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Monitoring the Health of Nurses in Canada

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Michael Kerr, PhD
Healther Laschinger, RN, PhD
Colette Severin, MHSc
Joan Almost, MScN, PhD (candidate)
Donna Thomson, MScN, PhD (candidate)
Linda O'Brien-Pallas, LL, RN, PhD
Judith Shamien, RN, PhD
Debra McPerson, RN
Mieke Koehoorn, PhD
Stephen LeClair, MSc

Decision Maker Partners:
Judith Shamien, RN, PhD – Executive Director, Office of Nursing Policy, Health Canada

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Principal Investigators:

Dr. Michael Kerr
Scientist, Workplace Studies
Institute for Work & Health
481 University Avenue, Suite 800
Toronto, Ontario M5G 2E9

Telephone: (416) 927-2027 extension 2123
Fax: (416) 927-4167

E-mail: mkerr@iwh.on.ca

Dr. Heather Laschinger
Professor, School of Nursing
Faculty of Health Services
University of Western Ontario
Room H43, Health Sciences Addition
London, Ontario N6A 5C1

Telephone: (519) 661-4065
Fax: (519) 661-3928

E-mail: hkl@uwo.ca

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For more information on the Canadian Health Services Research Foundation, contact the Foundation at:
1565 Carling Avenue, Suite 700
Ottawa, Ontario
K1Z 8R1
E-mail: communications@chsrf.ca
Telephone: (613) 728-2238
Fax: (613) 728-3527

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K1Z 8R1
Courriel : communications@fcrss.ca
Téléphone : (613) 728-2238
Télécopieur : (613) 728-3527

Monitoring the Health of Nurses in Canada

Michael Kerr, PhD [1, 2]
Healther Laschinger, RN, PhD [1]
Colette Severin, MHSc [2]
Joan Almost, MScN, PhD (candidate) [1, 3]
Donna Thomson, MScN, PhD (candidate) [3]
Linda O'Brien-Pallas, LL, RN, PhD [3]
Judith Shamien, RN, PhD [4]
Debra McPerson, RN [6]
Mieke Koehoorn, PhD [2, 5]
Stephen LeClair, MSc [4]

[1] School of Nursing, University of Western Ontario
[2] The institute for Work & Health
[3] Faculty of Nursing, University of Toronto
[4] Office of Nursing Policy, Health Canada
[5] Department of Health Care and Epidemiology, University of British Columbia
[6] The British Columbia Nurses' Union

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Table of Contents

Key Implications for Decision Makers i

Executive Summary ii

Context 1

Implications 6

Approach 7
Phase I *9*
Phase II *12*

Results 12
Interview findings *13*
Data sources *15*
The final project workshop (Phase II) *17*

Additional Resources 18
Web site *18*
Presentations and other media *18*
Information in journals and other reports *19*

Further Research 19

References 21

Key Implications for Decision Makers

This study examined the information available to decision makers and policy makers on the health of nurses in Canada.

- The health of nurses is affected by many different factors. To develop effective strategies to promote their well-being, decision makers need data at various levels. This includes individual factors like age, job-related factors like workload, workplace factors like staffing levels, and system characteristics like hospital mergers.

- The best way to monitor the health of nurses is with a new tool that combines a survey of healthcare workers and work environment indicators. Much of the data on indicators (such as age, workload, etc.) are already collected and need to be synthesized into a comprehensive, easy-to-use format.

- There is a large gap in assessing factors associated with the nursing work environment and its connection to nurses' health. To bridge this gap, national and/or provincial data sources are needed.

- Organizations looking at nurses' health need to co-ordinate their efforts to avoid duplication.

Executive Summary

It is becoming increasingly apparent that evidence-based policies and strategies are urgently needed to help optimize the physical and mental health of nurses, thereby helping reduce costly work-related injury and illness absenteeism. Such policies and strategies may also have the added benefit of improving patient outcomes, especially in relation to improved nurse-specific outcomes and patient safety. Our study and others found that nurse workload and nurse health indicators are key factors that must be addressed in developing effective workplace health promotion and recruitment and retention strategies. The importance of ensuring a healthy and productive nursing work environment is highlighted by the results of studies like ours, but also by public opinion polls that overwhelmingly identify the quality of nursing care as the pivotal contributor to quality of patient care. Despite such public recognition for the importance of their role, nurses find themselves working in rapidly changing work environments at the same time that their membership is undergoing significant changes.

The combination of increased workloads, increased patient acuity, uncertain work environments, and an aging nursing workforce could have a major effect on nurse health and ultimately on workers' compensation and health insurance disability benefit claims. To date, there has been no overall synthesis of this multi-dimensional phenomenon, so there was a need to further investigate the health of nurses in Canada. Our study was designed to link the theoretical frameworks currently used by nursing and occupational health researchers in order to 1) explore the determinants of nurse health; 2) highlight a list of data elements that will inform policy makers and healthcare administrators about the health of nurses; 3) help identify the factors that contribute to health; and 4) thereby ultimately contribute to the development of evidence-based strategies to preserve and improve the health of nurses. The creation of organizational and work environments that support the health of nurses will not only reduce the anticipated shortage by preserving

these resources for the future, it will also reduce the cost of nursing services by ensuring that the current supply of nurses is used efficiently and effectively, and in a manner that respects their right to a safe and healthy workplace.

