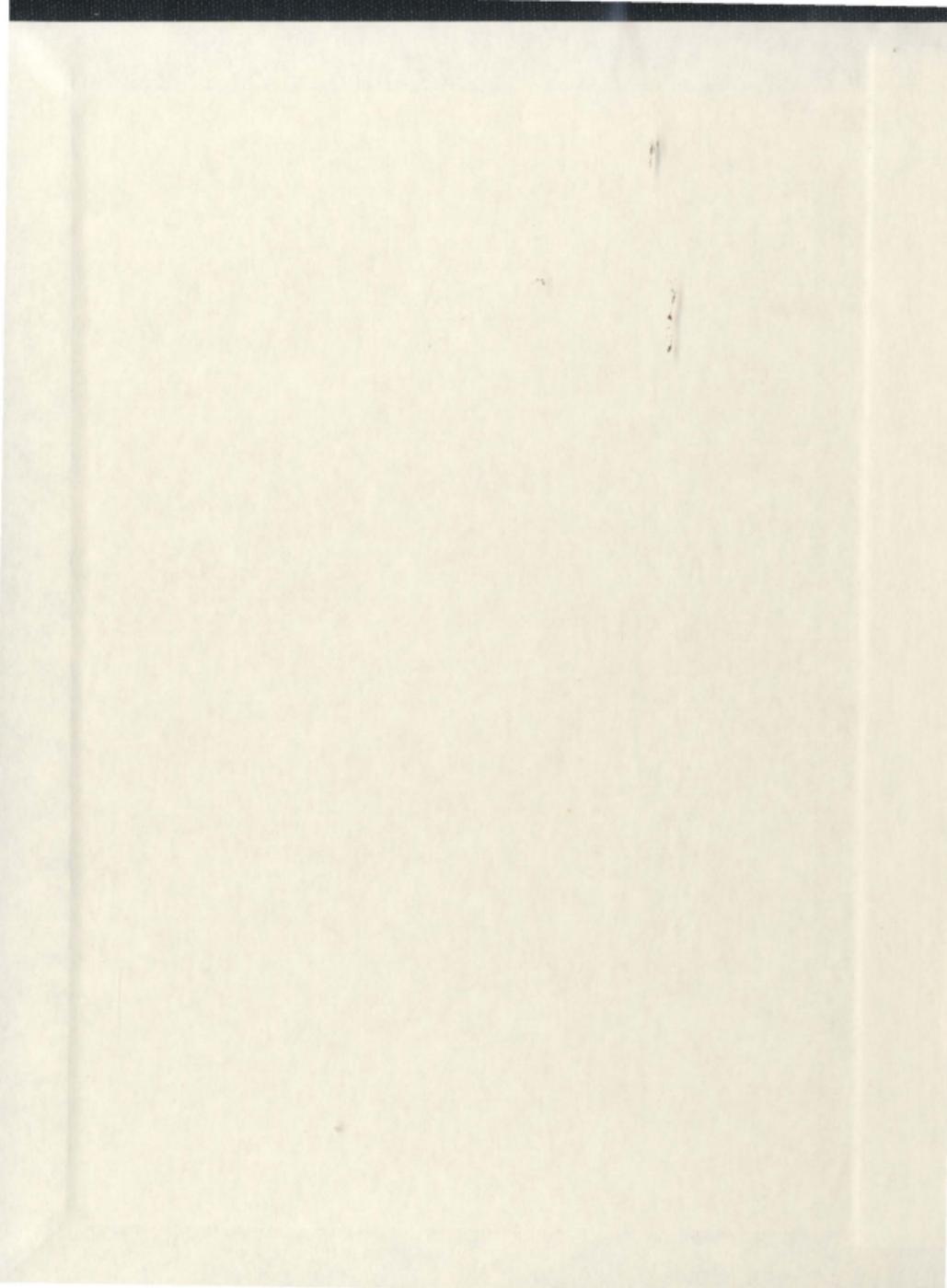
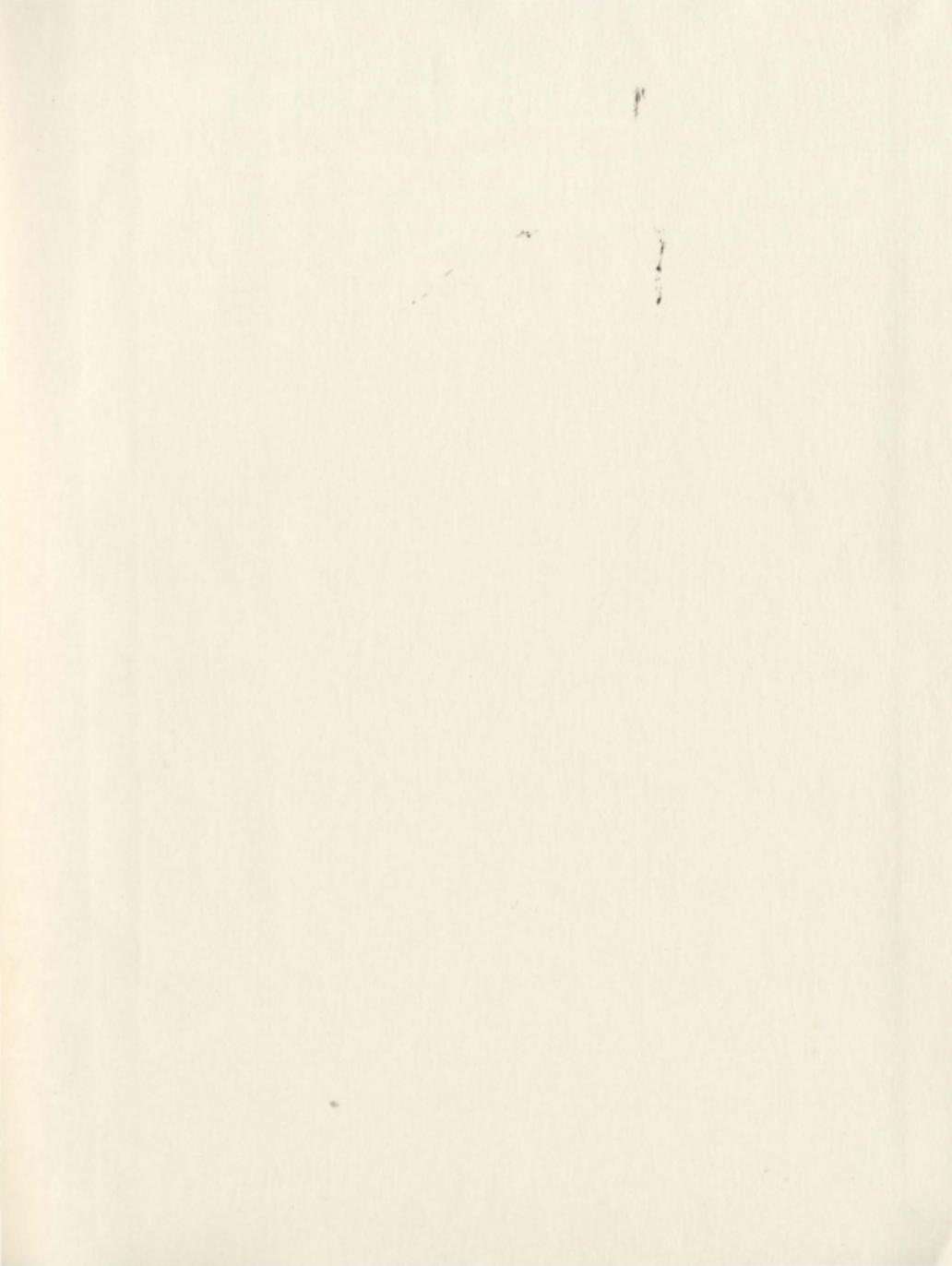


ACUTE CARE REFORM AND ITS IMPLICATIONS FOR
HEALTH SYSTEM AND PROVIDER OUTCOMES

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AND PROVIDER OUTCOMES

by

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Abstract

The primary objective of this doctoral research was to examine the impact of acute care reform and its implications for health system and provider outcomes in Newfoundland and Labrador, Canada. A second objective was to identify the best predictor models of health care provider outcomes (organizational commitment, intent to stay, and health care quality) at different phases of the reform process. Registered nurses, the largest group of employees in the acute care sector, were selected as the exemplar for model testing.

