emigrants (permanent emigrant and a part of the non-permanent emigrant) or from the estimation of graduates number.

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The survey included graduates from all university programs that led to bachelor's, master's or PhD degrees. That represents 4,334 (Statistics Canada, 1999) and not only 1,507 coming from basic baccalaureate program (table 12 ).

On the other hand, the CNA *Nursing Employment Cross-country Check-up /January1999-June 1999* (Lanctôt, 1999) revealed that all associations surveyed reported a significant and growing number of requests from RNs who left the province, for information on the prospects for finding employment in their province of origin.

## **2.8-Situational analysis and future requirements**

The data that we have presented illustrate clearly that the nursing labour market worsened in the 1990's. The perception of "crisis" in the labour nursing market is not new. Critical situations were already evoked at the beginning of the 1980's (Angus, 1991; CNA & CHA, 1990; CEMOSI, 1987). What is new in the 1990's is that the number of practising RNs and LPNs diminished due to a large drop in new Canadian-educated graduates and to a reduction in the proportion of those entering in practice (IHHRPD & NSDH, 1999; OIIQ, 1999; CNA, 1998a; 1998b; 1998c) as well as the growing number of retirements as RNs are getting older (Ryten, 1997)

Most provinces went from an oversupply to an under-supply situation for RNs (CNA, 1997) and some provinces are also short of LPNs (ONTF, 1999). Employment conditions are perceived as less attractive. Only half of the nursing personnel are working on a full-time basis, and casual work is the only way to entry in the nursing labour market for the vast majority of new graduates. Nursing is thus seen as a career with limited opportunities, and with a precarious future (CNA, 1998b). As the majority of those working part-time would prefer to work on a full-time basis, that means that there is a potential workforce that could be used if their was adequate employment conditions.

The large scale layoffs of RNs and LPNs and a deteriorating working environment encouraged many RNs to seek work in other provinces or other countries, even to quit nursing for another field of activity (ONTF, 1999; CNA, 1998c; Ryten, 1997).

Some have argued that RNs shortage could be overcome by using more appropriately LPNs and unlicensed health care aids. Many LPN organisations are concerned with the under-utilisation of LPNs (CNO, 1999; CUPE, 1999; Benoit, 1997a; Benoit, 1997b; OIIAQ, 1997; HEU, 1995; OCHU & CUPE, 1995). According to CUPE (1999), misconceptions about the role, professional education and scope of practice of

LPNs have restricted their utilisation in the Canadian health system (CNO, 1999; Huggan, 1998; Davies, 1991) due to the outdated description and interpretation of delegated acts regarding the utilisation of new, medical technology, supplies, and equipments (Ledoux, 1997). Effective utilisation of LPNs is said to be hampered by policies in hospital and other settings which prevent LPNs to use all their skills for which they were trained because many employers do not assign duties to the full extent of the LPNs scope of practice (CNO, 1999; CUPE, 1999; HEU, 1995).

This stresses the question of the effectiveness of different nurse staffing levels and mix. Many studies have tried to evaluate the impact of nurse staffing on the quality and cost of health care. According to the few documents that have made a systematic review of the literature on the subject, results are inconsistent from one study to another (Bourgeault, 1997; Krapohl & Larson, 1996; McKay, 1995; Manga & Campbell, 1994). In 1997, the Canadian Union of Public Employees mandated the Centre for Health Studies at York University to conduct a systematic review of literature on the impact of nurse staffing levels and mix on the quality and cost of care (Bourgeault, 1997). The main conclusion was that there is a paucity of research applicable to Canadian LPNs since most of this literature is based on United States examples. Nevertheless, their conclusions, concerning the three types of outcomes they analysed were that: 1) some studies associated lower mortality rate with an increase in the number or a higher proportion of RNs in the nursing team, but those studies could not capture all factors contributing to mortality (one important was staff level versus staff mix); 2) research measuring quality is less clear: some indicate no change, others showed a decline and others a slight improvement; 3) mixed findings on cost-effectiveness made it difficult to come to any conclusions.

According to CUPE (1999), a clear conclude cannot be made from this review of literature of American studies, there is a need to conduct research to assess the appropriate staff mix in the various health care facilities in Canada. This conclusion is shared by many authors (Manga & Campbell, 1994).

Many recent studies that aimed at estimating the future supply and demand for RNs showed that, even making the most optimistic hypothesis, the supply of nurses will grow at a slower rate than the demand (IHHRPD & NSDH, 1999; OIIQ, 1999; NRAC, 1997; Ryten, 1997; SECOR, 1996). For instance, in a study realised for CNA, Ryten

(1997) estimated that by the year 2011, there would be 231,000 nurses, whereas, in her scenario of low demand increase, the demand would be at 290,000 nurses. This means a deficit of 59,000 nurses. Using the scenario of high demand increase, the deficit would be of 113,000 nurses.

The approach used by Ryten and by others to make projections is based on the postulate that the actual utilisation of services corresponds to the real needs of the population (i.e. there are no unmet needs and no unnecessary services are produced) and that all the services are produced in the most efficient way (by the right person at the right place and at the right moment). This is to be contrasted with what Park and Hughes (1997) reported, that five provinces have done recent studies on the topic of resource planning, all concluding to the elusiveness of arriving at a reliable method to predict needs for health services.

Even if it is impossible to estimate the "real needs" for nursing personnel, there are major trends that will increase needs for health care services and nursing services. A major determinant of demand for nursing service is the ageing of the population. The combination of a large population cohort moving into old age and the longer life span resulting from health care advances will result in increasing numbers of patients with chronic conditions requiring nursing care. Another factor likely to increase demand is the effect of advanced technologies in keeping alive much more acutely ill patients who require more nursing care hours. Demand would also increase because the population is expecting more services from the health care system (NSDH, 1999; ONTF, 1999; Moore, 1988; CNA, 1997; Ryten, 1997).

The results of different projections of RNs workforce show that demand for nursing services (measures most of the time by current utilisation by age and sex) will grow faster than supply, if nothing is done to increase the supply of nursing services (IHHRPD & NSDH, 1999; OIIQ, 1999; NRAC, 1997; Ryten, 1997; SECOR, 1996). Many solutions are proposed: increasing the number of places in nursing programs (ONTF, 1999; CNA, 1997; Ryten, 1997); substitution of RNs by LPNs for certain types of practices or activities (Angus, 1991; CAPNNA, 1990); better use of nurses who are in practice, since half of them are working part-time or casual (CNA, 1998a; Roos, 1996; Moore, 1988; CEMOSI, 1987); better retention strategies (Kazanjian et al, 1992; CNA,

1997); strategies to increase the entry in nursing workforce of new graduates and to encourage the return of those who have left previously (OIIQ, 1999).

As we can see, for many stakeholders and analysts, recruitment and retention is actually a real problem. The next chapter will consider those aspects.

#### **Box 5- The Nursing Labour Market: Some highlights**

- Between 1992 and 1998, the number of RNs in Canada diminished by 2.8% and that of LPNs by 8.4%.
- According to most observers, in the 1990's, most provinces went from an oversupply to a shortage of nursing personnel.
- There are important inter-provincial variations in the Population/RN, Population/LPN, LPN/RN ratios.
- Emigration is said to be an important trend. About 10% of RNs, who graduated in Canada in 1995, were practising in the USA in 1999.
- All projections produced recently indicate that the supply of RNs will grow at a slower rate than demand.
- The participation rate to the labour market is high among RNs (about 80%). This leaves little hope that strategies to convince the non-participants to enter the market will be very effective.
- Only 50% of nursing personnel work on a full-time basis, even though a majority of those working part-time would prefer a full-time job.
- There is no evidence in the literature of the impact of different models of services delivery and personnel mix on outcomes and costs.
- Aboriginal communities are particularly affected by RNs shortage.

### **3-Recruitment and retention**

A section on these topics is justified by the amount of literature devoted to them. The “problem” is not new, but in the context of a decline in the numbers of applicants to studies in nursing, of the ageing of the nursing workforce, and of a possible growth of leavers, it takes new dimensions. This section reviews the literature describing the issue, the consequences of a declining capacity to recruit and to retain nursing personnel, and the strategies put forward by various organisations to address these problems.

#### **3.1- The "causes" of the problem**

Recruitment and retention have been longstanding challenges to the nursing profession (CNA & CHA, 1990; Collinge, 1988) for all categories of nurses. As noted earlier, more RNs are leaving the profession to seek employment outside nursing and fewer qualified recruits are selecting nursing as a first choice (Ryten, 1997). New graduates are looking to the United States (where salaries are higher) for employment opportunities rather than establishing a career in Canada (Ontario Nursing Task Force,

1999). Already there are serious nursing shortages in specialty areas of intensive care, operating room and emergency nursing. Nurses are increasingly leaving the profession, at a time when potential new students are less numerous (IHHRPD & NSDH, 1999; OIIQ, 1999; CNA, 1998a; 1998c).

### **3.2- The changing health care environment**

Many texts refer to a recruitment and retention problem in nursing, which would have its roots in the changing practice environment, particularly touched by the process of downsizing, with its negative consequences on the profession's attractiveness, and on the perceptions of the working conditions. The extensive restructuring of the health care system, and rapid technological development, are said to have caused the steady decline in RN employment, and the increase of part-time employment, resulting in creating among nurses disillusion about the quality of their work environment and conditions. This has had a negative impact on the profession's attractiveness for new students (IHHRPD & NSDH, 1999). Other authors mention the low social value given to nursing, as illustrated by the absence of career plans, and of in-service education, as a contributing factor to making recruitment difficult (CNA, 1998a; Andrews, 1991). Many occupations offer better career prospects, with higher financial rewards, respect, authority in decision-making, and leadership opportunities, than what nursing currently can offer<sup>s</sup> (May, Champion, & Austin, 1991).

A few position papers have posited that the perceived growing gap between the discipline of nursing and its clinical practice have also served to make the nursing profession less attractive to career oriented, qualified students (Grossman, 1999b; Grossman & Hooton, 1993). Whereas the discipline of nursing tries to define itself by scientific knowledge grounded in the biological, psychological, and social sciences, the work environment, especially in the hospital, has impeded nurses to practice according to the expectations of their discipline (Grossman, 1999a; 1998b).

Hospital restructuring has added to a growing perception of professional disenfranchisement due to permanent positions being reduced; positions to informal caregivers increased; learning workshops and preceptorship programs reduced; workload increased (OIIQ, 1999; RNABC, 1999a). These changes have resulted in reported complaints about unstable nursing teams, fragmentation of nursing care, the

growing invisibility of the profession, and reduced opportunities for on-going clinical learning, the hallmark of professional practice (Grossman, 1999b).

### **3.3-Job satisfaction as related to retention**

Structural changes to health care delivery are seen as having an impact on the nurses' quality of life and job satisfaction, for example, by creating a trend of occupying two or more jobs. Research on the perception of nurses of their quality of working life, reports poor morale and widespread job dissatisfaction (CNA, 1998a; Armstrong-Stassen, Cameron, & Horsburgh, 1996; Attridge & Callahan, 1990). RNs' dissatisfaction with the work organisation in health care institutions (Kerr & MacPhail, 1996) correlates strongly with low organisational commitment, autonomy, leadership and opportunities for advancement. On speciality units, job satisfaction also correlates with autonomy, and with an appropriate workload (Freeman & O'Brien-Pallas, 1998).