The ultimate goal of this project was to help policy and decision makers maintain and enhance the health of the nursing workforce, while our more immediate objective was to provide the same audience with an overview of the information related to nurse health in Canada. As a prerequisite to meeting the project's long-term goal, the study conducted a synthesis of existing health information sources about nurses in Canada and highlighted significant gaps that existed. Using interviews with selected nursing stakeholders across the country, the data synthesis also profiled the major health problems of nurses in Canada and described the factors that contributed to these conditions, particularly those relating to the nursing work environment, and factors possibly related to hospital restructuring and organizational change.

The knowledge gained in the early phase of the study, in conjunction with stakeholder input, was used to generate ideas about possible mechanisms for monitoring the health of Canadian nurses on an ongoing basis. Our findings are based on a combination of reviews of current available data sources and extensive expert opinion drawn from a broad spectrum of the national nursing stakeholder community and, as such, provide policy makers with an evidence-based footing for future resource allocation decisions.

Our suggestions for ways to further enhance the sources of data on nurse health and work environment indicators (Figure 1) should be of use for policy makers considering ways of collecting such data as part of the overall strategy to help ensure the future supply of human resources in Canada's healthcare system.

Figure 1 – Three Surveillance Options

- Use a rotating random set of hospitals/sites with a core set of questions on the health of nurses (i.e., a short survey) "piggy-backed' onto their annual workplace initiatives on the quality of work life.
- Web-based survey linked to the provincial colleges and CIHI tool, possibly similar to the online tool *Employee Survey of the Working Environment (ESWE)* developed at the Institute for Work & Health www.healthyworkplacesurvey.ca.
- A dedicated national survey on the health of nurses (or all healthcare workers), with direct involvement of an agency such as Statistics Canada.

Our proposal highlights three key concerns driving the significant amount of recent interest in nurse health. The first relates to the extent of change experienced by the organizations and work environments of nurses in the past decade. Workloads are reported to be at unsustainable levels, particularly in light of the fact that the average age of nurses is increasing at the same time that the industry is anticipating a significant overall staffing shortage. The second deals with the fact that there are currently no adequate databases or other resources currently available to monitor the health of nurses across Canada.

Finally, we observed a great deal of cynicism about the possible usefulness of our study findings, as the nursing community appears to have become resigned to the fact that much gets said about the conditions they are coping with, but little seems to get done about them. There are now several recent reports on very similar aspects of the issues of nurse health and nurse work environments. We undoubtedly risk further alienation of this critical workforce if we fail to seize the important and very timely opportunity to act that this information presents to us.

Context

This study addresses an often overlooked aspect of the current healthcare environment: the information available to decision makers and policy makers on the health of nurses in Canada. There is a growing body of literature identifying characteristics at the individual and workplace levels, including factors linked to healthcare restructuring, that are associated with physical and mental health problems among nurses.[i] At the same time, statistics from the Canadian Labour Force Survey indicate that nurses have the highest number of lost workdays and the highest percentage of lost work time attributable to illness and injury among the major occupational groups in Canada.[2] It is becoming increasingly apparent that evidence-based policies and strategies are needed to help optimize the physical and mental health of nurses, and thereby help reduce costly absenteeism due to work-related injuries and illnesses. Such policies and strategies may also have the added benefit of improving patient outcomes, especially in relation to improved nurse-specific outcomes and patient safety.

In addition to the direct effects healthcare restructuring may have had on both nurse health and quality of patient care, studies have also reported that the impact of healthcare restructuring on nurse workload and nurse health indicators are key factors that must be addressed in the development of effective recruitment and retention strategies.[14] The importance of this notion of ensuring a healthy and productive nursing work environment is highlighted by the results of public opinion polls that overwhelmingly rate the quality of nursing care as a pivotal contributor to quality of patient care. For example, a recent survey conducted by the Registered Nurses Association of Nova Scotia showed that the public believes that registered nurses have the most influence on the quality of care they receive in the hospital.[17] Despite such public recognition for the importance of their role, nurses find themselves working in a changing organizational and work environment at the same time the profile of their membership is undergoing significant changes.[3] Stress levels are reportedly increasing as a result of this combination of factors.[4] Research has shown that stress among nurses from negative work environment factors represents a potentially dangerous situation, not only for themselves but also for the clients they serve.[5]

In addition to the relatively recent research interest in stress-related outcomes among nurses, there is a wealth of research evidence linking the work environment of nurses to several other important health concerns, most notably musculoskeletal disorders and needle-stick injuries. For example, studies in Canada show that healthcare workers suffer more workplace musculoskeletal strains and sprains than any other major occupational group. A special report on healthcare workers in British Columbia found that musculoskeletal-related compensation claims accounted for almost three-quarters of all claims in the healthcare sector from 1991 to 1995.[6] Several studies have also shown that workplace factors that empower or enable nurses to get their job done more effectively are also related to lower levels of job burnout, occupational mental health, and job strain.[7,8,9] Nurse stress has also been associated with undesirable work outcomes such as loss of compassion for patients, increased incidence of mistakes, on-the-job injury, absenteeism and tardiness, the inability to provide quality patient care, and needle-stick injuries.[10,11,12] While measures that can help reduce work-related injury and stress could clearly have a number of beneficial outcomes, a necessary first step in the development of effective prevention strategies is the availability of data on the factors contributing to the problem.

The ultimate goal of this project was to help policy and decision makers maintain and enhance the health of the nursing workforce, while our more immediate objective was to provide the same audience with an overview of the information related to nurse health in Canada. As a prerequisite to meeting the project's long-term goal, the study conducted a synthesis of existing health information sources about nurses in Canada and highlighted significant gaps that existed. Using interviews with selected nursing stakeholders across the country, the data synthesis also profiled the major health problems of nurses in Canada and described the factors that contributed to these conditions, particularly those relating to the nursing work environment, and factors possibly related to hospital restructuring and organizational change. The knowledge gained in the early phase of the study, along with stakeholder input, was used to generate ideas about possible mechanisms for monitoring the health of Canadian nurses on an ongoing basis.