This doctoral research was comprised of three empirical studies, each of which led to manuscripts for publication. The *first* study was an examination of the perceptions of system reform on health care providers (registered nurses, licensed practical nurses, physicians, allied health professionals, management personnel) conducted between 1999 and 2000. The *second* empirical study was a re-survey of health care providers between 2001 and 2002. In the *third* study in 2005, the focus was on documenting registered nurses' changes in perceptions of health care reform and attitudes from previous years and monitoring consistency of predictors of final outcome (perceived health care quality, organizational commitment, intent to stay). Collectively, the three studies and the resulting five manuscripts constitute a thesis that forms the basis for an ongoing and future program of research for monitoring perceptions and attitudes over time and the consistency of predictors of outcome for all health care providers.

The findings indicate that restructuring had a negative impact on health care providers' perceptions of the emotional climate, practice issues, collaborative relations, trust in

employer, job satisfaction, organizational commitment, intent to stay and health care quality that was observed at all time periods. Key aspects of organizational culture emerged as significant predictors of intermediate (trust in employer and general job satisfaction) and final outcome for registered nurses. Health care provider perceptions of the organizational culture and reactions to organizational change may also have important implications for their health status, job performance, productivity and sick leave usage, as well as ultimately for organizational outcomes such as service quality, efficiency and costs.

This research based evidence has major health policy implications for three levels: macro (governments), meso (regional health boards, senior leadership and managers of institutions, public) and micro (individual health care providers, professional bodies/unions). Innovative strategies to promote and enhance organizational culture (emotional climate, collaborative relations, and practice issues) may ultimately lead to higher levels of job satisfaction, trust in employer and organizational commitment, greater intent to stay, and more positive perceptions of health care quality.

Dedication

This work is dedicated to my parents Bernard and Eileen Farrell. The long road has finally come to an end. Mom, thank you for instilling in me the importance of a good education. Thank you both for always being there for me and for your endless love, support and encouragement.

I lament the fact that God chose to take you both home suddenly and unexpectedly within the last seven months and that you did not live to attend my convocation. Like the angels you were in life, you'll be the angels at my side as I am awarded my degree. I miss you terribly, but my heart is comforted knowing I will feel your presence throughout my existence. I will love you both forever.

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I would like to express my sincere gratitude and thanks to everybody who supported me during my graduate program.

To my husband Gabe and our children Anne, Keegan, Harry and Peter a special thank you filled with love and appreciation for their continued patience and support during the course of my studies.

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I would like to express my deepest appreciation to my co-supervisors and mentors, Dr. Patrick Parfrey and Dr. Christine Way, for their support, encouragement and guidance throughout this dissertation and indeed in my professional career. This has been an incredibly rewarding experience. To the members of my supervisory committee, Dr. Brendan Barrett and Dr. Rick Audas, a sincere thank you.

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To Laurie and Kathy, my fellow PhD students, thank you for your friendship and for making this journey a pleasant one.

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List of Publications

The following publications have been derived from the work of this dissertation.

Papers

Parfrey PS, Barrett BJ, **Gregory D**. Restructuring acute care hospitals in Newfoundland and Labrador. *J Health Serv Res Policy* 2005; **10** (Suppl 2): 1-3.

Twells L, Doyle M, **Gregory D**, Barrett BJ, Parfrey PS. Acute care restructuring in Newfoundland and Labrador: The History and Impact on Costs. *J Health Serv Res Policy* 2005; **10** (Suppl 2): 4-11. Laurie Twells and Michael Doyle contributed equally to this work.

Way C, **Gregory D**, Baker N, LeFort S, Barrett BJ, Parfrey PS. Attitudes and perceptions of registered nurses during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005; **10** (Suppl 2): 22-30. Christine Way and Deborah Gregory contributed equally to this work.

Curtis B, **Gregory D**, Barrett BJ, Kent G, Jelinski S, Kraft S, O'Reilly D, Smith S, Parfrey PS. Quality of medical care during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005; **10** (Suppl 2): 38-47. Bryan Curtis and Deborah Gregory contributed equally to this work.

The following paper has been submitted for publication

Gregory DM, Way C, Barrett BJ, Parfrey PS. (Submitted March, 2007). Predictors of Perceived Health Care Quality for Registered Nurses During and Following Health System Reform. [Manuscript submitted for publication].

Abstracts submitted and accepted

Gregory DM, Way C, Barrett BJ, Parfrey PS. (Submitted March, 2007). Predictors of Perceived Health Care Quality for Registered Nurses. The International Society for Quality in Health Care. 24th International Conference, Boston, Massachusetts (October 2007).

Abstracts

Gregory D, Barrett B, Way C, McDonald J, Kent G Twells L, Neville D, Doyle M, Parfrey P. An Evaluation of Restructuring of Acute Care Hospitals in Newfoundland and Labrador (NL), Canada from 1995-2002: Regionalization and Hospital Aggregation. 6th International Conference on the Scientific Basis of Health Services: Improving Health by Advancing Healthcare: Linking Research Policy and Action. Montreal, Quebec. September 2005.

Gregory D, Way C, Dodd C, Audas R, Parfrey P. Employees' Perceptions of Factors Influencing Absence from Work. 6th International Conference on the Scientific Basis of

Health Services: Improving Health by Advancing Healthcare: Linking Research Policy and Action. Montreal, Quebec. September 2005.

Way, C, **Gregory, D**, Doyle M, Twells, L, Barrett B, Parfrey, P. Acute Care Restructuring in Newfoundland and Labrador, Canada: Impact of Hospital Aggregation on Health Provider Outcomes. Reforming Health Systems: Analysis and Evidence. 6th International Conference: Strategic Issues in Health Care Management. St. Andrew's University, Scotland. September 2004.

Twells, L, Doyle M, **Gregory, D**, Barrett B, Parfrey, P. Acute Care Restructuring in Newfoundland and Labrador, Canada: The History and Impact on Costs. Reforming Health Systems: Analysis and Evidence. 6th International Conference: Strategic Issues in Health Care Management. St. Andrew's University, Scotland, September 2004.

Peer-reviewed Research Reports

Barrett B, **Gregory D**, Way C, Kent G, McDonald J, Batstone A, Doyle M, Curtis B, Twells L, Negrijn C, Jelinski S, Kraft S, O'Reilly DO, Smith S, Parfrey PS. *The Impact of Restructuring on Acute Care Hospitals in Newfoundland*. A report submitted to the Canadian Health Services Research Foundation, Ottawa, Ontario, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador, 2003. www.chsrf.ca

The following papers will be submitted for publication

Gregory DM, Way C, Barrett BJ, Parfrey PS. The Predictive Value of Organizational Culture for Perceived Health Care Quality in Physician Samples. [Manuscript in preparation].