A heavy workload, the perceived inability to ensure quality care to patients, burnout, and poor salaries are sources of dissatisfaction (CAN, 1998a; Grossman, 1999a). In a survey conducted in the United States, RNs who have left nursing practice were less dissatisfied with base or entry salary than with the absence of a career progression in salary (Pierce et al, 1991). The authors show that American RNs who stay in direct patient care can expect their salary to increase by 36% over the span of their career. In comparison, secretaries can expect a 72% spread and accountants and computer programmers, where entry-level salaries are comparable to RNs', a 193% and 106% spread respectively.

Other sources of dissatisfaction include a perceived lack of managerial support, lack of control over nursing work, a growing tension between nursing hierarchical authority and professional responsibility, inflexible work schedules, low professional status, a growing sense of powerlessness (Sabiston & Laschinger, 1995; Attridge & Callahan, 1990). Because of budget constraints, managers have been reluctant to add staff based on the unit's workload measurement, contributing further to a sense of powerlessness (CNA, 1998a). Yet the clinician, not the manager is ultimately responsible for the patient's quality of care. This perceived lack of accountability and control over the nature of one's practice, has been identified as a serious contributing factor to a growing sense of powerlessness among nurses (Sabiston & Laschinger,

1995). Conversely, the perception of being autonomous and the value given to one's professional role in specialties, are positive factors in retention of RNs in the profession (Leipert, 1996).

High levels of stress, in a context where little professional support or clinical aid is available, and lack of support or mentoring of new recruits may create retention problems (Baumann, O'Brien-Pallas & Butt, 1999; RNABC, 1999a; Rayan, Blythe & Pallen, 1998; Dallaire, O'Neill & Lessard, 1994). Casual work is perceived as contributing to making retention difficult (OIIQ, 1999; RNABC, 1999a; RNANS, 1996).

### **3.4- Other contributing factors**

According to one author, the RNs' mobility and emigration are encouraged by the current legislation, such as the 1994 Agreement on Internal Trade between provinces and the 1994 North American Free Trade. Conversely, linguistic barriers seem to favour the retention of French speaking nurses in Quebec, and to limit the immigration of nurses from other provinces (Hadley, 1995).

The media are often mentioned as contributing negatively to the profession's attractiveness, when they emphasise the difficulties of the health care system in general, the lack of control of their professional practice by nurses, and the poor quality of their practice environment (RNABC, 1999a; CNA, 1998a; Collinge, 1988). Finally, one source refers to a generalised lack of understanding of the nature of nursing resource planning as undermining the initiatives addressing the problem of RNs' retention by the profession and by the job market (RNABC, 1999a).

LPNs have their own recruitment and retention difficulties. In Quebec, there is a reduction of new students, fewer job opportunities, and greater utilisation of unlicensed personnel, for example to provide home care (OIIAQ, 1997). According to the CTIIA (1997), LPNs receive restricted in-service education, which creates dissatisfaction. LPNs say there are administrative obstacles to the performance of procedures that they are legally entitled to perform. Legal issues relating to the delegation tasks and the need to work in some jurisdictions under the direction of medical practitioners or other health team members, limit their autonomy (Dussault, 1994).

A higher, heterogeneous scope of practice of LPNs in the health facilities (Benoit, 1998) is another contributing factor. LPNs are associated with the delivery of home care



nearly everywhere in Canada (one-third of nursing personnel in this sector in Ontario) conversely, LPNs have in this sector a poor participation in Quebec's CLSC system. The lack of job opportunities in Quebec leads LPNs to work as nurse aides or special care aides (Benoit, 1999). Also, at the services of health promotion, the number of LPNs is reduced since this activity is exclusively of responsibility of those RNs having a bachelor or master degree in Nursing (Benoit, 1998). Elsewhere, other provinces began to enrol more LPNs e.g. Prince Edward Island (in community health care), Maritimes (in extra-muros hospital, home care), New Brunswick and Manitoba enrol LPN in long term care, in acute care facilities in Alberta and Ontario (Benoit, 1997). In Alberta, LPNs have a consistent role in long term care (CLPNA, 1999a). Such an enrolment is shown by the participation of LPNs as a third part of all professionals involved in home care. For instance, in Ontario, LPNs ensure the care continuity performing also the role of *Nursing Case Managers* (Benoit, 1998).

### **3.5-Consequences**

The continuous cycle of hiring new nurses from all occupational categories, because of retention problems, is said to undermine continuity of care (Baumann, O'Brien-Pallas & Butt, 1999), since RNs constantly must work in new and unfamiliar clinical areas. This might affect the standards of nursing practice, a topic that has been discussed for many years (Carson, McGuire & Lamb, 1987). A report about health care in Manitoba (MNU, April 1998 quoted in CNA, 1998a) reports that RNs and clients' families denounced an increased lack of safety in the daily situations of hospital and community care. Examples of unsafe conditions in hospital practice include: (1) neglect of taking vital signals; (2) medication and treatments given late; (3) medication errors; (4) increasing number of bed scores; (5) reduced observation in the post operation period; (6) neglect of emotional and psychological support; (7) increase of physical accidents; (8) transmission of respiratory infections among patients; (9) inability to monitor patients in acute units, (10) poor physical care; and (11) inadequate teaching before discharge.

Similar arguments were made by the RNANS (1996) about the impact of the increased use casual staff on care. Amongst 527 respondents, 87.5% evaluated that their

ability to provide safe, competent care had been altered, particularly because they were unfamiliar with the practices of the unit.

### **3.6-Strategies**

Many authors write that effective strategies to retain nurses must be developed (RNABC, 1999a; CNA, 1998a; Sibbald, 1998; Locas, 1993; Collinge, 1988). Among the strategies proposed, the following are frequently mentioned:

- The reduction of the use of casual workers, and the increase of regular staff.
- The improvement of working conditions, including the implementation of family friendly policies.
- The review of professional legislation in the light of the new roles of nurses in the health care system, particularly with a view to ensuring that they have more professional autonomy.
- The development of continuing education to make the profession more attractive to recruits and to facilitate the return of those who have left the profession associations (CNA, 1998a; 1998b; IHHRPD & NSDH, 1999; RNABC, 1999a).

The CNA suggests that governments can play a more decisive role in avoiding labour market imbalances, with a comprehensive planning, political commitment, coherent and integrated policies, support for skills development, deployment and distribution of staff within the health system (Buchan quoted by CNA, 1998a). Strategies to recruit and to retain nurses should include the better integration of new nurses, the evaluation of staffing needs, the promotion and development of professional autonomy, support for professional advancement, better compensation and benefits (CNA, 1998a). This must be done quickly, for the deteriorating quality of work environment may encourage the best nurses from all categories to leave the profession (RNABC, 1999a). Also, intervening rapidly is necessary, because as time passes, the capacity to correct the present situation diminishes, as problems become more difficult to tackle. Also, there is a time lag between the interventions and the changes they are expected to produce (O'Brien-Pallas, Baumann & Villeneuve, 1994; Haines, 1993).

### **3.7- Management strategies**

Nursing managers use diversified retention strategies including: participation in work scheduling, decision-making, efforts to improve relationships with peers, and with other professionals, specially with physicians, and increased opportunities for educational and professional growth (Armstrong-Stassen, Cameron & Horsburgh, 1996; Leipert, 1996; Haines, 1993; ANEMT, 1991). More might be necessary, as is shown by a small group of studies on developing and testing nursing models aimed at enhancing nursing recruitment and retention rates. One example is the on-going research on the attributes of a magnet hospital referred to in a preceding section. These studies have found high satisfaction rates among RNs, low job turnover, low vacancy rates, and perceived autonomy. Identified positive attributes of the work environment included specialised areas of nursing practice, an increased ratio of RN-to-patients, a flattened organisational structure, a shared governance model, flexible nursing care and nursing representation on the highest decision-making body of the hospital. Although systematic evaluation of the potential contribution of these attributes to retention and recruitment is still lacking, these studies point to the importance of addressing retention and recruitment within a broad context that must include the organisational structure of the work environment.

### **3.8- Changing the legal framework**

As regards strategies relating to expanding the autonomy of all categories of nurses, current regulatory and legislative changes are on the agenda: (1) the College of Nurses in Ontario is proposing an extended class of registration to support the NP role; (2) the Ontario Ministry of Health supports the NP program; (3) the 1995 Alberta's *Public Health Act* allows RNs to provide extended health services in under serviced areas (in such conditions, nurses will prescribe drugs and order tests); (4) and the AARN established an extended practice roster for qualified RNs based upon mainly the requirements of the bachelor education in nursing, three to five years of clinical experience among others; (5) a joint proposal of the RNABC and the BCNU has been presented to the Health Professions Council of British Columbia (RNABC & BCNU, 1999) to remove possible ambiguity between roles, redefine RNs' scope of practice and clarify the nature of the care provided to the population.

This proposal claims the social and legal recognition of the RNs autonomy and expertise in (1) making a diagnosis; (2) performing physically invasive procedures; (3) managing labour and conducting vaginal deliveries in institutional settings; (4) applying or ordering the application of a form of energy; (5) prescribing, compounding, dispensing or administering a listed drugs; and (6) administrating of and monitoring initial doses of drugs for unstable clients/with unpredictable outcomes. The aim is to redefine RNs' practice and to recognise this practice in a continuous, rational use of nursing workforce attending the population health needs within a multidisciplinary setting of practice.

Legislation regarding the scope of practice of the LPNs in Alberta, British Columbia, Manitoba, Nova Scotia, Saskatchewan are currently under review (CNO, 1999). In Alberta, the scope of practice was expanded to include administration of narcotics and subcutaneous injections (CLPNA, 1999b).

#### **4-Nursing responses to the changes in the health care system**

The evolution of knowledge and technology in the field of health care has transformed the production of services in general, and the practice of nursing in particular. The literature shows that nursing profession perceives that it has to meet the challenge of producing effective and efficient services, in an environment in which moral and ethical dilemmas are always more numerous and complex, and in which multiprofessional work is becoming almost a requirement. This section presents some of the strategies of the nursing profession to respond to these challenges, namely the review of education programs, the identification of new competencies required of nurses, the development of new models of practice, and research activities.

##### **4.1-Education programs**

First, we present a picture of education in nursing in Canada. Education programs for all categories of nurses are offered in all Canadian provinces. In the Maritimes, Manitoba and Saskatchewan (as of 2000), the Bachelor's degree is the only path of entry to the profession. Alberta, British Columbia, Ontario and Quebec offer professional education at the college (post-secondary technical and vocational) level, in addition to a Bachelor's degree. In Alberta and British Columbia, a college diploma exit can be taken during the four-year bachelor's program, but most candidates prefer to

continue to the university degree. It is government funding which limits the number of students who can continue through the four years without exiting with a diploma (W. McBride, CAUSN, personal communication, November 30, 1999). In Ontario and Quebec, the college diploma allows graduates to practice nursing, but a very large number of college graduates go on to obtain a Bachelor's degree (40% in Quebec). From January 1st, 2005, all new members of the CNO will have to hold a Bachelor of Science in Nursing. With regard to graduate studies, all Canadian provinces, except Prince Edward Island, offer a Master's program. There are doctoral education programs in Alberta, Ontario, British Columbia and Quebec (CUP, 1999; OIIQ 1998; Richardson, 1997; MEQ, 1996, Statistics Canada, 1995).