To meet its key objectives, the study addressed the following questions:

- What are the main work-related health problems affecting nurses in Canada, and what are the main factors believed to contribute to these problems?
- What data concerning the health of nurses are available in existing data sources and ongoing studies?
- What are the perceived gaps in the information on nurse health that must be addressed in order to effectively monitor the health of nurses over time?
- What is the best mechanism for establishing such a monitoring system?
- How can data on nurses' health be best integrated into health services organizations to be used by policy makers, decision makers, and the nursing community?

The above questions are not listed in order of priority, but rather in logical sequence. The last question, concerning data use, was identified through stakeholder input as being of central importance to this project. Therefore it provides the rationale for the first three questions, and thus constitutes the "so what" of the earlier phases of the project from a decision maker's perspective. These research questions were defined after meetings with researchers, key stakeholders, and decision makers, where it was suggested that existing data sources may not be sufficiently well-developed to answer even some very basic questions about the health of nurses in Canada. During these initial project consultations and deliberations, there was recognition that due to the restructuring process that was occurring or has already occurred in the health sector, a lack of adequate information could be a cause for major concern. Increased workplace stress, when combined with an aging nurse workforce, has the potential to produce significant negative health consequences for nurses. While it is evident that restructuring could lead to a deterioration of the health and quality of work life of nurses, it was also recognized that these circumstances could potentially diminish the ability of health service organizations to meet the growing demands of their constituents as well.

To support efforts to make data on nurse health indicators routinely available to healthcare decision makers, our proposal highlights three key concerns that have

contributed to the significant amount of interest expressed recently in relation to the health of nurses. The first concern relates to the substantial changes experienced by the organizations and work environments of nurses in the past decade. The immediate work environment has become more complex with fewer support and management personnel in place to assist with patient care.[3,13] Only the most acute patients are now admitted to hospitals, and when this is combined with pressures to reduce length of stay, nurses' work gets compressed into a shorter, more intense time frame.[13] For example, patient days have declined by 19 percent, and there has been a 29 percent reduction of hospital beds in Ontario over the past few years. Compounding this, while the Canadian population as a whole increased over the past decade, the number of registered nurses in Canada actually dropped from 235,630 in 1993 to 227,651 in 1998, a decline of 3.4 percent (the number rose slightly in the past few years but is still below 1993 levels, with 231,512 registered nurses in 2001).[14]

A second concern relates to a major demographic shift that is occurring in the nursing workforce, whereby the average age of nurses is increasing at the same time that the industry is anticipating a significant overall staffing shortage. This increased average age for nurses is undoubtedly a result of laying off younger nurses during the retraction of the healthcare system over the past decade (given their lower seniority levels). With fewer and fewer positions available for younger nurses, the average age of nurses in Canada increased from just more than 40 years old in 1993 to almost 44 years old in 2001.[14] More significantly perhaps, the number of older nurses is also increasing dramatically, with 71,002 Canadian nurses older than age 50 in 2001, compared to only 48,838 in 1993, an increase of more than 45 percent. The huge increase in the proportion of the nursing work force approaching retirement age will undoubtedly have serious human resource implications in the near future as facilities will struggle to replace their older, more experienced staff in larger numbers than can be readily handled by the system.

There may also be more immediate human resources concerns: several work-related health conditions, such as musculoskeletal injuries like back pain and neck/shoulder pain, are age-related, particularly in relation to the duration of time off work after an injury has

occurred. Potentially, the shift to older nurses could lead to a substantial increase in the rate of such injuries, as older staff nurses may be required to do more and more of the heavier lifting and turning of patients in units that are already short-staffed.

The nursing population is not only getting older on average, it is also seeing fewer and fewer younger nurses enter the profession. At the same time that the proportion of older nurses has increased, there has been a concurrent and almost equally dramatic reduction in the number and proportion of younger nurses as well, with the number below age 29 falling from 33,429 in 1993 to only 21,621 in 2001, a net reduction of 35 percent.[14]

The third concern highlighted by our study deals with the notion that, perhaps even more so than with any other economic sector, the direct financial well-being of the healthcare system is at least partly dependent on the health and well-being of its employees. For example, while the average Ontario company experienced a workers' compensation payroll premium reduction of seven percent in 1999, hospitals and nursing services actually saw their premiums increase by 14 percent and 13 percent respectively.[15] It is evident, then, that in addition to general improvements in the quality of work life, efforts to address the health problems of nurses also have the potential to produce significant financial savings for healthcare organizations. A study from British Columbia reported that a total of 169,579 days were lost to disability from strain and sprain injuries and 8,744 days to repetitive motion disability among workers in the healthcare sector alone in 1997. The cost of these claims totalled almost $17 million, excluding healthcare and rehabilitation costs.[16] There is also the possibility that the health of nurses and the quality of their work environment can have a direct impact on the quality of care that is delivered, which in turn can have direct financial implications for the sector, as more and more scarce resources will have to be redirected towards potentially preventable conditions that arise out of staffing problems, be they shortages of client interaction time, staff nurses, or both.