Gregory D, Way C, Dodd C, Audas R, Parfrey P. Employees' Perceptions of Factors Influencing Absence from Work. [Manuscript in preparation].

Summary

The doctoral research was comprised of three empirical studies, each of which led to manuscripts for publication. The first and second empirical studies were components of a program of research funded by the Canadian Health Services Research Foundation, Health Care Corporation of St. John's and the Department of Health and Community Services, Government of Newfoundland and Labrador.

The *first* study was an examination of the perceptions of system reform on health care providers (registered nurses, licensed practical nurses, physicians, allied health professionals, management personnel) in Newfoundland and Labrador. The work in chapters 2, 3, and 4 is a combination of my own work and the team effort on the larger program of research. For the initial survey (2000) the accessible population was restricted to health care staff either employed by or affiliated with provincial acute care institutions. A total of 6401 health care providers comprised the accessible population. Two thousand eight hundred and ninety three surveys were mailed. The overall response rate for 2000 was approximately 42% (n= 1222). The *second* empirical study was conducted in 2002. Health care providers were surveyed shortly after restructuring. In 2002, 2460 questionnaires were mailed out. There were responses from 42% (n = 1034).

The following three papers were written based on the findings of the first two studies and subsequently published in the *Journal of Health Services Research and Policy*. The *Journal of Health Services Research and Policy* granted written permission to include all papers of which I was the principal and/or co-author (see Appendix A).

In Chapters 2, 3 and 4, I am primary author on each publication, having contributed equally with Dr. Christine Way. In chapter 2, health care provider outcomes during and shortly after acute care restructuring in the province were examined. Changes in human resource indicators during six years of restructuring in NL and providers' perceptions of reform impact and attitudinal and behavioral reactions were measured. Comparisons were made between the region exposed to hospital aggregation and closure (i.e., St. John's) and other regions. Increases in average employee and full-time equivalent counts occurred in the St. John's region, despite hospital closure and aggregation. Increases in staff dislocation and turnover were observed but paid sick hours decreased. Sick leave and overtime costs increased. Although perceived workplace conditions and attitudes and behaviors were generally negative, there was evidence of improvement over time, especially in St. John's. Few significant regional or provider group differences were observed on most study variables. Aggregation of hospitals in St. John's did not lead to a decrease in employee counts, or deterioration in human resource indicators or attitudes. However provincial wide initiatives are needed to promote more positive work environments and increase organizational effectiveness.

In chapter 3, changes in providers' perceptions of health care quality and the importance of health reform, as well as patient satisfaction, during and two years after restructuring, were investigated comparing regions of the province exposed (St. John's) and not exposed to hospital aggregation. Most providers felt that restructuring of the health care system was a positive step at both time periods, but scores of providers' perceptions of

health care quality were low both during and two years after. In St. John's perceptions of quality and standards of care improved over time. Patients were extremely satisfied with the admission process and hospital stay at both time periods in St. John's. However, scores declined in 2002 in regions outside St. John's. Aggregation of acute care hospitals is possible without adverse effects on providers' perceptions or patient satisfaction.

The largest health care provider group in the acute care sector is the registered nurses group. In chapter 4, the changes in registered nurses' perceptions of reform impact during seven years of health restructuring, and the attitudinal and behavioral reactions over four years comparing the St. John's region, where hospital aggregation occurred, to other regions of the province were examined. Data were collected on acute care nurses' personal characteristics and perceptions of the importance of reform and its impact on workplace conditions and health care quality in 1995, 1999, 2000, and 2002. As well, nurses' work-related attitudes and turnover intentions were monitored across three time periods (i.e., 1999, 2000, and 2002). Perceived workplace conditions and health care quality as well as attitudes and behaviors were generally negative; however, there was evidence of improvement over time. The temporal sequence of scores suggests that restructuring had an adverse impact on nurses' attitudes. Few significant regional differences were observed. Although health restructuring appears to have had an adverse impact on nurses attitudes in NL, aggregation of hospitals in St. John's was achieved without further deterioration. Provincial wide initiatives are needed to promote more positive work environments and increase organizational effectiveness.

The work in chapters 5 and 6 is a combination of my own work and the team effort on the

larger program of research. The *third* study comprising this dissertation was conducted in 2005. I took the lead in obtaining ethical approval to collect, input and interpret data on registered nurses (RNs) working in Newfoundland and Labrador ten years following the initiation of health system changes (2005). The focus is on RNs, the largest health care provider group. Chapter 5 includes study findings based on the use of path analysis to identify the best predictors of RNs perceived health care quality at two time periods (2002 and 2005). The article focuses on registered nurses' perceptions of organizational culture factors (emotional climate, practice-related issues, and collaborative relations), attitude (trust in employer) and perceived health care quality (quality, safety and standards of practice) during and five years after major organizational reform, and to identify the best predictors of perceived health care quality. The findings are based on survey data from a sample selected from the entire accessible population of nurses after major organizational reform (2005) and a randomly selected sample of registered nurses chosen during the reform process (2000).

In Chapter 6, structural equation modeling analyses was used to test a conceptual model of registered nurses organizational commitment and intent to stay ten years after the implementation of health system reform. Support exists for the negative impact of reform on organizational culture and provider attitudes, but not the potential for changed interrelationships. This study examined and tested front-line registered nurses' perceptions of organizational culture and attitudes and behaviors after system reform, and tested a model linking culture to outcome (organizational commitment and intent to stay). Permission was received from *Health Care Management Review* to include this paper in

my dissertation (see Appendix A).

Two additional manuscripts have been written for publication. The first manuscript presents the findings on the impact of organizational culture on clinical managers' organizational commitment and intent to stay. Hierarchical regression analyses were used to identify the best predictors of outcome for two study years (2000 and 2002). It was published in the May 2007 issue of the *Journal of Nursing Administration*. Dr. Christine Way is primary author on that manuscript and I am second author. The second manuscript is focused on the impact of organizational culture on physicians' perceived health care quality. Hierarchical regression analyses, path analysis and structural equation modeling were used to identify the best predictors of outcome for two study years (2000 and 2002). I am the primary author on this manuscript with Dr. Christine Way, Dr. Brendan Barrett and Dr. Patrick Parfrey. The manuscript was submitted for publication in March 2007.

In Chapter 7, there is a general discussion of the three studies, implications for health policy and research, and conclusions. Overall, the program of research has established the sustained negative impact of reform on employees, physicians, and management personnel. The findings provide a strong empirically based platform for the development of evidenced-based policies and directives.

Personal Contribution to the Program of Research – The Impact of Restructuring on Acute Care Hospitals in Newfoundland and Labrador

During the life of the program of research from 1999 to 2003 I worked as the Project Manager in addition to my role as a co-applicant on the investigative team. In 2003, I co-authored a final report that was submitted to the Canadian Health Services Research Foundation and in 2005 I was part of a team that submitted a series of peer-reviewed scientific papers that were published as a supplement in the *Journal of Health Services Research and Policy*.

My motivation for conducting this doctoral research was based on my experience as Project Manager. I was particularly interested in examining the implications of reforms for acute health care providers and system outcomes in the province of Newfoundland and Labrador. Prior to receiving funding, a skeleton team of researchers completed a review of the literature to identify reliable and valid instruments measuring perceived impact of reform (emotional climate of the workplace, practice-related issues, quality of care, safety concerns, and standards of care), trust in employer, collaborative relations, general job satisfaction, organizational commitment, and intent to stay. Permission was received from the various researchers/agencies to use and modify, where necessary, the selected scales.