#### **4.1.1-Basic and undergraduate programs**

Numerous ambiguities persist as regards the functions and types of activities of LPNs, college graduates and nurses holding a BSc. The same is observed at the level of education programs. Overlaps exist, which may eventually compromise the quality of collaboration in the practice environment.

According to CPNA (K. Kay, CPNA, personal communication December 1, 1999) the LPN's profession is described as being "Licensed Practical Nurses provide nursing care for individuals under the direction of medical practitioners, registered nurses or other health team members. Working under the direction of a medical practitioner or registered nurse is not required in all jurisdictions".

Education to LPNs is offered in community colleges (all jurisdictions except Alberta, Newfoundland, and Quebec) and high school programs. Some of these programs build a career ladder into a BScN program. The length of the education program and the professional title vary amongst the provinces as well as students enrolment in nursing basic programs. The basic programs are measured in hours, weeks, months and years, limiting an effective comparison among provinces (CNO, 1999). For all Canadian provinces (except Quebec), LPN education varies between 1,200 and 1,500 hours (CNO, 1999). Quebec offers 1,800 hours of education leading to a post secondary diploma. The education programs vary, depending on the province, and, consequently the practice of LPNs differs from one province to another (CUPE, 1999; HEU, 1997; OIIAQ, 1997; MEQ, 1996; Dussault, 1994; Paradis, 1994).

Layton (1998) advocated that education of LPNs remains misunderstood since they are not prepared to be a substitute worker of the RNs (diploma level or bachelor degree). LPNs receive education to play a professional role as a complementary nursing worker within the nursing team of professions.

The main difference in education between LPNs and RNs is one year of training. They may also receive specialised courses such as in Drug Therapy, Operating Room Technician. For that, there are many areas of competence where LPN and RN overlap (CUPE, 1999).

According to the CAPNNA (1990) and the CTIIA (1997), all LPN associations maintain that the initial education given to LPNs should be enhanced to meet current health needs. In Quebec, the LPN training is a post secondary two year program and shows overlap with the RN education program in CEGEPs (MEQ, 1996). Two paths are available to the CEGEP-educated nurse. One is the initial education (2,115 hours), and the other is the education designed for LPNs (1,425 hours). They lead to a college diploma after three years of study. In Alberta and British Columbia, collaborative programs offered by some colleges and universities can lead to a nursing diploma in three years with a special preparation seminar (W. McBride, CAUSN, personal communication, November 30, 1999; OIIQ, 1998; MEQ, 1996).

Specific problems of LPN education were indicated by the CNO (1999). These problems are due to the lack of review of the programs; lack of congruence between education to professional competencies to the scope of practice, leadership skills, and evidenced-based practice; difficulties in finding clinical setting to students placement; as well as the lack of LPNs instructors who could serve as role models for the professional practice.

In May 1998, the Minister of Education in Quebec invited various groups in the field of education and health to examine the question of nursing education. After drawing up a list of needs defined by the various groups and reflecting on future changes and requirements, the Advisory Committee reached a consensus that it was impossible for CEGEP education, at least in its current form, to satisfy hospital and community health needs. There is the need to substantially enhance the future education for RNs (MEQ, 1999).

There are 35 programs of Bachelor of Nursing in Canada. The bachelor nurse is trained to become a clinical generalist able to intervene with individuals, family, groups and communities; but there is also a trend towards specialisation as illustrated by the number of nurses who are now certified as specialists (CAUSN, 1999; CNA, 1999a). In Canada, the majority of Bachelor's degrees in nursing is a four-year program. However, in Quebec, there are some three years or three and a half years programs. In some provinces, such as Manitoba, the four-year programs have been "fast-tracked" to three years or two and a half years. In some other provinces, there is also two years programs which are built on the basis of students having degrees in other disciplines and covering the liberal arts and sciences courses that would normally be offered during the first two years of a four-year program (W. McBride, CAUSN, personal communication, November 30, 1999). In Ontario, there is a Bachelor's program leading to the title of "Nurse Practitioner"; Alberta, British Columbia and Nova Scotia consider introducing a similar program. In Quebec, a Bachelor's degree may be obtained in three ways: after the diploma "Sciences de la nature" (a CEGEP level) or after the diploma "Soins infirmiers" (a CEGEP level) or by accumulating three certificates in fields such as health administration, community health, gerontology, etc. (CUP, 1999). In British Columbia, Alberta, Saskatchewan, and Manitoba, there are education programs, varying between two and four years, to RPNs.

In general, university programs mean to provide students with a more in-depth study of areas, such as epidemiology, immunology, microbiology, nursing, research, chemistry, statistics and pharmacology that CEGEP programs only examine superficially. University education aims at helping the nurse to become versatile in different settings, to apply her skills with greater autonomy, and to take greater responsibility for the care that she provides. The concepts of health promotion and disease prevention are taught in greater depth at the university level (MEQ, 1996; Layton, 1998). According to CUP (1999; p. 37) "...role changes for nurses working in the health care system require that they have a basic knowledge of biology, social sciences and nursing. They must learn how to think scientifically, which is a prerequisite to forming appropriate clinical opinions and making ethical decisions". In Quebec, 21.3% of working nurses are pursuing university-level studies (OIIQ, 1999).

Like all university graduates in health, a holder of the Bachelor of Nursing is a generalist (CUP, 1999). The need to provide care in many settings requires that nurses receive an education comparable to that provided to other health professionals; only then will they be able to play their full role in assisting health care teams (CUP, 1999; MSSS, 1999). Initial education at the Bachelor's level is deemed to provide nurses with skills that are more up-to-date and more appropriate to their needs. (OIIQ, 1999; RNABC, 1999b; Gottlieb, 1998; MEQ, 1996; Harvey, 1995; NRAC, 1993; Clermont, 1987).

Numerous countries have either set up, or recommended setting up, mechanisms for the initial education of nurses at the university level (CUP, 1999). Examples include Australia, the United States, Spain, Portugal, Mexico, Thailand, Israel and the United Kingdom. In the United States, the National Advisory Council on Nurse Education and Practice, which is an advisory board of the Division of Nursing of the United States Department of Health and Human Services, is planning that in the year 2010 two thirds of working nurses will hold a Bachelor's degree. In Canada, the university programs offered to nurses increased incrementally and rapidly from 8 in 1942 to 58 in 1999. In May 1996, the World Health Assembly, the decision-making body of the WHO, called for advanced education for nurses, who constitute the most numerous health care professionals in the world.

According to the NNCP (1997), greater skills will be required from all categories of nurses in care provided to the individual, the family, the group and the community; in the care provided to clients in an unstable condition; in conducting research; in the use of information systems and new technology; in organisational methods, and in relation to collaborative and multiprofessional work. All nurses in the future will have to demonstrate a high degree of autonomy. They will have to quickly grasp the nature of a variety of caregiving situations and to carefully formulate clinical opinions, based on knowledge acquired from various disciplines.

#### **4.1.2-Graduate and post graduate studies**

Master's and doctoral programs vary from institution to institution (OIIQ, 1999; CNA, 1997, Pinelli, 1997; MEQ, 1996; RNANS & CPSNC, 1996; Manga & Campbell, 1991; MSSS, 1989b; Clermont, 1987). There are 18 Masters in Science of Nursing in Canada as reported by CAUSN (1998). In 1997, data from 16 of the 18 programs



reported that 373 students were enrolled in a MSc program (CAUSN, 1998). These programs aim to prepare students for clinical nursing specialties, nursing administration or nursing education (CAUSN, 1999a; 1999b) in fields such as family health, community health, perinatal, mental health care and psychiatry, child, teenager, adult and elderly care, ethics and care management. This type of program is meant to deepen knowledge and to develop specialised skills for an *Advanced Nursing Practice*. Such an advanced practice refers to advanced knowledge and clinical expertise in assessment, diagnosis, and health care management. The scope of practice includes health promotion, diseases and injury prevention, curative, rehabilitative and supportive services to individuals, families and communities (CAUSN, 1999b).

The CNA has a certification program which recognises 10 nursing specialties: Critical Care, Emergency, Gerontology, Nephrology, Neuroscience, Occupational Health, Oncology, Perinatal (new for 2000-to be confirmed), Perioperative and Psychiatric/Mental Health (CNA, 1999a). As of the summer of 1999, there was a total of 8,115 certified nurses, of whom only 160 had passed the certification exams in French (CNA, 1999, personal communication, November 18, 1999; see Table 14).

Many writers and organisations regard the advanced level of formal education, e.g. Master in Sciences of Nursing, as necessary to perform new and specialised roles (Baumann, O'Brien-Pallas & Butt, 1999; MSSS, 1999; Haines, 1993). However evaluative research on the contribution and effectiveness of such an advanced role in the Canadian context is lacking. The effectiveness of NP's seems better documented in the American and British literature (American Academy of Ambulatory Care; AIINB, 1998; OIIQ, 1998), including their contribution to the reduction of waiting times in emergency services, increased patient satisfaction, better utilisation of medical and nursing resources, increased staff morals, as well as better access to health services. Other advantages identified were better health education to the population, use of protocol of care, systematic care approach, and an increasing acceptance for consumers (RNANS & CPSNS, 1999; OIIQ, 1998).

There are 4 doctoral programs in Canada (Alberta, British Columbia, Quebec, and Ontario); there were 30 students enrolled in 1997 (CAUSN, 1998), but the numbers are increasing rapidly. For instance, there were only 5 PhD students in Quebec in 1995, and there were 26 in 1999. These doctoral programs aim at developing the research and

teaching capacities of their students, with a view to gradually build the specific theoretical foundations of nursing knowledge (CAUSN, 1999a; Omery, Kasper & Page, 1995; Dupéré, Voyer, Zanchetta & Parisien, 1998; Meleis, 1991). CUP (1999) recommends also that post-doctoral training, of two to three years, be made available.

#### **4.1.3-Continuing education**

Nurses are increasingly demanding additional education (Cannon, Paulanka & Bearn, 1994). A variety of formulas are offered, among which individual courses, diploma programs, professional development education sessions, activities to upgrade technical skills (Earl & Chard, 1993).

University diploma in gerontology, paediatrics, community health, and clinical practice are offered in many provinces. Among the various choices offered by the universities, pre-graduate certificates are seen as knowledge-updating strategies, or as the first stage of a bachelor's program. In Quebec, a wide range of choices is available including a job re-entry program for nurses educated abroad, and a program to update the skills of nurses who have not worked in the field for some years. Colleges also award certificates upon completion of short-duration education in specific fields.

In-service education in practical settings appears to be a favoured way of avoiding deficiencies in education, especially during times of financial constraint. According to Ofosu (1997), college-educate nurses, and RNs who have completed their education long ago, seem more committed to such programs.

According to White et al (1998), factors related to the needs to collaborate have prompted RNs and LPNs to join continuing education programs in acute care settings. These were: compensation for time devoted to education, access to audio-visual material as an educational aid, the opportunity to transfer their experience to colleagues, the credibility of the instructor, and acknowledgement of their education by peers and superiors.