The combination of increased workloads, increased patient acuity, uncertain work environments, and an aging nursing workforce could have a major impact on nurse health and ultimately on workers' compensation and health insurance disability benefit claims. To date there has been no overall synthesis of this multi-dimensional phenomenon, so there is a need to further investigate the health of nurses in Canada. Our study was designed to link the theoretical frameworks currently used by nursing and occupational health researchers in order to 1) explore the determinants of nurse health; 2) highlight a list of data elements that will inform policy makers and healthcare administrators about the health of nurses; 3) help identify the factors that contribute to health; and 4) thereby ultimately contribute to the development of evidence-based strategies to preserve and improve the health of nurses. The creation of organizational and work environments that support the health of nurses will not only reduce the anticipated shortage by preserving these valuable resources for the future, it will also reduce the cost of nursing services by ensuring the current supply of nurses is used efficiently and effectively, and in a manner that respects their right to a safe and healthy workplace.

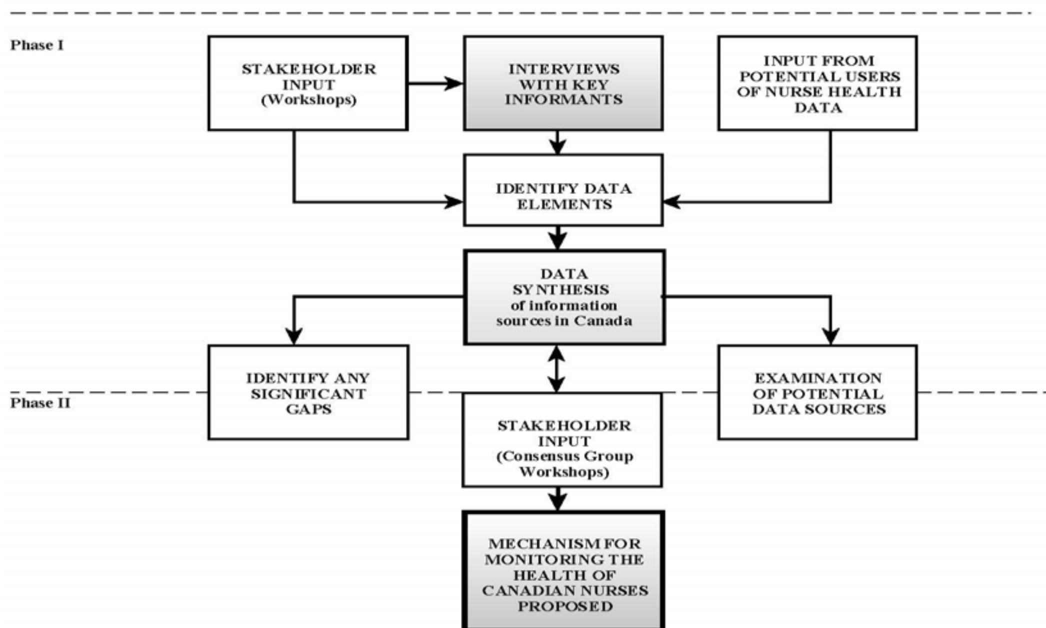
Implications

This project is of direct relevance to decision makers in health policy and healthcare administration, particularly those looking to develop evidence-based performance indicators for the healthcare system. It is anticipated the model for a health surveillance system developed in this study can be used by decision makers to monitor the effects of workplace conditions on the health of nurses, thereby permitting timely initiation of preventive actions. It is possible that ensuring the good health of the nursing workforce through appropriate workplace intervention will help stakeholders retain and recruit nurses and maintain high levels of care. The conclusions to be drawn from this research will address concerns of direct financial relevance, and the information it provides will directly aid decision makers as they make organization-level policy changes to help deal with the issue of nurse health. This project was intended to provide insight into this issue, thereby potentially better enabling policy makers and managers to develop solutions that will lower the costs associated with providing effective healthcare delivery and improve efforts towards the recruitment and retention of nurses.

This study is part of a worldwide body of research investigating the health of healthcare workers. Our research project will make a unique contribution by synthesizing the major health problems of nurses in Canada and identifying factors that contribute to these conditions, including those possibly related to hospital restructuring and organizational change. The conclusions drawn from our research include suggestions intended to directly aid decision makers as they make organization-level policy changes. The conceptual model of nurse health developed in our project can help guide the development of such changes by highlighting the most relevant factors to consider and underlining the importance of a holistic view of both nurse well-being and the quality of nurses' work environments. Our suggestions for ways to further enhance the sources of data on nurse health and work environment indicators should be of use for policy makers considering ways and means of collecting such data as part of the overall strategy to help ensure the future supply of human resources in Canada's healthcare system. Our suggestions are based on a combination of reviews of current available data sources and extensive expert opinion drawn from a broad spectrum of the national nursing stakeholder community and, as such, provide policy makers with an evidence-based footing for future resource allocation decisions.