As Project Manager and co-investigator I worked with Dr. Christine Way to modify the

Impact of Health Care Reform Scale to enhance item clarity and make it relevant for all health care provider groups. Secondly, we developed a scale to assess satisfaction with managerial and interdisciplinary relations during and following restructuring. Both the Revised Impact of Health Care Reform Scale (RIHCRS) and the Collaborative Relations scale (CR) were validated in a 1999 pilot study of registered nurses. The Employee Attitude Survey (see Appendix B), comprised of all selected scales, was also validated in the pilot study of registered nurses and in subsequent samples of licensed practical nurses and allied health professionals.

In 1999 and 2000 I was involved in either a supervisory committee member or Project Manager capacity on four Master of Nursing theses. Two of the theses reported findings on data obtained from RNs working in the acute care sector and a third on RNs working in community health. The fourth thesis focused on a group of managers working in three institutional health boards. The Conceptual Model of Behavioral Intentions (CMBI) was developed by the research team to highlight possible linkages between the variables of interest during and following system changes. Multiple regression analyses, using a stepwise approach, were used to identify the best predictors of organizational commitment and intent to stay in the original samples. The CMBI received partial support and provided valuable information for possible ways to modify the framework and consider alternate analyses for additional testing in future samples. Greater detail is provided on these changes in Chapter 1.

As Project Manager and co-investigator I worked with Dr. Christine Way to identify a

reliable and valid instrument to measure patient satisfaction in the hospital setting. The Quality Initiatives Program of the Health Care Corporation of St. John's (HCCSJ) had developed *Your Hospital Stay- A Survey for Patients & Families* to measure patients' satisfaction. The content and format of the generic instrument was based on an extensive literature review and comments received from the HCCSJ consumer feedback committee. Based on our previous research with the hemodialysis patient population, perceptions of the care provided by physicians, nurses, and allied health professionals, and the time spent by each of these provider groups to help them understand their illness and treatment requirements emerged as important aspects of patient satisfaction. Permission was received from the Director of Quality Initiatives of the HCCSJ to modify the original instrument. Six items were added to the care/caregiver scale and pilot tested. Exploratory factor analysis revealed a seven-factor solution with strong internal consistency for each factor. The final version of the 36-item Patient Satisfaction Scale consisted of seven scales designed to evaluate the hospital admission process (pre-admission scale, regular admission scale, and emergency admission scale) and hospital stay (accommodations, care process, discharge planning and caregivers).

Collectively, the three studies and five papers constitute a thesis that forms the basis for an ongoing and future program of research into the testing of a theoretical model using structural equation modeling on the impact of health system change on provider outcomes. An offshoot of this research focused on employees (registered nurses, allied health professionals, management personnel and management support staff) work attitudes, perceptions of factors related to work absence and actual turnover in the largest

regional health board (St. John's) in 2004. This was a preliminary attempt to expand the conceptual model to include other provider outcomes. A manuscript on the findings is in progress.

A major focus of the program of research and my subsequent doctoral research was the timely dissemination of the respective study findings and transfer of knowledge to the key stakeholders, decision-makers and policy makers to assist in research informed policy making. The results were disseminated to the intended audiences through the use of direct written (executive summaries and reports) and verbal communication with the Department of Health & Community Services, Regional Health Boards, and professional organizations, as well as through video-teleconferences. The dissemination process also included regional forums comprised of members of the research team and stakeholder representatives (health care system managers and senior administrators, senior executive government representatives and health policy makers, physicians and employees, professional associations and unions) to debate the methods, and discuss possible knowledge utilization that might arise as a result of the respective studies' findings. A number of media interviews were also conducted by the senior investigators throughout the larger program of research. Finally, traditional academic methods (publication in the form of a journal supplement and presentations at national and international conferences) were also utilized as a medium for knowledge transfer. Dissemination activities continued throughout the course of my doctoral studies. A detailed overview of the knowledge transfer activities related specifically to health care providers over the course of the program of research and during my doctoral research is presented in Appendix C.

CHAPTER 1

Introduction and Overview

1.1 Context of health system reform in Newfoundland and Labrador: Driving forces, options and policy implementation

Prior to the 1990s, regionalization of health services was not a driving force in the development or management of provincial health care systems.¹ In the early 1990s, fiscal constraint partly attributable to cutbacks in federal government funding to the provinces for health and social services, and escalating costs particularly in relation to hospitals, drugs and health technology emerged as powerful driving forces for change within the Canadian health care system. Provinces considered a number of options, including regionalization of health services, to deal with the growing crisis in the organization and delivery of health care.

Regionalization of health services involves devolution of authority from the provincial level to appointed or elected boards responsible for the delivery of selected health care services and programs to a defined geographic area.² The primary goals of regionalization included: the containment of escalating hospital costs; increased efficiency and effectiveness; integrated care; and the provision of a system more responsive to the needs of the local population.

In Newfoundland and Labrador (NL) in the late 1980s and early 1990s, a heavy reliance on institutional health care services was evident. Commissions and task forces were formed to identify solutions to this emergent problem.³⁻⁴ Key factors identified by senior

administrators and health department officials leading to the introduction of regionalization in NL included (1) forces external to the province, (2) forces within the province, but external to the health care system, and (3) forces within the health care system itself.¹ Key informants in Neville et al.'s study also identified four key drivers for system reform: cost and financial constraints; perceived inefficiency within the existing system; support for decentralization nationally and internationally; and desire for more local control and innovation in the public sector within the province. The provincial government availed of a window of opportunity to reform its health care system, primarily through its policy of regionalization of health services under the auspice of regional health boards, a similar policy adopted by all Canadian provinces except Ontario.

The implementation of the regionalization policy in NL resulted in the creation of six health care regions and fourteen health boards in 1995/96.⁵ Integrated boards responsible for acute care, long-term care and community care services were initiated in two regions (Labrador and Northern). In three regions (Western, Central East and Central West) acute care and long-term care were combined and were responsible to institutional boards, but separate community health boards were created. Three boards governing acute care institutions, long-term care institutions and community care, as well as one provincially focused board addressing the cancer treatment and research needs of the province were established in the St. John's region. In 1998, the scope of services provided by the community and integrated boards was expanded to include social services (child welfare,

rehabilitation and corrections). The history of the evolution and implementation of regionalization in NL has been documented by Twells et al.⁶ (see Appendix D)

The Health Care Corporation of St. John's (HCCSJ) served a predominantly urban population of 193,355 and also provided tertiary care for the province. In 1995, the Board and its senior administration developed a strategic plan to merge hospitals, a long-standing and highly charged political issue, which involved implementing program management across hospitals to facilitate change, communicating the plan to employees and the public, and reducing the number of acute care institutions from nine to five by 2000.⁷ Downsizing of management personnel and support staff, but not frontline workers, also occurred in the region. The other regional boards served a predominantly rural population, and similar to the St. John's region experienced downsizing of management personnel and support staff and restructuring, but were not exposed to the problems associated with hospital closures and mergers.