Continuing education also takes the form of in-service training. Ciliska *et al* (1999) recommend the use of the results of nursing research in the planning and management of services; research is then perceived as an education tool to support the work of planners and caregivers. The numerous changes in the health care system call for a constant updating and refinement of skills. The application of research results to

care and services creates a good learning environment. Consequently, Chambers, Hoey, & Underwood (1998) suggest a close partnership between academic circles and clinics. When such partnerships are created, the application of new knowledge to clinical practices creates an environment in which knowledge is converted into know-how. Research enables re-orienting, modifying and enriching health practices and clinical diagnosis, aligning services and needs more closely and influences policy formulation. The better the links between research and care, the more effective is the education.

#### **4.2-Competencies and roles**

The issue of competencies refers to how education programs prepare the professionals to play the roles expected of them. McKay (1995) conducted a literature review showing the importance of education and disciplinary paradigms, attitudes, expectations, and services approach in the process of adapting to the changing roles of health care providers in the Canadian context. Collaboration and dialogue between professionals, organisations, education institutions, employers, and policy makers are necessary to adequately transform roles, settings, and attitudes. Also political commitment, administrative support and outcome evaluation are necessary elements in this process.

McKay (1995) states that post graduate education must be offered to the current practitioners to promote their new roles in health care teams. Management of health staffing is challenged to create a supportive environment to improve productivity and retention. Buchan (1994) claimed that nothing is more expensive than investing financial resources to educate people and then not offering the supportive conditions to develop their potentialities and stay in the job market.

The current changes in the health care system affect the traditional mandate, values and roles of nurse, and consequently their education needs. The nature of educational contents and of competencies to be acquired should respond to the expectations of new. Nurses' roles are continuously in evolution and transformation (CUP, 1999), and polyvalence, autonomy, knowledge, accountability, technical expertise are some of the necessary features to perform well and efficiently in different settings.

MacKay (1995) has identified the factors that are critical to the process of adapting to changing roles in the field of nursing. These include: changes in the respective roles of RNs and LPNs; differences in role expectations according to the work setting; the unwillingness to consider an expanded role for LPNs; the debate on expanding the role of RNs to incorporate traditional physician tasks; scepticism regarding the necessary multiskills, as it is believed to undermine the aims and essential values of nursing; the lack of consensus between professionals and health support workers regarding interdependence, independence, assistance; the lack of empirical support as to the effectiveness of the various staff mix and substitution models; and conflicts between nursing and medical literature in the definition of the preferred entry point to the system.

Canadian nurses have made considerable efforts to define the competencies they should have. The NNCP (1997) tried to define the entry-level competencies of LPNs, RNs and RPNs in 1996 and to project them to 2001. This project however has major limitations, such as its small sample (N=131 participants) representing the whole country, the complexity of the questionnaire used, and a lack of specificity. The authors themselves stated that "the results are not prescriptive and should not be used as firm statements about practice requirements" (p. 34). The working group advocate that entry-level competencies, listed below should be at the minimal foundation of nursing education curricula. The document, on the other hand, states that these competencies should be regarded only as desirable educational outcomes, not as practice standards, which should be defined by regulatory bodies.

These entry-level competencies have received 95% or more agreement among the survey's participants:

- To demonstrate attitudes which contribute to effective partnerships with clients;
- To provide care that demonstrates sensitivity to client diversity
- To form partnerships with clients to achieve mutually agreed health outcomes;
- To promote individuals' rights and responsibilities;
- To practice in harmony with professional standards of the regulatory bodies
- To accept accountability for own actions and decisions;

- To recognise limitations of own competence and seek assistance accordingly;
- To be committed to the primary purpose of the professional nurse, which is to serve the public;
- To use the techniques of observation and interviewing to collect data;
- To support and protect clients experiencing self-protection difficulties;
- To distinguish normal social interaction and therapeutical communication;
- To assure a caring environment supporting individuals to achieve health outcomes;
- To maintain clear, concise, accurate and timely records of clients' care;
- To recognise and report potentially unsafe situations for health team members;

This document guided the survey about the entry-level competencies of LPNs in British Columbia (HMRG, 1998) that highlights the necessity of discussing competencies related to the context of practice. There are discrepancies between the consensual results from the NNCP's and the HMRG's as regards: autonomy of providers, family oriented actions and interventions, a continuous assessment of competence related to knowledge, skills, attitudes and judgement, search of opportunities for professional growth, openness to new ideas, accountability of understanding of the health care agency. The RNABC (1999b) is conducting a survey on a discussion paper, "Profile of the practice of new registered nurses graduates", with the aim of defining the entry level of competencies of RNs in British Columbia. Examples of other surveys and studies on competencies were those conducted by CPNA (1999), RNABC (1998), RNANS (1998) and other associations.

Entry-level and advanced competencies of LPNs are also under study in many provinces such as Alberta (CLPNA, 1998). Ontario, British Columbia, Newfoundland, and Nova Scotia use competencies shaped in the NNCP (1997) to determine the entry-level competencies of LPNs (CNO, 1999). Prince Edward Island, Quebec, New Brunswick, Northwest Territories and Yukon remain with the basic programs based upon their own standards (CNO, 1999). The NNCO (1997) will support also the new LPN examination to be introduced in August 2001 in Ontario by CNO (CNO, 1999).

Also, CAUSN (1999c), has developed a “National Nursing Informatics Project”, to study the potential for Nursing Informatics to enhance nursing practice, the development of new knowledge, and of the culture of using information technologies. CAUSN produced a discussion paper, which is circulated for feedback to stakeholders in national organisations, educational institutions and employers.

#### **4.3-Nursing models of practice**

Nursing has developed in relation to key trends in the evolution of scientific knowledge and in the past decades, the central concepts of nursing discipline have been clarified. The diversity of nursing situations, the complex changes in the family, new features of ethical decision-making, knowledge and technological evolution, as well as increasing the diversity of clinical settings have shaped the refinement of theoretical, conceptual and organisational models of nursing practice. Models of nursing practice--e.g. patient focused, shared governance, primary nursing, advanced practice, case management, professional nursing practice, and community approach--may provide some tools to the profession to deal with the demands of the Canadian health care system. Usually, these models favour approaches of collaborative and complementary roles for the nursing personnel.

The *Patient Focused Model* aims at maintaining the quality and continuity of nursing care of patients, while decreasing the costs of care by reducing the size and composition of the nursing staff (Aiken, 1997). Nursing intensity, costs, environmental complexity, medical condition and severity, patient-nursing needs complexity, and nurses’ characteristics are the key variables. The reduction of staff quotas and the use of informal caregivers into the staff mix have raised concerns by RNs that quality care is being sacrificed. A gap exists in evaluative studies on patient and nursing outcomes, and related costs with nursing structures, processes and educational requirements (Pierce, 1997).

The *Shared Governance Model* attempts to redress the sense of powerlessness among nurses in the workplace. Shared governance refers to an organisational arrangement which increases the participation of nurses in decisions about work and the workplace, and about job related activities (Kennerly, 1996). Shared governance is thought to improve worker performance, job satisfaction, patient satisfaction, and staff

turnover (McDonough, 1990). The serious limitation is the focus on managerial aspects of work instead of the professional accountability for clinical practice, as the basis for greater professional autonomy.

The *Primary Nursing Model* promotes continuity of patient care and accountability for nursing practice in tertiary care settings. The model lacks a theoretical and substantive base for practice to define nurse sensitive patient outcomes. A literature gap exists on evaluative studies, mainly on the cost effectiveness of primary nursing practice and appropriate nurse staffing mix in a function of the patient profile.

*Advanced Practice Models* integrate the contribution of the CNSs and the NPs, though the boundaries between the two roles are blurred; NPs seem to be more involved in direct practice (Williams & Valdivieso, 1994). Nurses in advanced practice work as a hospital based educators, administrators, clinical experts to patients and families and educational leaders to staff nurses.

*Case Management Models* assume increased authority, responsibility, and accountability. The modalities of managing health care include the basic co-ordination of health care services within the hospital or community sector, the co-ordination and delivery of comprehensive cost-effective services (Shapiro, 1995) and self-managed care by an active participation of clients in their own care (Shamian et al, 1997). These models appear to fit with the necessary continuum of integrated care (Shamian et al, 1997). Again, there is a gap in the literature regarding the models' outcomes, the impact on the work environment, the importance of patient profile, the distribution of clinical responsibilities within the interdisciplinary team, case management programs in specialities, and about necessary scientific knowledge and clinical skills of nurse managers.

The *Professional nurse practice model* is an attempt to respond to the higher complexity of patient care (Aiken & Salmon, 1994), and to the necessity of developing and testing professional models (Aiken, 1997). This model is applied by “magnet” hospitals (Havens & Aiken, 1999) which employs only RN staff with clinical expertise in specialities, an increased ratio of RN and patient, a flattened organisational structure, a shared governance model, flexible nursing care and nursing representation on the highest decision-making body of the hospital. In these hospitals, it seems that there is increased work satisfaction and perceived autonomy, reduced job turnover and vacancy

rates, as well as reduced patient mortality rates with higher patient satisfaction (Kramer & Schmalenberg, 1991; Kramer, 1990).

Finally, *Community Nursing Models* refer to offering nursing care in conformity with primary health care principles: continuity of care, promoting and maintaining health, preventing illness, a collaborative approach to working with individuals, families and communities (Grossman & Hooton, 1993). According to Cloutier-Laffrey & Craig, (1995), this model delineates four levels of clients, i.e., the individual, family, other aggregates, and the community, and three levels of care, i.e., illness care, illness prevention, and health promotion. The focus is on a proactive community approach to reducing costs and enhancing well being (Browne et al, 1995), as well as building collective capacity in community-based programs (Moyer, Coristine, McLean & Myer, 1999). For the past 4 years, McGill University's School of Nursing and teaching hospitals and communities (CLSC's) have worked to develop an Academic Model of Nursing Practice based on the McGill Model of Nursing through a formal partnership between university and clinical settings; clinical learning environments for students and staff since teaching and learning are integral components of clinical practice (Grossman, 1999a).

Canadian nursing is thus grappling with the need for a vision that reflects a distinctly nursing perspective, that is a body of shared or overlapping scientific knowledge applied from a nursing perspective (RNABC & BCNU, 1999; Smith, 1995; Davies & Hughes, 1995). The new models, which are attempts at redefining nursing practice, should be better investigated to ensure the effective contribution of the different professional categories of nurses and the nursing discipline to the Canadian health system. More empirical evidence is needed to really pass a judgement on these models: do they respond to the workplace and nurses' expectations of improved work productivity, job satisfaction, turnover, absenteeism (Medcoff & Wall 1990). Which patient outcomes do they produce (Maas, Johnson & Moorhead, 1996)? What is their contribution to the achievement of the objectives of the health care system? What is their cost-benefits ratio? How do they fit with changes occurring in other health professions, which play a role complementary to that of nursing (Gagnola & Stone, 1997)?