Approach

Figure 1. Project Activities



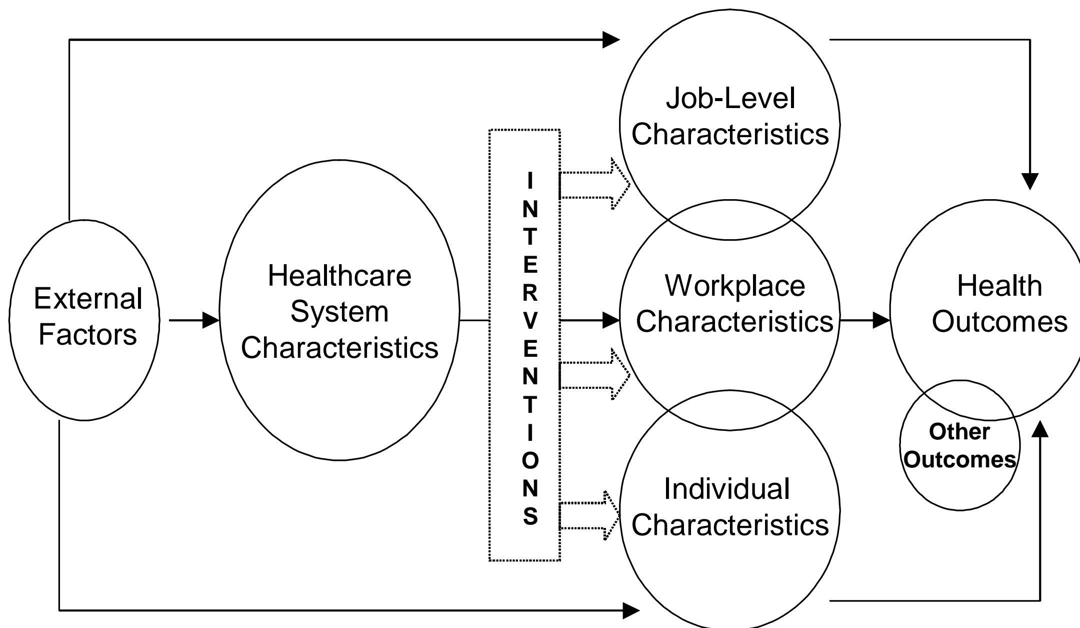
As shown above in Figure 1, there were two phases for this study. Phase I focused on the identification of desired data elements, including reviewing existing data sources and identifying data gaps, and Phase II was concerned with the development of future data collection mechanisms for ongoing health monitoring. Overlapping the design choices influencing our study methods was a primary concern that the data to be collected and the process to be developed to collect and synthesize the data needed to be kept highly relevant to decision makers and policy makers. To ensure this relevance, much of the effort required to complete this study was expended on stakeholder contact, including regional interviews with nursing community stakeholders, which were used to seek input on the main nurse health objectives for the project, as well as to examine potential data sources for further synthesis. While much of the information required to determine which data elements to examine was influenced by the study investigators' own knowledge and literature review, to develop the initial conceptual framework of what we felt was driving the health of nurses we also specifically recognized the imperative of soliciting input from the potential users of nurse health data. We therefore built in several stakeholder-specific contacts to help ensure that we could incorporate their direction and feedback into the project. The collection and use of this feedback was a major focus of this project; thus much of the fieldwork for this project revolved around direct contact with decision makers and policy makers.

In the early stages of the project, the research team sought input from representatives of various provincial and federal nursing organizations, including the Canadian Nurses Association, Canadian Federation of Nurses Unions, Canadian Healthcare Association, Canadian Institute of Health Information, Canadian Council of Health Services Accreditation, and Statistics Canada. At this first stakeholder workshop we solicited and received input from these organizations on the development of the research proposal and the possibility of supporting and contributing to this project in the future. In addition, at the above meeting, the research team sought and received support for the development of a project advisory team with representation from some of the same groups involved in the initial workshop. Through regular teleconference meetings the advisory team provided valuable initial and ongoing direction to the research team.

Phase I

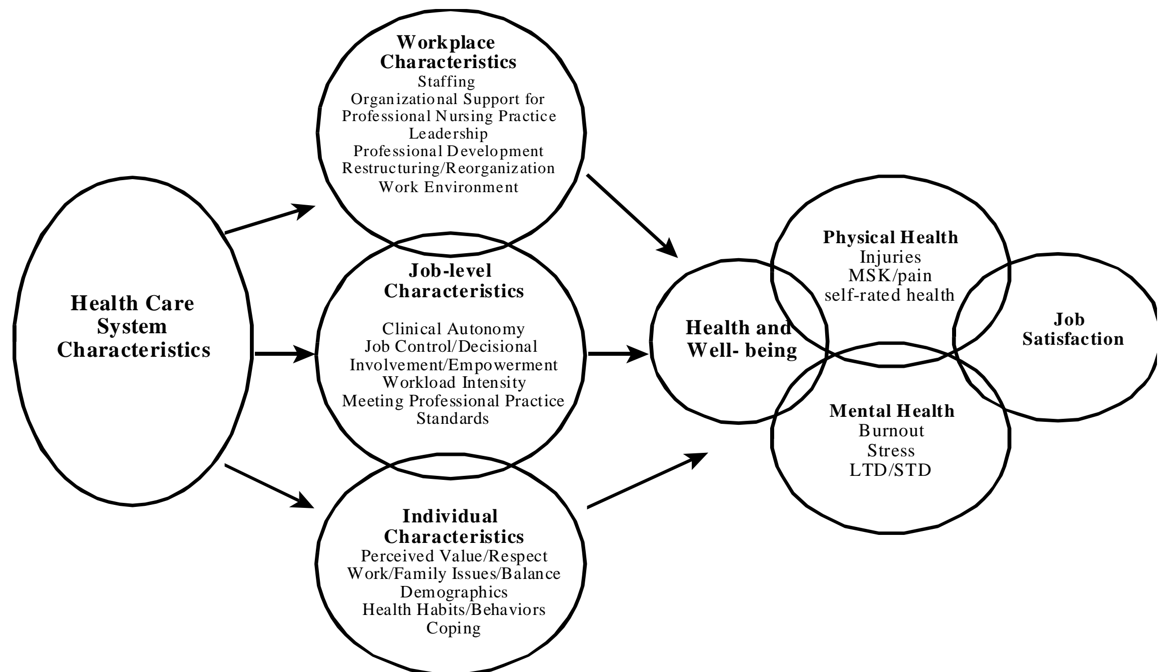
The research team convened one workshop for this phase. Participants at this workshop included key stakeholders and decision makers representing provincial and national organizations, including the Office of Nursing Policy, the Ministry of Health and Long-Term Care, the Canadian Practical Nurses' Association, the Canadian Federation of Nurses Unions, the Canadian Institute of Health Information, and the Ontario Nurses' Association (see Appendix A). The workshop was used to discuss a schematic version of the nurses' health model developed by the research team from their own research and literature reviews (see Figure 2). The workshop intended to gather participant feedback on the model outline and to seek input on which data elements stakeholders consider to be the most likely indicators of nurse health. Following the workshop, participants were asked to complete a brief questionnaire rating the impact of each proposed indicator on nurses' health. The information obtained from the questionnaire allowed us to more