1.2 Impetus for Conducting a Program of Research on Centralization and Aggregation of Health Services

Due to the paucity of information on the evaluation of regionalization and amalgamation of hospitals at a local and national level, an evaluative program of research was designed to collect and analyse data on the impact of change on the acute care sector. The proposed evaluative program was similar to the system-wide approach taken by Ontario's

hospitals in 1998, encompassing four dimensions: clinical use and outcomes; patient perceptions of hospitals; financial performance; and system integration and change.⁸ The focus was on the acute care sector, as it was responsible for the largest proportion of the provincial health care budget. A major focus of this study was the evaluation of the endeavours by the HCCSJ to aggregate acute care hospitals. Key stakeholders (Health Care Corporation, Department of Health and Community Services), in consultation with the Clinical Epidemiology Unit of the Faculty of Medicine, conceived the idea of devising an evaluative plan that could receive matched co-funding from the Canadian Health Services Research Foundation. Drs. Patrick Parfrey and Brendan Barrett took the lead to obtain the collaboration of the Chief Executive Officers of the other provincial health care boards. A grant was written by an interdisciplinary team of researchers, policy-makers, and decision-makers and submitted for funding.

The overall study objectives were:

1. to systematically capture and document changes in the health care system through historical analysis of health care delivery;
2. to collect, analyse and interpret information related to the health care system on costs, utilization, efficiency, provider and patient outcomes, and quality of medical care;
3. to disseminate the information collected to the various stakeholders, including hospital administration, regional board members, and the Provincial Ministry of Health and Community Services;

4. to compare change within the St. John's region, as it experienced amalgamation of hospitals, with the regions outside St. John's which had not been exposed to hospital mergers.

1.3 Program of Research for Dissertation

The second study objective of the larger program of research provided the basis for my doctoral work. Although provider and patient outcomes were given equal weight in the larger project, the attitudes and perceptions of health care providers was the primary focus of my dissertation research. This was because the database did not allow for examination of potential linkages between provider and patient perceptions of health care quality.

1.4 Original Conceptual Model

The conceptual framework guiding the original program of research was the Conceptual Model of Behavioral Intentions (CMBI). The CMBI was based on an integrated causal model of turnover behavior⁹ and determinants and consequences of psychological contract violation.¹⁰⁻¹² Several factors were conjectured to influence behavioral intentions (intent to stay), including determinants (importance of reform, organizational culture and health care quality), covariates (intermediate outcomes of psychological contract violations, restructuring satisfaction, job satisfaction, and organizational commitment),

and correlates (select personal characteristics and staffing issues). The covariates also served as mediators buffering the effects of determinants and preceding covariates on outcome. Figure 1.1 illustrates the relationships between the major variables within the context of health system reform.

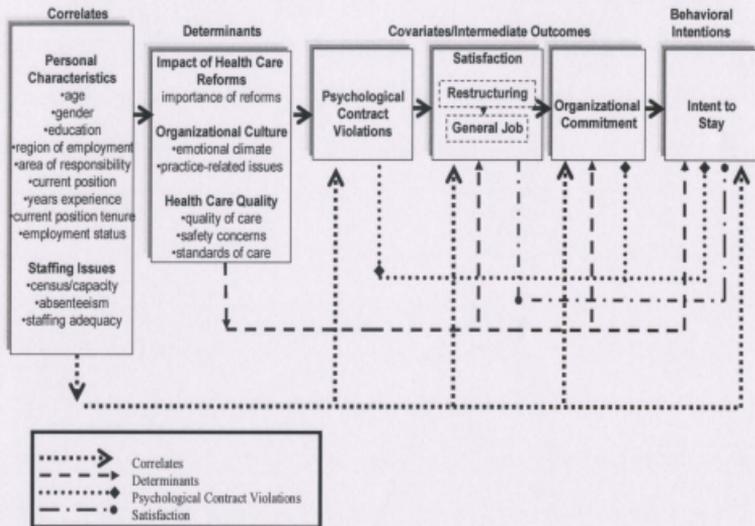


Figure 1.1: Conceptual Model of Behavioral Intentions

Source: Way, C., Gregory, D., Barrett, B., & Parfrey, P.S. (1999). Conceptual Model of Behavioral Intentions. St. John's: Memorial University of Newfoundland, Faculty of Medicine.

Theoretical and empirical support exists in the literature for the hypothesized relationships among study variables. Common attributes of culture (team work, collaborative relations, leadership, quality of work life, communication/information) are considered important for creating conducive work environments¹³⁻¹⁴, positive provider outcomes, quality patient care and optimal health outcomes.^{13,15} A meta-analytical study found that positive perceptions of leadership behaviours and practices, organizational support, participatory style decision-making, justice, fairness, and leadership style increased trust in leadership.¹⁶ Other meta-analytic studies determined that work environment and job characteristics are strongly associated with job satisfaction¹⁷⁻¹⁸.

There is also empirical support from meta-analytics studies for multiple correlates of commitment, including job and organizational characteristics (job challenge and scope, autonomy, and centralization), group/leader relations and role states (role ambiguity, conflict, and overload).¹⁹ Meta-analytic studies support the importance of diverse organizational culture factors for intent to leave.²⁰ Finally, meta-analytic findings also support the strong association of trust to satisfaction, commitment and intent to quit¹⁶, and satisfaction to commitment¹⁹ and intent to leave¹⁸.

Several causal models have been proposed to explain how various factors impact nursing turnover.^{9, 18, 21-23} Despite variant predictive factors most of these models depict a multidimensional, linear process incorporating determinants (job-related, work environment), intervening attitudes (job satisfaction, organizational commitment),

behavioural intentions (intent to stay/leave, etc.), and correlates (i.e., personal characteristics). As well, determinants are conjectured to exert direct effects on attitudes, and indirect effects on turnover intentions via attitudinal states. Trust, not normally a part of the turnover models, is surfacing as an important predictor of satisfaction, commitment and intent to stay.^{11-12, 16, 24}

Despite empirical support suggesting that RNs' are dissatisfied with the quality of nursing care in the aftermath of system restructuring²⁵⁻³⁷, less is known about factors influencing those perceptions. Few research studies have explored the linkages between RNs' perceptions of health care quality and work environment factors (autonomy, collaborative relations, communication, support, staffing levels, care delivery models)^{26-29, 32-33, 36, 38-42} and trust in employer²⁹⁻³⁰.

1.5 Revised Conceptual Model

Preliminary analyses of the data collected in 1999 and 2000 revealed conflicting findings on the best predictors of behavioral intentions. As a result of these analyses and new insights gleaned from the research and theoretical literatures, we had to re-conceptualize our notions concerning the feasibility of focusing on one final outcome. Several modifications were made to the original CMBI. First, the feasibility of combining quality of care, safety issues and standards of care scales to form a composite score of perceived health care quality was confirmed by factor analysis. This step facilitated the inclusion of

health care quality as a prominent outcome versus an antecedent of outcome. Second, the collaborative relations factor was treated as a determinant as opposed to a covariate in the model. Third, factor analysis confirmed the feasibility of combining emotional climate, practice issues, and collaborative relations scales to generate one construct (organizational culture). Finally, organizational commitment was treated as final outcome as opposed to an intermediate outcome in the revised model.

Hierarchical regression analysis was chosen as the appropriate basis for identifying groups of predictors for subsequent model testing using path analysis and/or structural equation modeling. This work subsequently became the central focus of my doctoral research.

The Model of Health Care Provider Outcome hypothesizes that determinants (emotional climate, practice-related issues, and collaborative relations) exert direct effects on intermediate outcomes (trust in employer and job satisfaction) and outcome (organizational commitment, intent to stay and perceived health care quality). Intermediate outcomes exert direct effects on outcome and mediate the effects of culture. Finally, satisfaction mediates the effects of trust on commitment, intent and perceived quality. More positive perceptions of culture, greater trust and increased satisfaction are predictive of greater commitment and intent to stay and more positive perceptions of health care quality. Figure 1.2 illustrates the relationships between the major variables within the context of health system reform that led to the research questions, the three studies and the five manuscripts.