#### **4.4-Integrated initiatives for developing the nursing workforce**

In addition to changes in education programs and to the development of new models of practice, a number of initiatives have been taken by nursing groups and associations, and by governments to address the issue of the development of nursing workforce. These integrated initiatives were identified by the IHHRDP (1996; 1995) as the following:

- Approbation of regulation of midwives and the development of new legislation for community NP;
- Proposals of alternative payment mechanisms and models;
- Proposals for an education program as well as an advanced nursing practice for RN providing extended services;
- A multi-faceted media campaign for educating the public on the role of the RN;
- A demonstration project of primary nursing care as an entry point to the existing health system;
- Development of a Committee on Nursing Human Resources and Education Planning and implementation of an education approval program;
- Pilot projects of Tele-care, a telephone triage system, staffed by nurses, available prior the consultation in an emergency unit;
- A campaign for the implementation of a comprehensive breast cancer screening clinic and better utilisation of nursing resources;
- Shared responsibilities between a provincial Ministry of Health and nursing organisations regarding public education on the role of RNs.

#### **4.5-Future tasks**

Finally, the literature identifies many “future tasks”, which remain to be done to demonstrate that the resources developed by the nursing profession represent lasting solutions. Here, they are regrouped in the categories of education and organisational environment, research and health policies related tasks:

I- Education and organisational environment

- To create learning and care environments that permit transfer of new knowledge to practice settings (Chambers, Hoey & Underwood, 1998);

- To promote continuing education to enable nurses to perform under the uncertainties of the transformation of the health care system, and of nurses' roles and responsibilities (OIIQ, 1999; Rafael, 1999; Chalmers, Bramadat & Andrusyszyn, 1998; Ryan, Blythe & Pollex, 1998);
- To reinforce links of intra and interdisciplinary collaboration to enhance communication, confidence, respect as well as administrative support (McKay, 1995);
- To establish closer relations with primary health teams to mobilise communities and to learn to care more acute cases in the communities (Chalmers, Bramadat & Andrusyszyn, 1998); and
- To develop nursing policies on at-risk, high acuity, and high needs population within the community (Chalmers, Bramadat & Andrusyszyn, 1998).

## II- Research

- To use research results to redefine strategies of recruitment and retention;
- To use the research capabilities to transfer knowledge to practice and teaching;
- To increase nursing research on the priority themes such as ageing population, impact of deteriorating environment, trends and issues impacting nurses, quality of mental health care and self-help groups, technologically *versus* economically feasible treatment, privatisation of health care, globalisation of the economy, poverty, accommodation of cultural differences and health care needs, contemporary family, access to information, accuracy and credibility of sources of health information, as well as keeping up with technology and information (CNA, 1999b);
- To evaluate organisational models of nursing practice in relation to their central concepts, factors and predicted outcomes (Lendrum, 1999); and
- To demonstrate nursing relevance, accountability, uniqueness, capacity of innovating, competencies and excellence (Gottlieb & Gottlieb, 1998);

## III- Health Policies

- To acknowledge the mission of nurses, their specific educational background, technical expertise and essential contribution to the health care system;

- To increase political participation of nurses in practice and academia to influence the new proposals of health oriented policies (Tamlyn & Myrick, 1995), professional legislation, and funding system of the nursing professional services (Haines, 1993);
- To identify strategies to use high technology to support continuing education for nurses in remote regions;
- To develop strategies amongst nation-wide educational institutions to ensure quality and accessibility to education for nurses from minority groups (ANAC, 1999); and
- To develop theoretical and empirical models to support the practice of nurses working with the immigrant population, and to adapt to its cultural diversity (Nadeau, 1994).

## **5- Conclusion**

The current situation of nursing labour is described in the literature as problematic in many a way:

- There is a lack of systematic planning of human resources in the health care system, which impacts on all occupations, but affects nurses in a particular way, since they make up the majority of health care professionals. The nursing workforce seems to move from oversupplies to shortages, which provokes reactions, but little pro-action.
- Education is an issue: it has to be adapted to new needs. But there is no consensus on how to achieve this, nor on what is the role of each level of education in the production of the nursing workforce.
- Working conditions are said to generate much dissatisfaction, which in turns creates recruitment and retention problems. This has particularly serious consequences at a time of shortage, such as is the case at present.

Numerous strategies have been proposed in the literature to respond to current challenge and dilemmas faces by nursing labour.

### Planning the workforce

Moore (1996) has underlined the importance of implementing a systematic workforce planning system in nursing. This system must be based on more valid and

rigorous data than is available now, that is data on the whole of the workforce, as well as on nursing labour needs. In the same vein, some authors stressed the need for developing competency analysis, as a strategy to assess needs (Carefoot, 1998; Bourgeault, 1997). Such analysis cannot be done independently of the discussion of the various the models of practice that will be implemented, nor of the profile of the population targeted. The analysis of competencies will also impact on education needs, both at the basic and at the post-basic levels.

Indeed, models of nursing refer to different sets of practices. For instance, the case management model requires from nurses' skills and competencies in the coordination and planning of care. A more participatory model of nursing changes the position of nurses in a given managerial or organisational hierarchy. Most models have not been systematically defined and empirically assessed to determine their potential in making the utilisation of the nursing workforce more effective, or more efficient. Their impact on the role assigned to other providers of care is not clear either.

#### Reforming education

As is the case for other categories of health personnel, the capabilities of nursing labour to respond to current challenges in the field of practice, are largely determined by the content of basic education programs and by the availability of resources and activities to update knowledge, skills afterwards. Any planning exercise of the nursing workforce must consider the type of education required by the role of the various categories of nurses are expected to play in the health care system. Again, more knowledge is needed to establish priorities among different models of practices in order to assess their impact on current education program and on continuing education.

#### Making working conditions more attractive

Many authors stress the need to improve the working conditions of nurses and to develop more stimulating career patterns and perspectives. Better working conditions include the implementation of a more participatory type of management, of more flexibility of working schedules, and an improvement of normative conditions (Andrews, 1991; Angus, 1991). It is expected that improved working conditions will not be sufficient to increase the attractiveness of the profession, and that innovative

recruiting strategies are also needed (ANEMT, 1991). To support the process of adapting nursing labour to new contingencies, increasing the scope and accessibility to continuing education has also been suggested (Chambers, Hoey & Underwood, 1998; Ofosu, 1997).

The adaptation of nursing labour to current transformations in the health care system may also pass by the development of models of practices oriented toward community needs and by a consolidation of the scientific basis of nursing practices (Moyer, Coristine, McLean & Myer, 1999, Leipert, 1996; Davies & Huge, 1995; Kirkham, 1998 among others). This demand for a stronger systematisation of nursing practices may be part of a larger trend in health care for more evidenced-based practices (National Health Forum, 1997). It has been suggested that a greater involvement of nurses in the formulation of health policy would help in responding to the challenges the profession is facing (Tamlyn & Myrick 1995). Such involvement to be effective must be based on a strong coalition between practitioners and academics in nursing.

These proposed solutions coincide with proposals made by the Canadian Nurses Association (1998) for RNs, which include: effective recruitment strategies; improvement of working conditions, including “family friendly” policies; better adaptation of education programs to practice needs; a systematisation of nursing practices; promotion of the autonomy of nurses; mechanisms for career advancement. It seems clear that the problems faced by nursing are interdependent and that solutions also are; this suggests that their implementation may require much co-ordination and harmonisation and take into account the role of nurses in relation to the other providers in the delivery of care.

### **Gaps in the literature**

Finally, we conclude this report by listing what appears to be lesser known dimensions or aspects of the nursing labour market. Our hypothesis, is that having access to more knowledge on these dimensions would strengthen the policy-making process:

- The data on LPNs and on psychiatric nurses is fragmentary and incomplete. Little is known about their demographic and professional characteristics. Data are not available about all provinces, and inter-provincial comparisons are not easy.

Statistics Canada has no specific occupational category for LPNs, who are amalgamated with other occupations, such as orderlies, aides, etc.

- The data on RNs are more complete, but there are gaps, as regards the professional characteristics of RNs: professional trajectories, specialties, productivity, contents of work (time devoted to clinical, administrative work, to continuing education).
- The mobility of nurses between provinces, out of the country, or out of the profession, is not well documented, nor is the phenomenon of immigration.
- The information on the capacity of nursing to attract new recruits, on attrition of students, on entrance into practice is not complete, which makes it difficult to estimate the potential impact of workforce policies.
- More needs to be known about nursing services to populations in regions of less easy access; Aboriginal communities are particularly affected by nursing staff shortage.
- More information is needed on the practice of nursing in community, home care, and long-term care settings.
- A better assessment of the factors that influence the demand for nursing services is needed. What is the impact of technological and organisational change, of the ageing of the population, of changes in the expectations of consumers, etc?
- The impact of the various models of practice, proposed in the literature and implemented in a variety of environments, on the nursing labour market needs to be better documented. How each of the models generates needs for more of some category of staff, or diminishes such needs? What new education needs each model implies? How these models impact on the work of other providers? For instance, how the introduction of advanced clinical specialists in nursing impacts on the work of physicians and of other health professionals?
- The same applies to the various models of services' delivery, such as those based on primary care, on integration of services.
- The capacity of the various education programs, particularly the MSc programs, to prepare nursing personnel to play their new roles, is not well known.
- The research agenda to consolidate the scientific basis of nursing needs further elaboration.

- The incentives, such as those that seem to be present in the magnet hospitals, which improve the capacity to attract and to retain nursing personnel, should be further investigated.
- The policies of the various governments, with respect to the future of nursing as an occupation, and with the organisation of nursing services, are not enough studied.
- The variations in the legal and regulatory framework that defines the conditions of practice of nursing is not well documented and analysed.

In sum, even though nurses represent, by far, the most important occupation in numerical terms in the health sector, information on the composition of the profession, on the professional characteristics of its members, on their work, remains incomplete. This also applies to knowledge about working conditions, and how nurses perceive them. As a result, the planning of nursing services becomes difficult. In fact, it is probable that the lack of data is rather a consequence of the absence of planning of the nursing workforce, than the reverse. In a context in which the traditional ways of organizing health care are being questioned, the need to better understand the nursing market and the dynamics of its evolution is imperative. It is a complex task, which requires that a valid and complete picture of the profession is produced, and that mechanisms to monitor its evolution are created. Decision-makers and planners, both at the profession and at the health care system levels, can only benefit from valid information on an occupation which plays a critical role in the production of care.