Figure 2: Determinants Of Nurses' Health
(Simplified Model Used At Workshop #1)



directly assess our stakeholders' perceptions of the major factors contributing to nurse health. This information was critical in helping us develop a structured interview guide for soliciting information from key nursing sector informants across Canada. We also used this input from stakeholders and decision makers to help prepare a roster of project-relevant databases for possible further examination. Based on a review of the literature, our own research, and input from key stakeholders in this first workshop, we were able to construct a revised conceptual model for nurse health (see Figure 3) that illustrates the inter- and intra-relationship of several factors and how they might contribute to the health of nurses. During the first phase of this project, we used this conceptual model as a framework for the development and refinement of the interview guide (see Appendix B) for use in our broader consultations with key informants across the country. Using an interview guide with structured questions to ensure a similar approach with all respondents, the interviews addressed five key areas: 1) general perspectives on the importance of nurse health and the effect of restructuring on their health; 2) perspectives on the major physical and mental health problems for nurses; 3) perspectives on the

Figure 3: A Conceptual Model of Nurse Health



major work-related factors contributing to these conditions; 4) information about effective policies and/or strategies respondents were aware of respecting nurse health; and 5) information about potential data sources of possible relevance to nurse health. In completing the key informant component of the study, 62 nursing stakeholders from all regions of Canada were interviewed within a descriptive qualitative framework about the major factors contributing to work-related health problems in the nursing profession.

The 62 interviewees made up a purposive sample of subjects from the Canadian nursing community meant to balance representation from the geographic regions within Canada. Interview participants included representatives from national and provincial organizations, labour and management representatives, as well as researchers and policy advisors (see Appendix C for the full list). All interviews were recorded with permission of the subjects, who signed informed consent forms. (The project received expedited ethical approval from the University of Western Ontario.) The 62 stakeholder interviews were transcribed from the audiotapes, summarized, and then analysed for thematic content. The descriptive content analysis allowed us to identify common themes across the interviews and to compile a comprehensive list of 380 possible indicators of nurses' health. From the information obtained from all sources and through further refinement of the list by the research team, we produced a set of 23 factors associated with nurses' health. By comparing these factors to the original elements of the conceptual model, it was found that they accurately captured the opinions of the stakeholders interviewed.[1]

In the latter half of the stakeholder interviews, we gathered information from interviewees about available data sources that could be used to help to create a synthesis of existing information sources about the health of nurses in Canada and to highlight any significant gaps that existed in such information. Using the criteria developed during the stakeholder input process, the quality and comprehensiveness of these existing databases were then critiqued and inventoried. To further enhance our database roster, additional

consultations were undertaken with researchers and other key informants identified during the workshop and interviews.

Phase II

This phase of the study focused on identifying gaps in the information that need to be addressed and developing a process for outlining the most appropriate mechanism to collect and use data on nurse health on an ongoing basis. On October 16, 2002, the final workshop for the project was held with key stakeholders and decision makers representing provincial and national organizations (see Appendix D for a full list). The main purposes of the workshop were 1) to provide a selected sample of key nursing stakeholders with a summary of our overall study findings; 2) to solicit input on what should be measured and, more importantly, how it should be measured; 3) to develop ideas about monitoring the health of nurses; and 4) to discuss ways of engaging stakeholders (nurses, employers, policy makers) with the results of the study. The conceptual model developed by the study was used to frame discussions about the feasibility and usefulness of collecting the identified variables on an ongoing basis to effectively monitor the health of nurses over time. Knowledge transfer and exchange experts from the Institute for Work & Health were included in the workshop to help facilitate small-group discussions about which indicators to measure and to stimulate discussion about suggested mechanisms for ongoing data collection.

Results

Sixty-two semi-structured interviews were completed with representatives from six regions of Canada: national, West region (British Columbia and Alberta), central region (Saskatchewan and Manitoba), East region (Ontario and Quebec), Atlantic region (New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland), and Northern region (Northwest Territories, Yukon, and Nunavut). In terms of representation by type of

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[1] To help validate our results, a small group of staff nurses was interviewed about the main findings of the stakeholder interviews. Although unable to get enough subjects for a rigorous focus group we were able to get very helpful feedback from two acute-care nurses (one older and one younger). One of the more interesting points raised was the potentially significant impact that the shift in nurse age can have on nursing work environments. They expressed a concern that we also encountered in our stakeholder interviews, about potential conflict between older and younger nurses with regards to a number of issues, including differing perspectives on the role of traditional versus evidence-based approaches to nursing care.

participating organization or affiliation, the stakeholders included representatives from a wide variety of organizations, such as provincial professional associations and councils (23 percent), hospitals and health centres (18 percent), health and hospital associations (11 percent), unions (10 percent), research and education bodies (10 percent), national professional associations and councils (eight percent), government bodies (eight percent), health regions (eight percent), and national organizations (three percent). Given the relatively even distribution of participants from across Canada and the variety of organizations and affiliations represented in our sample, we concluded that our sampling approach was successful in generating an excellent cross-section of the national nursing stakeholders in Canada.