The model was tested with several groups of health care providers. In the second and third studies, samples of registered nurses (RNs), the largest health care provider group, were used to test a model linking organizational culture factors to trust and perceived health quality. This model was also tested with physician samples from the first and second studies, the group with the most comparable ratings to RNs on perceptions of reform impact. The RN samples from the second and third studies were also used to test a model linking organizational culture factors to trust, satisfaction and organizational commitment, and a model linking organizational culture to trust, satisfaction and intent to stay. These models were also tested with first-line managers from the first and second studies.

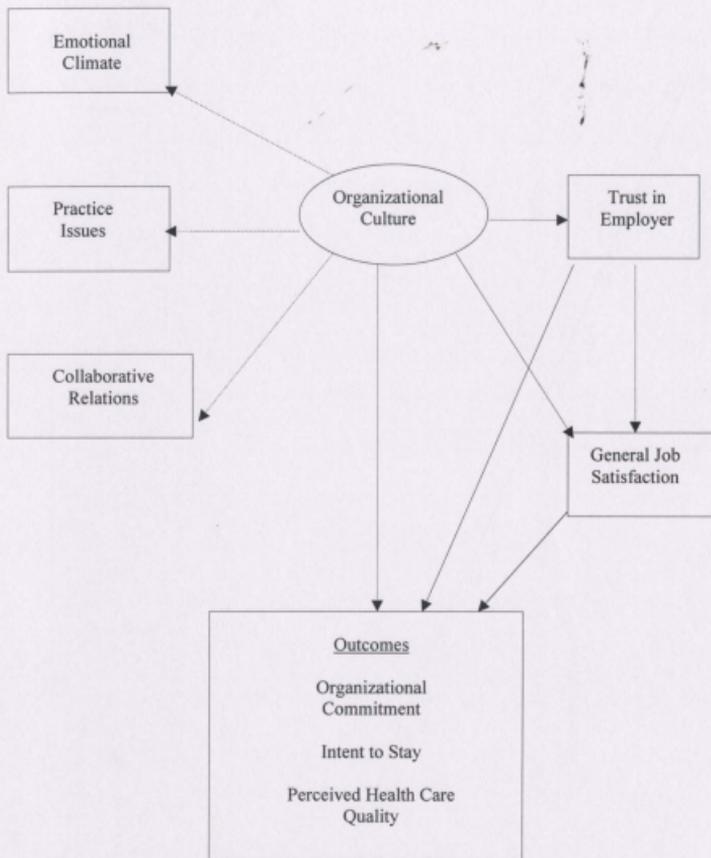


Figure 1.2 Model of Health Care Provider Outcome

1.6 Research Questions

The specific research questions guiding the dissertation work were as follows:

1. What are health care providers' perceptions of the importance of reform, organizational culture (emotional climate of the workplace, practice-related issues and collaborative relations), health care quality (quality of care, safety, standards of care), work-related attitudes (trust in employer, job satisfaction, organizational commitment), and expressed likelihood of staying with current employers during and following health system reform in NL?
2. Are there significant intercorrelations among health care providers' ratings of organizational culture, trust in employer, job satisfaction, and the outcomes organizational commitment, intent to stay and perceived health care quality?
3. What impact, if any, do demographic variables (personal characteristics, group membership and region) have on shaping provider perceptions of the impact of reform on organizational culture and health care quality and provider work-related attitudes and behaviors?
4. Are perceptions of culture (emotional climate, practice-related issues and collaborative relations) significant independent predictors of outcomes?
5. Does trust in employer and job satisfaction mediate the predictive power of

organizational culture for organizational commitment, intent to stay, and perceived health care quality?

6. Does job satisfaction mediate the predictive power of trust in employer for organizational commitment, intent to stay, and perceived health care quality?

The specific findings for each of the research questions are outlined as individual chapters in this dissertation. Chapters 2, 3, and 4 address research questions one to three. Chapters 5 and 6 address research questions four to six.

References

1. Neville D, Barrowman G, Fitzgerald B, Tomblin S. Regionalization of health services in Newfoundland and Labrador: perceptions of the planning, implementation and consequences of regional governance. *J Health Serv Res Policy* 2005; **10** (Suppl 2): 12-21.
2. Canadian Center for Analysis of Regionalization and Health.
www.regionalization.org/regionalization.html
3. Government of Newfoundland and Labrador. *Report of the Royal Commission on Hospital and Nursing Home Costs*. 1984.
4. Dobbin LC. *Report on the reduction of hospital boards*. St. John's, Newfoundland. February, 1993.
5. Department of Health, Government of Newfoundland. *Health Reform Initiatives: Changing Realities* 1994.
6. Twells L, Doyle M, Gregory D, Barrett B, Parfrey P. Acute Care restructuring in Newfoundland and Labrador: the history and impact on expenditure. *J Health Serv Res Policy* 2005; **10**(Suppl 2): 4-11.
7. Way CY, Gregory DM, Doyle M, Twells L, Barrett BJ, Parfrey PS. Health care provider outcomes during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005b; **10** (Suppl 2): 58-67.
8. *Hospital Report '99: A Balanced Scorecard for Ontario Acute Care Hospitals*. Ontario Hospital Association and the University of Toronto, 1999.

9. Mueller C, Price J. Economic, psychological, and sociological determinants of voluntary turnover. *J Behav Econ* 1990; **19** (3): 321-325.
10. Robinson SL, Rousseau DM. Violating the psychological contract: Not the exception but the norm. *Journal of Organizational Behavior* 1994; **15**: 245-259.
11. Turnley WH, Feldman DC. Psychological contract violations during corporate restructuring. *Hum Resource Manage* 1998; **37**(1): 71-83.
12. Turnley WH, Feldman DC. The impact of psychological contract violations on exit, voice, loyalty, and neglect. *Hum Relat* 1999; **52** (7): 895-922.
13. Gershon RRM, Stone PW, Bakken S, Larson E. Measurement of organizational culture and climate in healthcare. *J Nurs Admin* 2004; **34** (1): 33-40.
14. Scott T, Mannion R, Davies H, Marshall M. The quantitative measurement of organizational culture in health care: A review of available instruments. *Health Serv Res* 2003; **38** (3): 923-945.
15. Snow JL. Enhancing work climate to improve performance and retain valued employees. *J Nurs Admin* 2002; **32** (7/8): 393-397.
16. Dirks KT, Ferrin DL. Trust in leadership: Meta-analytic findings and implications for research and practice. *J Appl Psychol* 2002; **87**(4): 611-628.
17. Blegen MA. Nurses' job satisfaction: A meta-analysis of related variables. *Nurs Res* 1993; **42** (1): 36-41.
18. Irvine DM, Evans MG. Job satisfaction and turnover among nurses: Integrating research findings across studies. *Nurs Res* 1995; **44** (4): 246-253.
19. Mathieu JE, Zajac DM. A review and meta-analysis of the antecedents, correlates,