## **Tables**



**Table 1: Number of Registered Nurses By Activity Status (a), By Province of Employment or by Province of Residence (b), Canada,1982-1998 (c)**

Provinces	1982		1987		1992		1998	
	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)
<b>Newfoundland</b>								
<i>Employed in Nursing</i>	4 111	100,0	4 287	93,4	4 953	94,2	5 340	97,9
<i>Not Employed in Nursing</i>	0	0,0	301	6,6	307	5,8	116	2,1
<i>Sub-total</i>	4 111	100,0	4 588	100,0	5 260	100,0	5 456	100,0
<i>Not stated</i>	96	--	2	--	1	--	0	--
<i>Total</i>	4 207	--	4 590	--	5 261	--	5 456	--
<b>Prince Edward Island</b>								
<i>Employed in Nursing</i>	780	96,8	1 079	93,9	1 246	97,3	1 277	95,7
<i>Not Employed in Nursing</i>	26	3,2	70	6,1	35	2,7	58	4,3
<i>Sub-total</i>	806	100,0	1 149	100,0	1 281	100,0	1 335	100,0
<i>Not stated</i>	83	--	1	--	8	--	17	--
<i>Total</i>	889	--	1 150	--	1 289	--	1 352	--
<b>Nova Scotia</b>								
<i>Employed in Nursing</i>	6 952	94,4	8 343	93,4	9 128	95,3	8 525	96,2
<i>Not Employed in Nursing</i>	415	5,6	587	6,6	452	4,7	340	3,8
<i>Sub-total</i>	7 367	100,0	8 930	100,0	9 580	100,0	8 865	100,0
<i>Not stated</i>	1	--	3	--	5	--	0	--
<i>Total</i>	7 368	--	8 933	--	9 585	--	8 865	--
<b>New Brunswick</b>								
<i>Employed in Nursing</i>	4 471	91,3	6 289	92,1	7 349	96,8	7 456	94,0
<i>Not Employed in Nursing</i>	426	8,7	540	7,9	240	3,2	475	6,0
<i>Sub-total</i>	4 897	100,0	6 829	100,0	7 589	100,0	7 931	100,0
<i>Not stated</i>	836	--	70	--	606	--	21	--
<i>Total</i>	5 733	--	6 899	--	8 195	--	7 952	--
<b>Quebec</b>								
<i>Employed in Nursing</i>	44 709	91,8	52 808	92,5	57 330	97,4	56 825	100,0
<i>Not Employed in Nursing</i>	4 009	8,2	4 288	7,5	1 538	2,6	0	0,0
<i>Sub-total</i>	48 718	100,0	57 096	100,0	58 868	100,0	56 825	100,0
<i>Not stated</i>	3 719	--	630	--	3 341	--	6 819	--
<i>Total</i>	52 437	--	57 726	--	62 209	--	63 644	--
<b>Ontario</b>								
<i>Employed in Nursing</i>	55 452	69,7	78 734	85,9	86 413	86,2	78 825	85,6
<i>Not Employed in Nursing</i>	24 162	30,3	12 963	14,1	13 870	13,8	13 246	14,4
<i>Sub-total</i>	79 614	100,0	91 697	100,0	100 283	100,0	92 071	100,0
<i>Not stated</i>	7 478	--	4 606	--	2 402	--	3 359	--
<i>Total</i>	87 092	--	96 303	--	102 685	--	95 430	--
<b>Manitoba</b>								
<i>Employed in Nursing</i>	7 533	93,8	8 811	94,2	10 251	97,6	10 185	97,9
<i>Not Employed in Nursing</i>	502	6,2	539	5,8	255	2,4	220	2,1
<i>Sub-total</i>	8 035	100,0	9 350	100,0	10 506	100,0	10 405	100,0
<i>Not stated</i>	0	--	39	--	344	--	258	--
<i>Total</i>	8 035	--	9 389	--	10 850	--	10 663	--
<b>Saskatchewan</b>								
<i>Employed in Nursing</i>	7 189	96,2	8 329	97,3	8 698	96,8	8 455	97,5
<i>Not Employed in Nursing</i>	284	3,8	229	2,7	286	3,2	214	2,5
<i>Sub-total</i>	7 473	100,0	8 558	100,0	8 984	100,0	8 669	100,0
<i>Not stated</i>	72	--	47	--	134	--	4	--
<i>Total</i>	7 545	--	8 605	--	9 118	--	8 673	--

**Table 1: Number of Registered Nurses By Activity Status (a), By Province of Employment or by Province of Residence (b), Canada, 1982-1998 (c)**

Provinces	1982		1987		1992		1998	
	n	(%)	n	(%)	n	(%)	n	(%)
<b>Alberta</b>								
Employed in Nursing	15 108	89,9	19 593	89,8	21 461	90,8	21 988	96,3
Not Employed in Nursing	1 705	10,1	2 237	10,2	2 164	9,2	839	3,7
Sub-total	16 813	100,0	21 830	100,0	23 625	100,0	22 827	100,0
Not stated	1 140	--	147	--	312	--	370	--
Total	17 953	--	21 977	--	23 937	--	23 197	--
<b>British Columbia</b>								
Employed in Nursing	17 621	85,3	22 201	87,6	26 696	93,2	28 004	99,8
Not Employed in Nursing	3 044	14,7	3 137	12,4	1 941	6,8	60	0,2
Sub-total	20 665	100,0	25 338	100,0	28 637	100,0	28 064	100,0
Not stated	2 657	--	524	--	1 276	--	834	--
Total	23 322	--	25 862	--	29 913	--	28 898	--
<b>Yukon (d)</b>								
Employed in Nursing	--	--	--	--	--	--	241	95,6
Not Employed in Nursing	--	--	--	--	--	--	11	4,4
Sub-total	--	--	--	--	--	--	252	100,0
Not stated	--	--	--	--	--	--	0	--
Total	--	--	--	--	--	--	252	--
<b>N.W.T. (d)</b>								
Employed in Nursing	160	95,2	299	94,3	492	94,1	530	94,3
Not Employed in Nursing	8	4,8	18	5,7	31	5,9	32	5,7
Sub-total	168	100,0	317	100,0	523	100,0	562	100,0
Not stated	27	--	8	--	7	--	20	--
Total	195	--	325	--	530	--	582	--
<b>CANADA</b>								
Employed in Nursing	164 086	82,6	210 773	89,4	234 128	91,7	227 651	93,6
Not Employed in Nursing	34 581	17,4	24 909	10,6	21 119	8,3	15 611	6,4
Sub-total	198 667	100,0	235 682	100,0	255 247	100,0	243 262	100,0
Not stated	16 109	--	6 077	--	8 436	--	11 702	--
Total	214 776	--	241 759	--	263 683	--	254 964	--

Notes: (a) Inter-provincial duplicate registrations have been removed; the data refer to responses received from the registration form.

(b) The term "not employed in nursing" comprises nurses who are employed in other occupations, nurses who have left the workforce, and nurses who are unemployed. It excluded nurses whose employment status is not reported.

(c) Figures refer to only those nurses who registered in Canada during the first four months (three months in Quebec) of the registration renewal period. This fact, and editing with a simplified method for eliminating inter-provincial duplicates, hinder comparison with previous years. Numbers include only nurses registered in the same province as that in which they work or reside.

(d) Data for Yukon are not available before 1990. In 1992, data for Yukon and N.W.T. are combined.

Sources: 1982, 1987, 1992: Health Canada, 1995.  
1998: Canadian Institute for Health Information, preliminary data.

**Table 2: Number of Registered Nurses Employed in Nursing (a), Canada (b), by Province, 1982-1998 (c)**

Provinces	1982	1987	1992	1997	1998	Tx.	Tx.	Tx.	Tx.
						1982-1987 (%)	1987-1992 (%)	1992-1997 (%)	1997-1998 (%)
Newfoundland	4111	4287	4953	5210	5340	4,3	15,5	5,2	2,5
Prince Edward Island	780	1079	1246	1281	1277	38,3	15,5	2,8	-0,3
Nova Scotia	6952	8343	9128	8587	8525	20,0	9,4	-5,9	-0,7
New Brunswick	4471	6289	7349	7589	7456	40,7	16,9	3,3	-1,8
Quebec	44709	52808	57330	59160	56825	18,1	8,6	3,2	-3,9
Ontario	55452	78734	86413	78067	78825	42,0	9,8	-9,7	1,0
Manitoba	7533	8811	10251	10510	10185	17,0	16,3	2,5	-3,1
Saskatchewan	7189	8329	8698	8456	8455	15,9	4,4	-2,8	0,0
Alberta	15108	19593	21461	21428	21988	29,7	9,5	-0,2	2,6
British Columbia	17621	22201	26696	28974	28004	26,0	20,2	8,5	-3,3
Yukon (d)	145	155	--	252	241	6,9	--	--	-4,4
N.W.T. (d)	160	299	492	476	530	86,9	64,5	-3,3	11,3
<b>Canada (e)</b>	<b>164231</b>	<b>210928</b>	<b>234128</b>	<b>229990</b>	<b>227651</b>	<b>28,4</b>	<b>11,0</b>	<b>-1,8</b>	<b>-1,0</b>

Notes: (a) Inter-provincial duplicate registrations have been removed; the data refer to responses received from the registration form.

(b) The term "not employed in nursing" comprises nurses who are employed in other occupations, nurses who have left the workforce, and nurses who are unemployed. It excluded nurses whose employment statut is not reported. (c) Figures refer to only those nurses who registred in Canada during the first four months (three months in Quebec) of the registration renewal period. This fact, and editing with a simplified method for eliminating inter-provincial duplicates, hinder comparison with previous years. Numbers include only nurses registered in the same province as that in which they work or reside.

Sources. 1982, 1987, 1992: Health Canada, 1995.

1997 and 1998: Canadian Institute for Health Information, preliminary data.

**Table 3: Number of Licensed Practical Nurses, Canada, by Province of Licensure, 1982-1998**

Provinces	1982	1987	1992	1997	1998	Tx.	Tx.	Tx.	Tx.
						1982-1987	1987-1992	1992-1997	1997-1998
						(%)	(%)	(%)	(%)
Newfoundland (a)	1 940	2 379	2 817	2 838	2 797	22,6	18,4	0,7	-1,4
Prince Edward Island	487	523	630	617	631	7,4	20,5	-2,1	2,3
Nova Scotia	3 232	3 388	3 320	3 220		4,8	-2,0	-3,0	
New Brunswick (b)	2 187	2 172	2 334	2 517		-0,7	7,5	7,8	
Quebec (c)(d)	18 519	20 029	19 667	18 082	16 617	8,2	-1,8	-8,1	-8,1
Ontario	33 931	34 491	35 516	34 623		1,7	3,0	-2,5	
Manitoba (e)	3 676	3 877	3 657	2 488		5,5	-5,7	-32,0	
Saskatchewan	2 366	2 477	2 682	2 187		4,7	8,3	-18,5	
Alberta (f)	7 254	7 894	6 545	4 723	4 606	8,8	-17,1	-27,8	-2,5
British Columbia	7 554	6 189	6 390	5 385		-18,1	3,2	-15,7	
Yukon	61	67	56	74		9,8	-16,4	32,1	
N.W.T.	103	124	135	97		20,4	8,9	-28,1	
<b>CANADA</b>	<b>81 310</b>	<b>83 610</b>	<b>83 749</b>	<b>76 851</b>		<b>2,8</b>	<b>0,2</b>	<b>-8,2</b>	

Notes: (a) No licensure; these figures represent the number of active, fully qualified nursing assistants. (b) Includes approximately 359 inactive members in 1982; 326 in 1987; and 522 in 1992. (c) Fiscal year ending March 31 of Following year. (d) The profession of nursing assistant is a restricted profession but has no exclusive field of activity. It may be then that there are in Quebec some persons occupied with similar functions, without always using the title of nursing assistant and without being members of the corporation. (e) Include 521 inactive members in 1982; 357 in 1987; and 388 in 1992. (f) Commencing in 1991, practical nurses in Alberta years to qualify as "Licensed" therefore the data decrease significantly had to have logged a minimum.

Sources: 1982, 1987, 1992: Health Canada, 1995.

Québec in 1997 and 1998: Ordre des infirmières et infirmiers auxiliaires du Québec, Rapport annuel, 1998, 1999.

1997 and 1998: Canadian Institute for Health Information, preliminary data.