Interview findings

Based on responses to the questions from the first part of the interview guide about background perspectives on the importance of nurse health, there was overwhelming agreement (85 percent) among interviewees about the existence of a strong relationship between the health of nurses, challenges in recruitment/retention, and the nursing labour unrest experienced across the country, with increasing frequency over the past several years. For the second part of the interview, addressing the impact of restructuring on nurse health, common themes about the impact of restructuring were also noted, including notions of greater workload and responsibility, loss of nursing management, and a lingering sense of both betrayal and uncertainty about the future. A theme of struggling to cope with constant and rapid change was also identified in the interviews (see Quote #1).

> ***Quote #1***
>
> *"There have been too many changes to the healthcare system that have been implemented too quickly... nurses decide to enter the profession in order to work in a stable work environment, but it is not a stable environment... it is an environment faced with constant change. This results in enormous stress for nurses."*

Analysis of the portion of stakeholder interviews dealing with healthcare restructuring also indicated nurses feel devalued, angered, and betrayed. It was also reported that nurses have increased feelings of uncertainty and insecurity about their work and employment, they report having little input into decision-making, and that this combination of factors is leading to an increase in stress-related illnesses (see Quote #2).

Quote #2

"I think the lack of control is linked to the rapidity of change, the lack of consultation on the change, and the notion that they never know what is going to happen next…the change just keeps happening in massive ways."

With respect to the major health concerns experienced by nurses, most interviewees identified musculoskeletal conditions/injuries (90 percent) and stress/burnout (85 percent) as the major work-related health problems of nurses. Other frequently mentioned physical health problems included stress-related illnesses (such as gastro-intestinal problems) and exposure to risk factors like infection and chemical hazards (such as latex gloves). Anxiety, low morale, and depression were the most common other mental health concerns reported.

Following the format of the study's conceptual model, interviewees were asked to report on factors at the individual, job, and workplace levels. There was no clear consensus on individual factors among the interviewees, although perceived value and respect was a frequently reported issue. A clear majority indicated workload (or staffing shortages) as the most important job-level factor associated with the physical and mental health of nurses (see Quote #3). Other job-level factors commonly mentioned were excessive overtime and the increasing acuity of patients. The most frequently mentioned workplace-level factors included a lack of participation in decision-making, social support from coworkers and colleagues, and the type and availability of equipment/technology to support nursing practice, including such things as the functioning and availability of lifting assists.

Quote #3

"Workload is absolutely the key number one issue that nurses talk about right now. When you talk to them, it is not necessarily the patient care that is contributing to the workload, it's the cognitive strain of co-ordinating everything"

There was only limited input from the interviews regarding the most effective policies or strategies that can be used to address concerns about nurse health. The most commonly reported approaches that were mentioned in the interviews included those addressing personal safety and security in the workplace, such as anti-violence programs, as well as support for professional practice, including education leave. Workload policies and guidelines were also mentioned by some interviewees as possibly being effective ways to cope with current workload levels, such as the mandated patient:staff ratios that have been attempted in some jurisdictions.

Data sources

The interviews also solicited input regarding sources of information that could possibly be used to monitor nurse health on an ongoing basis. There was general consensus from the stakeholders that there is nothing readily available that can adequately profile nurse health or the factors that might be making the most significant contributions to their health. There was a clear theme about the lack of high-quality data, even for some things that have been well-resourced, such as workplace nursing productivity data (see Quote #4).

Quote #4

"Everybody collects data but we don't have standard definitions; we need clear, precise, and mandatory provincial standard definitions so that we are comparing apples with apples."

Concerns were frequently raised about the consistency and accuracy of workload data across and within jurisdictions throughout the country. There was also a strong consensus, especially from those most directly involved in the provision of nursing services, that the likelihood of getting nurses to fill in detailed annual surveys was very low (see Quote #5).

> *Quote #5*
>
> *"Nurses themselves are so sick and tired of being studied to death and they don't see any results, no action, just more rhetoric... that's a real barrier for trying to move forward. That doesn't mean not to try, but you have to acknowledge that it is going to be very difficult."*

A similar warning about data-overload was echoed in interviews with stakeholders in management positions. There were strong indications from these subjects that new requests for additional data were not likely to be met with a warm reception, since most organizations were already collecting as much data as they possibly could.

The information collected from the interviews, in conjunction with what the researchers had already collected through a variety of other sources, was collated into a data source document, included as Appendix E in this report. It is evident from our review of these existing data sources that there is currently no suitable single data source that can comprehensively address all of the elements of the conceptual model of nurse health that have been presented in this study. This means that either a reduction in scope is necessary to move forward on the issue, or that a possible combination of data sources could be used with the more comprehensive model. It was already known that certain nurse variables were available through existing sources such as the Survey of Registered Nurses, held by the Canadian Institute for Health Information and administered by the provincial registered nurses associations. It was also recognized that some organizational variables are currently available in provincial government databases, such as the MIS database on workload, and that illness and injury rates, absenteeism, and information about worker's compensation claims could also be accessed from various provincial sources. However, the main gap identified in this project was with the factors at the job and workplace environment levels. These were not found to be routinely available across Canada, and where they did exist, were generally only in one-time research databases.

To help the overall project team and the stakeholders deal with the issue of proposing mechanisms for ongoing data collection on nurse health, the study briefly summarized the key features of the available data sources identified during the interviews in a practical and accessible way and then made this information available to participants at the final project workshop (see Appendix E).