- and consequences of organizational commitment. *Psychol Bull* 1990; **108** (2): 171-194.
20. Hayes LJ, O' Brien-Pallas L, Duffield C, Shamian J, Buchan J, Hughes F, Laschinger HKS, North N, Stone PW. *Intl J of Nurs Stud*: 2006; **43**(2): 237-263.
21. Alexander JA, Lichtenstein R, Oh HJ, Ullman E. A causal model of voluntary turnover among nursing personnel in long-term psychiatric settings. *Res Nurs Health* 1998; **21**: 415-427.
22. Cavanagh SJ, Coffin DA. Staff turnover among hospital nurses. *J Adv Nurs* 1992; **17**:1369-1376.
23. Taunton RL, Boyle DK, Woods CQ, Hansen HE, Bott MJ. Manager leadership and retention of hospital staff nurses. *West J Nurs Res* 1997; **19** (2): 205-226.
24. Laschinger HKS, Finegan J, Shamian J. The impact of workplace empowerment, organizational trust on staff nurses' work satisfaction and organizational commitment. *Health Care Manage Review* 2001; **26**: 7-23.
25. Aiken LH, Clarke SP, Sloane DM. Hospital restructuring: does it adversely affect care and outcomes? *J Nurs Admin* 2000; **30** (10): 457-465.
26. Burke RJ. Nursing staff attitudes following restructuring: The role of perceived organizational support, restructuring process and stressors. *Int J Sociol Social Policy* 2003; **23**(8/9): 129-157.
27. Burke RJ. Hospital restructuring stressors, support, and nurse staff perceptions of unit functioning. *Health Care Manag* 2005; **24** (1): 21-28.
28. Cummings G, Estabrooks CA. The effects of hospital restructuring that included

- layoffs on individual nurses who remained employed: A systematic review of impact. *Int J Sociol Social Policy* 2003; **23** (8/9): 8-53.
29. Laschinger HKS, Shamian J, Thomson D. Impact of magnet hospital characteristics on nurses' perceptions of trust, burnout, quality of care, and work satisfaction. *Nurs Econ* 2001; **19**: 209-219.
30. Way CY, Gregory DM, Baker N, LeFort S, Barrett BJ, Parfrey PS. Attitudes and perceptions of RNs during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005; **10** (Suppl 2): 22-30.
31. Woodward CA, Shannon HS, Cunningham C, McIntosh J, Lendrum B, Rosenbloom D, et al. The impact of re-engineering and other cost reduction strategies on the staff of a large teaching hospital: A longitudinal study. *Med Care* 1999; **37**: 556-569.
32. Aiken LH, Clarke SP, Sloane DM. Hospital staffing, organization, and quality of care: cross-national findings. *Int J Qual Health Care* 2002; **14**: 5-13.
33. Arnetz BB. Staff perception of the impact of health care transformation on quality of care. *Int J Qual Health Care* 1999; **11**: 345-351.
34. Baumann A, Giovannetti P, O'Brien-Pallas L, Mallette C, Deber R, Blythe J, et al. Healthcare restructuring: The impact of job change. *Can J Nurs Leadership* 2001; **14**(1): 14-20.
35. Gregory DM, Way CY, Barrett BJ, Parfrey PS. Health care quality from the perspective of health care providers and patients shortly after acute care

- restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005; **10** (Suppl 2): 48-57.
36. McGillis Hall L. Nursing staff mix models and outcomes. *J Adv Nurs* 2003; **44** (2): 217-226.
37. Shindul-Rothschild J, Long-Middleton E, Berry D. 10 keys to quality care. *Am J Nurs* 1997; **97** (11): 35-43.
38. Burke RJ. Restructuring stressors and perceived hospital effectiveness. *Can J Nurs Leadership* 2001; **14** (1): 21-26.
39. O'Brien-Pallas L, Thomson D, McGillis Hall L, Pink G, Kerr M, Wang S, Li X, Meyer R. *Evidence-based Standards for Measuring Nurse Staffing and Performance*. Ottawa, On: Canadian Health Services Research Foundation. September 2004. www.chsrf.ca.
40. McGillis Hall L, Doran DI, Baker GR, Pink GH, Sidani S, O'Brien-Pallas L, Donner GJ. *A study of the impact of nursing staff mix models and organizational change strategies on patient, system and nurse outcomes*. A summary report of the nursing staff mix outcome study submitted to the Canadian Health Services Research Foundation, 2001.
41. McGillis Hall L, Doran D. Nurse staffing, care delivery model, and patient care quality. *J Nurs Care Qual* 2004; **19**: 27-33.
42. Sochalski J. Is more better? The relationship between nurse staffing and the quality of nursing care in hospitals. *Med Care* 2004; **42** (Suppl 2): II-68-II-73.

CHAPTER 2

Health Care Provider Outcomes During and Shortly After Acute Care Restructuring in Newfoundland and Labrador

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Objectives: To monitor changes in human resource indicators during six years of restructuring in Newfoundland and Labrador, and to measure providers' perceptions of reform impact and attitudinal and behavioral reactions comparing changes in the St. John's region, where hospital aggregation occurred, to other regions.

Methods: Data on human resource indicators from 1995/96 to 2001/02 were obtained and analyzed. The Employee Attitude Survey was sent to acute care staff ($N = 5353$) to assess perceptions of reform impact on workplace conditions, work-related attitudes, turnover intentions, and personal characteristics. The response rate for 2000 and 2002 was approximately 42% ($n = 1222$ and 1034 , respectively). Only respondents to both surveys ($n = 589$) were used in the analysis.

Results: Increases in average employee and full-time equivalent numbers occurred in the St. John's region, despite hospital closure and aggregation. Increases in staff dislocation and turnover were observed, but paid sick hours decreased. Sick leave and overtime costs increased. Although perceived workplace conditions, and attitudes and behaviors were generally negative, there was evidence of improvement over time, especially in St. John's. Few significant regional or provider group differences were observed on most study variables.

Conclusions: Aggregation of hospitals in St. John's did not lead to a decrease in employee counts, or deterioration in human resource indicators or attitudes. However, province-wide initiatives are needed to promote more positive work environments and increase organizational effectiveness.

Introduction

The Canadian health care system is predominantly publicly funded, and provides universal coverage. Rising costs and declining financial resources pressured provincial governments, which are responsible for health care delivery, into implementing reforms that could contain costs while maintaining high quality. Newfoundland and Labrador (NL) is a Canadian province with a declining population spread over a relatively large geographic area. Similar to other provinces,¹⁻² a large portion of health care resources is spent on hospitals and affiliated institutions, with substantial amounts allocated to salaries.³

Similar to other Canadian provinces,⁴⁻⁶ NL relied primarily on regionalization of health boards between 1994 and 1996 to rationalize services and promote system efficiency.⁷ Regionalization led to the creation of six health regions and the formation of 14 health boards from approximately 60 hospital, community and long-term care health boards.⁸ Most regions had separate community and institutional boards, except for the two northern regions of the province, where integrated boards were formed from a merger of institutional and community health boards. The institutional boards were comprised of long-term care, health centres, hospitals and rehabilitation centers, with the exception of St. John's where the nursing home board remained a separate entity.

The integrated and institutional boards outside St. John's serve a predominantly rural population. Consolidation of local boards and management structures resulted in 40%-

50% reductions in management personnel.⁸ Although the number of acute care hospitals remained unchanged, acute care beds were reduced by 14.5% (i.e., 953 to 815) from 1995 to 2002.

Additional reform strategies (i.e., downsizing, restructuring, reengineering, and institutional mergers and closures) were mostly concentrated in the St. John's region.⁷ The Health Care Corporation of St. John's (HCCSJ), the largest provincial institutional board, serves a predominantly urban population totaling 200,000,⁹ and is also the major provincial tertiary centre for several specialties. Over a five-year period (1995-2000), the HCCSJ experienced organizational, clinical, and site integration.¹⁰ Although the number of acute care beds was reduced by 16.4% (i.e., 940 to 786) from 1995 to 2002, downsizing was limited to significant reductions in management and support staff (i.e., approximately 50% per group).