**Table 4: Population per Registered Nurses employed in Nursing in Canada, Canada, by Province of Employment, 1982-1998**

Provinces	1982	1987	1992	1997	1998	Tx.	Tx.	Tx.	Tx.
						1982-1987 (%)	1987-1992 (%)	1992-1997 (%)	1997-1998 (%)
<i>Newfoundland</i>	141	134	114	108	105	-5,0	-14,9	-5,1	-3,3
<i>Prince Edward Island</i>	160	120	105	107	108	-25,0	-12,5	2,0	1,0
<i>Nova Scotia</i>	125	108	101	110	112	-13,6	-6,5	9,3	1,2
<i>New Brunswick</i>	160	116	102	100	102	-27,5	-12,1	-1,6	1,9
<i>Quebec</i>	148	129	125	125	131	-12,8	-3,1	0,3	4,6
<i>Ontario</i>	163	124	124	146	147	-23,9	0,0	17,8	0,4
<i>Manitoba</i>	140	125	109	109	113	-10,7	-12,8	0,0	3,7
<i>Saskatchewan</i>	139	124	115	121	122	-10,8	-7,3	5,3	0,5
<i>Alberta</i>	158	125	123	133	132	-20,9	-1,6	8,0	-0,8
<i>British Columbia</i>	165	139	131	136	143	-15,8	-5,8	3,6	5,6
<i>Yukon (a)</i>	164	168	---	125	133	2,4	---	---	6,4
<i>N.W.T. (a)</i>	318	187	190	142	128	-41,2	1,6	-25,3	-9,9
<b>CANADA</b>	<b>154</b>	<b>127</b>	<b>122</b>	<b>132</b>	<b>134</b>	<b>-17,5</b>	<b>-3,9</b>	<b>7,9</b>	<b>2,1</b>

Notes: (a) In 1992, data for Yukon and N.W.T. are combined.

Sources: 1982, 1987, 1992: Health Canada, 1995.  
Table 2.  
Population in 1997 and 1998: Demography Division, Statistics Canada.

**Table 5: Population per Licensed Practical Nurses, Canada, by Province of Licensure, 1982-1998**

Provinces	1982	1987	1992	1997	1998	Tx.	Tx.	Tx.	Tx.
						1982-1987 (%)	1987-1992 (%)	1992-1997 (%)	1997-1998 (%)
<i>Newfoundland</i>	299	242	206	199	200	-19,1	-14,9	-3,6	0,6
<i>Prince Edward Island</i>	256	248	208	222	219	-3,1	-16,1	6,9	-1,6
<i>Nova Scotia</i>	268	265	278	294		-1,1	4,9	5,9	
<i>New Brunswick</i>	326	337	321	303		3,4	-4,7	-5,7	
<i>Quebec</i>	357	341	365	410	449	-4,5	7,0	12,4	9,3
<i>Ontario</i>	266	284	301	329		6,8	6,0	9,5	
<i>Manitoba</i>	287	284	304	460		-1,0	7,0	51,4	
<i>Saskatchewan</i>	422	417	374	468		-1,2	-10,3	25,1	
<i>Alberta</i>	330	310	404	603	629	-6,1	30,3	49,2	4,3
<i>British Columbia</i>	384	500	548	730		30,2	9,6	33,3	
<i>Yukon</i>	390	390	555	419		0,0	42,3	-24,5	
<i>N.W.T.</i>	493	450	462	696		-8,7	2,7	50,6	
<b>CANADA</b>	<b>312</b>	<b>319</b>	<b>341</b>	<b>394</b>		<b>2,2</b>	<b>6,9</b>	<b>15,6</b>	

Sources: 1982, 1987, 1992: Health Canada, 1995.

Table 3.

Population in 1997 and 1998: Demography Division, Statistics Canada.

**Table 6: Ratio of Registered Nurses employed in Nursing by Licensed Practical Nurses, Canada, by Province of Licensure, 1982-1998**

Provinces	1982	1987	1992	1997	1998
<i>Newfoundland</i>	2,1	1,8	1,8	1,8	1,9
<i>Prince Edward Island</i>	1,6	2,1	2,0	2,1	2,0
<i>Nova Scotia</i>	2,2	2,5	2,7	2,7	
<i>New Brunswick</i>	2,0	2,9	2,9	3,0	
<i>Quebec</i>	2,4	2,6	2,9	3,3	3,4
<i>Ontario</i>	1,6	2,3	2,4	2,3	
<i>Manitoba</i>	2,0	2,3	2,8	4,2	
<i>Saskatchewan</i>	3,0	3,4	3,2	3,9	
<i>Alberta</i>	2,1	2,5	3,3	4,5	4,8
<i>British Columbia</i>	2,3	3,6	4,2	5,4	
<i>Yukon (a)</i>	2,4	2,3		3,4	
<i>N.W.T. (a)</i>	1,6	2,4	3,6	4,9	
<b>CANADA</b>	<b>2,0</b>	<b>2,5</b>	<b>2,8</b>	<b>3,0</b>	

Note: (a) In 1992, data for Yukon and N.W.T. are combined.

Sources: Tables 2 and 3.

**Table 7: Place of employment of Registered Nurses employed in nursing, Canada, 1985-1998**

Year	Hospital		Nursing home		Comm. health		Phys. office		Educ. inst		Other		Total
		(%)	Home for aged	(%)	Home care	(%)	Fam. pract.	(%)		(%)		(%)	
1985	145 159	74,7	13 020	6,7	18 370	9,5	5 203	2,7	5 396	2,8	7 213	3,7	<b>194 361</b>
1988	155 300	73,8	14 709	7,0	21 075	10,0	5 410	2,6	5 744	2,7	8 268	3,9	<b>210 506</b>
1991	165 298	72,6	18 006	7,9	20 402	9,0	5 934	2,6	6 017	2,6	12 032	5,3	<b>227 689</b>
1993	160 038	67,9	25 278	10,7	21 817	9,3	5 807	2,5	6 693	2,8	15 997	6,8	<b>235 630</b>
1996	148 647	65,2	28 178	12,4	23 661	10,4	5 763	2,5	5 611	2,5	15 970	7,0	<b>227 830</b>
1997	145 688	64,1	27 766	12,2	25 589	11,3	5 865	2,6	5 366	2,4	17 073	7,5	<b>227 347</b>
1998	142 043	63,2	26 987	12,0	26 194	11,7	5 881	2,6	5 007	2,2	18 492	8,2	<b>224 604</b>

*Notes: The data reported by Statistics Canada were adjusted as follow:  
Quebec numbers for 1991 were estimated by interpolation of numbers reported for Quebec in 1990 and 1992.  
Data in the "other" category included nursing working in business/industry, private nursing, self-employed, association/government and a residual other category. Not reported data for Quebec in 1996 were re-allocated in proportion to the reported data. All remaining not reported data were allocated to workplace in proportion to the reported data The data not stated are excluded.*

*Sources: Health Canada.  
1997 and 1998: Canadian Institute for Health Information, preliminary data.  
1992 to 1996: Ryten, 1997.*



**Table 8: Number of Registered Nurses in Canada, Employed in Nursing, Full-time and Part-time Canada, by Province of Employment, 1982-1998 (a)**

<i>Provinces</i>	1982	(%)	1987	(%)	1992	(%)	1998	(%)
<b>Newfoundland</b>								
<i>Full-time</i>	2 663	76,7	2 977	81,9	3 488	68,9	3 149	59,1
<i>Part-time</i>	808	23,3	658	18,1	1 576	31,1	2 180	40,9
<i>Total</i>	3 471	100,0	3 635	100,0	5 064	100,0	5 329	100,0
<b>Prince Edward Island</b>								
<i>Full-time</i>	362	58,4	516	47,8	566	46,0	543	52,2
<i>Part-time</i>	258	41,6	563	52,2	664	54,0	497	47,8
<i>Total</i>	620	100,0	1 079	100,0	1 230	100,0	1 040	100,0
<b>Nova Scotia</b>								
<i>Full-time</i>	4 780	68,8	5 326	63,8	5 873	64,3	5 061	59,4
<i>Part-time</i>	2 171	31,2	3 017	36,2	3 255	35,7	3 464	40,6
<i>Total</i>	6 951	100,0	8 343	100,0	9 128	100,0	8 525	100,0
<b>New Brunswick</b>								
<i>Full-time</i>	2 164	65,2	3 785	73,4	4 544	71,7	4 031	54,1
<i>Part-time</i>	1 156	34,8	1 374	26,6	1 794	28,3	3 425	45,9
<i>Total</i>	3 320	100,0	5 159	100,0	6 338	100,0	7 456	100,0
<b>Quebec</b>								
<i>Full-time</i>	27 061	61,7	19 265	56,3	31 572	59,5	27 322	48,1
<i>Part-time</i>	16 790	38,3	14 944	43,7	21 468	40,5	29 503	51,9
<i>Total</i>	43 851	100,0	34 209	100,0	53 040	100,0	56 825	100,0
<b>Ontario</b>								
<i>Full-time</i>	32 801	62,0	50 951	64,7	57 994	67,1	41 238	52,3
<i>Part-time</i>	20 131	38,0	27 783	35,3	28 419	32,9	37 587	47,7
<i>Total</i>	52 932	100,0	78 734	100,0	86 413	100,0	78 825	100,0
<b>Manitoba</b>								
<i>Full-time</i>	4 494	60,1	7 567	89,0	5 099	54,9	4 367	47,9
<i>Part-time</i>	2 979	39,9	935	11,0	4 186	45,1	4 754	52,1
<i>Total</i>	7 473	100,0	8 502	100,0	9 285	100,0	9 121	100,0
<b>Saskatchewan</b>								
<i>Full-time</i>	3 819	56,0	4 283	53,6	3 604	56,2	3 913	56,6
<i>Part-time</i>	3 006	44,0	3 711	46,4	2 809	43,8	2 997	43,4
<i>Total</i>	6 825	100,0	7 994	100,0	6 413	100,0	6 910	100,0
<b>Alberta</b>								
<i>Full-time</i>	8 848	63,9	10 697	54,6	15 073	70,2	12 089	55,0
<i>Part-time</i>	4 996	36,1	8 896	45,4	6 388	29,8	9 899	45,0
<i>Total</i>	13 844	100,0	19 593	100,0	21 461	100,0	21 988	100,0
<b>British Columbia</b>								
<i>Full-time</i>	10 565	63,3	12 994	61,7	14 907	59,9	13 494	49,0
<i>Part-time</i>	6 117	36,7	8 050	38,3	9 987	40,1	14 042	51,0
<i>Total</i>	16 682	100,0	21 044	100,0	24 894	100,0	27 536	100,0
<b>Yukon (c)</b>								
<i>Full-time</i>	92	70,8	112	75,7	(b)	-	131	54,4
<i>Part-time</i>	38	29,2	36	24,3	(b)	-	110	45,6
<i>Total</i>	130	100,0	148	100,0	(b)	-	241	100,0

**Table 8: Number of Registered Nurses in Canada, Employed in Nursing, Full-time and Part-time Canada, by Province of Employment, 1982-1998 (a)**