The final project workshop (Phase II)

To better reflect the nurse health and work environment factors reported by the 62 stakeholder interviews, the original research model depicting possible determinants of nurses' health was revised to reflect their input as well as the initial stakeholder workshop input. As a way of validating our findings, the revised model was presented to the participants at the final project workshop, leading to the development of the study's final conceptual model of factors contributing to nurse health, shown in Figure 2. Ultimately, we hope this model can be used to inform the development of effective, evidence-based workplace strategies designed to improve and maintain nurse health.

In addition to discussions about the conceptual model of nurse health, the final workshop also deliberated about existing data sources and the relative merits of possible strategies for collecting data on nurses' health and work environments. There was general agreement that existing data sources were not sufficient to properly address the issue, especially in relation to the components of the conceptual model of nurse health proposed by this study. There was nothing on a national or provincial level that could be considered comprehensive enough to empirically test such a model, leaving only two remaining choices — modify existing resources or create dedicated new ones. The three main monitoring options that arose out of final workshop are shown in Figure 4.

Figure 4 – Three Surveillance Options

- Use a rotating random set of hospitals/sites with a core set of questions on the health of nurses (i.e., a short survey) "piggy-backed" onto their annual workplace initiatives on the quality of work life
- Web-based survey linked to the provincial colleges and CIHI tool, possibly similar to the online tool **Employee Survey of the Working Environment (ESWE)** developed at the Institute for Work & Health www.healthyworkplacesurvey.ca.
- A dedicated national survey on the health of nurses (or all healthcare workers), with direct involvement of an agency such as Statistics Canada.

Additional Resources

Web site

The final report of the study, describing the health status of nurses and the ability of current data sources to meet nurse health information needs, will be made available (in PDF format) via the Internet at our project web site, www.nurseshealth.org . The data sources table will also be accessible on the web site, as will a links page with relevant resource pages hyperlinked in from across the Internet. The entire web site, in particular the data sources and links sections, will be monitored and updated at regular intervals for a period of at least one year from submission of the final report, and for longer given the securing of adequate funding sources. Draft versions of the web site pages are included in Appendix F.

Presentations and other media

The research team presented the findings of this study in a dedicated roundtable session on November 22, 2002 at the Registered Nurses Association of Ontario's Healthy Workplaces in Actions 2002 2nd International Conference in Toronto, Ontario, and also at the Occupational Health and Toxicology Rounds in the department of clinical epidemiology and biostatistics at McMaster University on February 19, 2003. The results of this project were also presented at the 17th Annual Nursing Research Conference at the University of Western Ontario in London, Ontario in May of 2003.

Information in journals and other reports

The determinants of nurses' health model from our study was featured in the Canadian Institute for Health Information report, *"Canada's Healthcare Providers" (Chapter 6: The Health of Healthcare Workers, p. 85)*, as a helpful framework for considering factors influencing nurse health within the context of the healthcare system. The project was also featured in a column of the March 2002 issue of *Canadian Nurse*, a leading national journal for nurses in Canada. It was also featured prominently in the December 2002 issue of the newsletter, *At Work*, from the Institute for Work & Health, and more recently in the January/February 2003 issue of *The Registered Nurse Journal*, the member journal for the Registered Nurses Association of Ontario.

Further Research

One of the most challenging issues faced by this study was the recent mini-surge in activity related to the health of nurses coinciding with the time that this project was in the field. In fact, so many other projects were active in tandem with this research study that we made a special effort to try to directly relate some of the more prominent activities of these other initiatives to our own study. For example, we sought direct input from our 62 nursing stakeholder interviewees about the final recommendations of "*Commitment and Care: The benefits of a healthy workplace for nurses, their patients and the system,"* a policy synthesis jointly commissioned by the Canadian Health Services Research Foundation and the Change Foundation.[18] Forty of the 62 people interviewed (65 percent) responded to a short survey asking for a priority ranking of the most important policy synthesis recommendations to be acted upon by the various components of the healthcare system — government, employers, professional bodies, and educators/researchers (see Appendix G).

In addition to this policy synthesis documenting the major concerns of the nurse work environment, the Canadian Nursing Advisory Committee released its own document *"Our Health, Our Future: Creating Quality Workplaces for Canadian Nurses,"* which included a large number of recommendations for action, most notably the need for the valid measurement of workload and the development of several other work and health

indicators.[19] Additional work on the issue of nurse health indicators was recently completed by the Canadian Nurses Association, in conjunction with the Canadian Council on Healthcare Accreditation.

This exceptional convergence of activities related to the health of nurses provided the rationale for one of the key recommendations from our project — direct communication between the people and organizations involved in these various activities via a dedicated initiative on the part of one of the central instigators of much of this activity, such as the Canadian Health Services Research Foundation. Pulling together representatives from these various nurse health efforts could have enormous potential for preventing duplication of effort and for bringing together into the same room the necessary critical mass of experience and knowledge about the issue.

Based on the extent of the activity and resources that have already been or are currently being allocated to the topic, it is clearly time for a strong, focused, and dedicated effort to establish a mechanism for monitoring the health and work environments of healthcare providers. Nurses in particular continue to provide the bulk of the direct care within the healthcare system; thus it makes sense to start such an initiative with them before expanding it to other healthcare workers. This will have the clear advantage of building upon the head start that nursing has already developed in this area. Waiting until we have agreement on how and where to act between all the different human resource components of the system could very well lead to continued cries of inactivity on a critical issue that may have already been studied as much as it can be, before immediate action becomes the next logical step.

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