<i>Provinces</i>	1982		1987		1992		1998	
		(%)		(%)		(%)		(%)
<b>North West Territory</b>								
<i>Full-time</i>	104	76,5	232	84,1	357	81,9	225	80,6
<i>Part-time</i>	32	23,5	44	15,9	79	18,1	54	19,4
<i>Total</i>	136	100,0	276	100,0	436	100,0	279	100,0
<b>CANADA</b>								
<i>Full-time</i>	97 753	62,6	118 705	62,9	143 077	64,0	115 563	51,6
<i>Part-time</i>	58 482	37,4	70 011	37,1	80 625	36,0	108 512	48,4
<i>Total</i>	156 235	100,0	188 716	100,0	223 702	100,0	224 075	100,0

*Notes: (a) Nurses employed in nursing include all who are involved in direct patient, administration, teaching, and research where professional training in nursing they exclude the not stated is required. Those working in other than nursing are excluded. Until 1983, respondents who reported working 35 hours or more per week were described as full-time and those working less than 35 hours were shown as part-time. Beginning in 1984, respondents who checked the box indicating full-time are considered full-time and those who checked part-time are considered part-time, regardless of how many hours they indicated that they worked.*

*(b) Commencing in 1991, data for Yukon and N.W.T. are combined.*

*(c) No licences were issued by Yukon, therefore nurses working in Yukon are registered in other jurisdictions.*

*Sources 1982, 1987, 1992: Health Canada, 1995.*

*1998: Statistics Canada, 1999.*

**Table 9: Registered Nurses Employed in Nursing in Canada by place of Employment, Full-time or Part-time Status, Multiple Employment and Province Registration Canada 1998**

Provinces	Canada	Nfld.	P.E.I.	N.E.	N.B.	Que	Ont.	Man	Sask.	Alb.	B.C.	Yukon	N.W.T.
<b>Total</b>													
<i>Total</i>	227 651	5 340	1 277	8 525	7 456	56 825	78 825	10 185	8 455	21 988	28 004	241	530
<i>Single employment</i>	173 808	4 970	-	7 646	-	47 282	57 330	8 627	6 540	18 192	22 787	209	225
<i>Multiple employment</i>	32 288	329	-	879	-	8 108	10 435	1 558	1 898	3 796	5 217	32	36
<i>Not stated</i>	21 555	41	1 277		7 456	1 435	11 060	-	17	-	-	-	269
<b>Full-time</b>													
<i>Total</i>	115 563	3 149	543	5 061	4 031	27 322	41 238	4 367	3 913	12 089	13 494	131	225
<i>Single employment</i>	93 992	3 049	-	4 758	-	24 007	32 234	3 970	3 537	10 056	12 121	114	146
<i>Multiple employment</i>	10 562	91	-	303	-	2 519	3 460	397	363	2 033	1 373	17	6
<i>Not stated</i>	11 009	9	543	-	4 031	796	5 544	-	13	-	-	-	73
<b>Part-time</b>													
<i>Total</i>	108 512	2 180	497	3 464	3 425	29 503	37 587	4 754	2 997	9 899	14 042	110	54
<i>Single employment</i>	77 768	1 913	-	2 888	-	23 275	25 096	3 929	2 109	8 136	10 299	95	28
<i>Multiple employment</i>	20 620	238	-	576	-	5 586	6 975	825	887	1 763	3 743	15	12
<i>Not stated</i>	10 124	29	497		3 425	642	5 516	-	1	-	-	-	14
<b>Not stated</b>													
<i>Total</i>	4 376	11	237	-	-	-	-	1 064	1 545	-	468	-	251
<i>Single employment</i>	2 848	8	-	-	-	-	-	728	894	-	367	-	51
<i>Multiple employment</i>	1 103	-	-	-	-	-	-	336	648	-	101	-	18
<i>Not stated</i>	425	3	237	-	-	-	-		3	-	-	-	182

Sources: Statistics Canada, 1999.

**Table 10: Age of Registered Nurses employed in nursing, Canada, 1982-1998**

Year	<25	%	25-34	%	35-44	%	45-54	%	55 +	%	Total
1982	12 298	7,5	66 233	40,4	47 446	28,9	25 628	15,6	12 481	7,6	164 086
1985	11 428	5,9	69 987	36,0	63 173	32,5	33 930	17,5	15 843	8,2	194 361
1988	10 172	4,8	65 976	31,3	73 580	35,0	42 505	20,2	18 273	8,7	210 506
1991	8 065	3,5	64 146	28,2	81 441	35,8	52 688	23,1	21 349	9,4	227 689
1993	6 252	2,7	61 592	26,1	83 516	35,4	60 866	25,8	23 404	9,9	235 630
1996	4 139	1,8	53 334	23,4	78 546	34,5	67 137	29,5	24 674	10,8	227 830
1997	-	-	-	-	-	-	-	-	-	-	-
1998	4 435	1,9	47 754	21,0	75 844	33,3	73 275	32,2	26 278	11,5	227 651

Notes: (a) Inter-provincial duplicate registrations have been removed; the data refer to responses received from the registration form.

(b) The term "not employed in nursing" comprises nurses who are employed in other occupations, nurses who have left the workforce, and nurses who are unemployed. It excluded nurses whose employment status is not reported. (c) Figures refer to only those nurses who registered in Canada during the first four months (three months in Quebec) of the registration renewal period. This fact, and editing with a simplified method for eliminating inter-provincial duplicates, hinder comparison with previous years. Numbers include only nurses registered in the same province as that in which they work or reside.

Sources: 1992 to 1996: Ryten, 1997.  
1998: Canadian Institute for Health Information, preliminary data.  
Statistics Canada, 1999.

**Table 11: Nursing Graduates at Community College**

	Canada	Ontario	Quebec	Atlantic	Central	Alta	West
1975-76	8527	3215	2342	898	867	690	515
1976-77	8308	3143	2394	917	735	590	529
1977-78	7353	2341	2351	832	750	598	481
1978-79	6868	2005	2363	719	700	535	546
1979-80	6797	2073	2215	764	758	531	456
1980-81	6717	2165	1883	770	789	537	573
1981-82	6488	1917	1477	852	858	642	742
1982-83	6426	1746	1513	1001	924	539	703
1983-84	7151	2096	1809	959	1004	672	611
1984-85	7318	2511	1643	915	853	760	636
1985-86	7010	2415	1503	859	845	747	641
1986-87	7411	2538	1664	811	897	859	642
1987-88	7382	2390	1789	699	850	854	800
1988-89	7577	2425	1900	752	901	797	802
1989-90	7565	2252	2050	719	851	882	811
1990-91	7438	2539	1608	817	931	700	843
1991-92	7078	2153	1629	784	869	815	828
1992-93	7229	2476	1707	805	890	533	818
1993-94	6935	2500	1748	758	794	399	736
1994-95	6072	2599	1738	463	393	257	622
1995-96	5605	2342	1627	438	311	183	704
1996-97	4652	1745	1696	215	290	156	550

Source: Statistics Canada, Education, Culture & Tourism

**Table 12: Generic Baccalaureate student application, admissions offered, admission & graduations, regionally and nationally, 1985-1997**

<i>Provinces</i>	<i>1985</i>	<i>1987</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1997 (a)</i>
<b>ATLANTIC</b>										
<i>Applications</i>	863	854	764	721	923	897	1075	794	858	1282
<i>Admissions offered</i>	262	478	303	272	362	437	491	454	499	798
<i>Admissions</i>	242	287	260	213	273	338	360	340	369	622
<i>Graduates</i>	178	224	179	213	188	186	213	186	185	226
<b>QUEBEC</b>										
<i>Applications</i>	1 133	674	812	703	1 034	842	437	956	1032	625
<i>Admissions offered</i>	414	141	292	354	571	551	382	403	453	392
<i>Admissions</i>	105	280	272	268	241	315	283	301	341	287
<i>Graduates</i>	236	191	206	189	201	248	198	199	206	241
<b>ONTARIO</b>										
<i>Applications</i>	5 019	4 784	4 251	3809	4 175	4 224	3770	3507	3590	2537
<i>Admissions offered</i>	1 159	1 187	1 740	1585	1 651	1 793	1743	1593	1601	1457
<i>Admissions</i>	486	671	780	812	730	875	1066	784	742	745
<i>Graduates</i>	484	450	511	482	468	564	551	552	579	-
<b>WESTERN</b>										
<i>Applications</i>	1 594	1 724	1 756	1418	1 777	1 506	2286	1635	1109	2293
<i>Admissions offered</i>	435	489	502	502	768	776	1456	1106	901	1438 (b)
<i>Admissions</i>	412	413	512	433	444	686	969	1130	891	1370
<i>Graduates</i>	298	347	320	329	302	-	348	386	537	-
<b>CANADA</b>										
<i>Applications</i>	<b>8 609</b>	<b>8 036</b>	<b>7 583</b>	<b>6651</b>	<b>7 909</b>	<b>7 469</b>	<b>7 568</b>	<b>6 892</b>	<b>6 589</b>	<b>6737</b>
<i>Admissions offered</i>	<b>2 270</b>	<b>2 295</b>	<b>2 837</b>	<b>2713</b>	<b>3 352</b>	<b>3 557</b>	<b>4 072</b>	<b>3 556</b>	<b>3 454</b>	<b>4085</b>
<i>Admissions</i>	<b>1 245</b>	<b>1 651</b>	<b>1 824</b>	<b>1726</b>	<b>1 688</b>	<b>2 214</b>	<b>2 678</b>	<b>2 555</b>	<b>2 343</b>	<b>3024</b>
<i>Graduates</i>	<b>1 196</b>	<b>1 212</b>	<b>1 216</b>	<b>1213</b>	<b>1 159</b>	<b>1 345</b>	<b>1 310</b>	<b>1 323</b>	<b>1 507</b>	<b>-</b>

Notes: (a) September 1, 1996 to August 31, 1997; (b) One school not reported (U. Lethbridge)

Source: Canadian Association of University Schools of Nursing; 1998.

**Table 13: Time-series of Community College Enrolment by Year of Study: Canada**

	Total	Other years of study	First year of study	Year not reported
1976-77	22904	12664	10082	158
1977-78	21007	11515	9296	196
1978-79	19908	10841	8874	193
1979-80	19383	10535	8735	113
1980-81	19455	10077	9290	88
1981-82	20445	10236	10036	173
1982-83	21693	11689	9823	181
1983-84	22259	12543	9716	
1984-85	23016	13103	9895	18
1985-86	23034	12772	10240	22
1986-87	23654	12984	10631	39
1987-88	2395	13618	10283	49
1988-89	23646	13710	9873	63
1989-90	23543	13637	9858	48
1990-91	23441	13541	9874	26
1991-92	23937	13216	10721	
1992-93	24108	13700	10268	140
1993-94	22755	13197	9558	
1994-95	2203	13040	8990	
1995-96	19826	11904	7922	
1996-97	13909	9307	4602	
1997-98	11354	7469	3885	

Source: Statistics Canada.

**Table 14 : Number of nurses holding a specialty certification, Canada, 1999**

<b>Specialty</b>	<b>English</b>	<b>French</b>	<b>Total</b>
Neurosciences	168	0	168
Occupational Health	1009	18	1027
Nephrology	602	16	618
Emergency	1142	5	1147
Critical Care	890	3	893
Psychiatry and Mental Health	1259	12	1271
Operating Room	1841	80	1921
Oncology	717	18	735
Gerontology	327	8	335
<b>TOTAL</b>	<b>7955</b>	<b>160</b>	<b>8115</b>

*Source : Canadian Nurses Association*



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