There is limited empirical evidence to support the premise that the anticipated benefits (e.g., cost-containment, integration of services, and effectiveness of health care delivery) of devolved decision-making through regionalization have been achieved in Canada.⁵ In contrast, there is a developing research base suggesting that restructuring of the health care system has had negative effects on health care providers (e.g., work-related attitudes, perceptions of the work environment, absenteeism, turnover).¹¹ A potential confounding variable in the current study, not referenced in other studies, was the presence of provincial labour unrest. The first survey of registered nurses occurred in 2000, 10

months after a provincial strike, during which they were legislated back to work. Provincial strike action was also taken by lab/X-ray workers in 2000, hospital support workers in 2001 and physicians in 2002. The major issue in these strikes was the level of compensation, although maintenance of employee numbers was a secondary issue.

This article presents data on staff outcomes in NL, during and shortly after acute care restructuring. One purpose was to monitor serial changes in human resource indicators (e.g., external hires, internal transfers, sick leave costs and hours). Another purpose was to monitor perceptions of reform impact (i.e., emotional climate of the workplace, practice-related issues, and managerial and interdisciplinary relations), and attitudinal and behavioral reactions (i.e., job satisfaction, organizational commitment, trust in employers, and turnover intentions) in 2000, the peak period of worker dislocation in St. John's, and 2002 shortly after hospital aggregation was completed. A final purpose was to examine regional differences in provider outcomes, because it was hypothesized that the St. John's region, exposed to more extensive reform, would have more negative outcomes than other regions.

Methods

Procedure

The Human Investigation Committee of the Faculty of Medicine, Memorial University of Newfoundland, approved the study protocol. Monitoring of key aspects of health care delivery in several regions of NL was undertaken from 1995 to 2002. The evaluation

included human resource indicators and staff reactions (i.e., registered nurses [RNs], licensed practical nurses [LPNs], allied health professionals [AHPs], managers [MP] and physicians [MDs]). St. John's was compared with other regions on select indicators because the former region was exposed to substantial hospital closure and aggregation. Survey data were collected via mail-outs of confidential questionnaires to potential respondents' home addresses. Reminder letters were sent two weeks later.

Data Collection Instruments

Data collection instruments included audited reports from the Financial Services Division of the Department of Health and Community Services,¹² Annual Benchmarking Surveys of the Human Resources Benchmarking Network,¹³⁻¹⁹ Human Resource Indicator Database,²⁰ and Employee Attitude Surveys.

Human resource indicators

Indicators selected for investigation included employee count, external hires, internal transfers, and sick hours per eligible employee. HCCSJ trends were compared with the national health sector average from 1996/97 to 2001/02 and regions outside of St. John's for 2000/01 only.

Sick leave and overtime costs

Annual audited expenditures for acute care hospitals were obtained for 1995/96 to 2000/01 and analyzed by a health economist. The analysis focused on determining sick leave and overtime costs as a percentage of regular work expenditures by provider group.

Employee Attitude Survey (EAS)

The EAS used standardized scales from the research literature, as well as researcher-developed scales (see Appendix), to collect data on perceptions of health care reform impact on workplace conditions, work-related attitudes, behavioral intentions, and key personal characteristics. The Collaborative Relations (CS) scale, developed by Way and Gregory, assessed satisfaction with managerial and interdisciplinary relations following restructuring.²¹ Two subscales of the Revised Impact of Health Care Reform Scale (RIHCRS)²² examined perceptions of the emotional climate of the workplace and practice issues. The RIHCRS is a modified version of the Impact of Health Care Reform Scale (IHCRS) used in surveys of RNs by Way²² and Pyne.²³ The IHCRS was found to have good construct validity and fairly high internal consistency, as measured by Cronbach's alpha (i.e., 0.87-0.83 for the total scale).²²⁻²³

Work-related attitudes and behavioral intentions were measured with several scales. A modified version of the General Job Satisfaction scale (GJS) of the Hackman and Oldman Job Diagnostic Survey²⁴ measured overall job satisfaction. Commitment was assessed with Mowday *et al.*'s Organizational Commitment Questionnaire (OCQ).²⁵

The Intent to Stay scale (IS), adapted from Turnley and Feldman's Intent to Quit and Job Search Scales,²⁶ measured turnover intentions. Trust in employers was measured with Turnley and Feldman's Psychological Contract Violation (PCV) scale.²⁶

Standardized measures examined personal characteristics (e.g., occupation, years of work in health care, years in current position, geographic region, gender, age, etc).

Survey Sample

For the initial survey (2000) and at follow-up (2002), the accessible population was restricted to health care staff either employed by, or affiliated with provincial acute care institutions. In 2000, stratified random samples of RNs and LPNs were selected from relevant association/council mailing lists. While a second stratified random sample of LPNs was selected at follow-up, the RNs sample was restricted to respondents from the 2000 survey due to changes in the association's policy on release of names for research purposes. Initial and follow-up surveys were also administered to the entire population of AHPs and MDs, and MP from three institutional boards (i.e., St. John's and two outside boards).

A total of 9237 health care providers comprised the accessible population. Details on the inclusion criteria and the use of power analysis techniques for sample selection are presented elsewhere.²⁷ The response rate for 2000 and 2002 was approximately 42% (n=1222 and 1034, respectively). The number of respondents to both surveys was 589.

Data Analysis

Survey data were coded and entered into the Statistical Package for the Social Sciences (SPSS) for analysis. Analyses focused on time trends and inter- and intra-regional differences. Frequencies and percentages were used to describe the sample's personal characteristics. χ^2 tests assessed the comparability of responders in 1999/2000 and 2001/2002, with those responding at both time periods on key characteristics. Scale scores were summed and divided by the total number of items to determine scale means. Cronbach's alpha coefficients assessed the internal consistency of individual scales.

Paired-samples *t*- tests were used to assess changes in scale scores over time for the sub-sample completing the survey at both time periods, and for each provider group. As well, independent-samples *t*- tests were used to compare total responders with the 2000 and 2002 surveys on major study variables. Due to the number of associations examined, findings were reported as significant if the *p* value was < .01. Effect sizes for significant changes were calculated with Cohen's *d* statistic.²⁸ Study results were the same whether the repeat sample or total samples at both time periods were used. Thus, the decision was made to present findings on the repeat sample only.

Analysis of variance (ANOVA) tests were also used to identify group differences on scale scores at each time period. With unequal group sizes, the *post-hoc* Scheffé test investigated pairwise differences. Bivariate correlations were used to evaluate relationships among major study variables.

Results

Sample characteristics

Table 2.1 summarizes demographic and work characteristics of responders to the first and second surveys, and the repeat sample. Tests of difference (i.e., χ^2 and t -tests) revealed that the repeat sample was representative of the total responders at initial or follow-up only, on most characteristics, except position tenure and years of work experience.

Respondents to both surveys were primarily female (71%), were distributed equally between St. John's and outside regions, averaged 44 years of age, had more than 10 years of work experience, and had been in their current positions for more than five years.

Repeaters were comprised of six provider groups: RNs (26.8%), MDs (26.5%), AHPs (19.9%), MP (15.8%), and LPNs (11%).

Table 2.1 Demographic and Work Characteristics of Respondents in Years 2000, 2002, and those who responded in both 2000 and 2002.

	Responded Yr 2000 (n = 1222)		Responded Yr 2002 (n = 1034)		Responded at At both time periods (n = 589)	
	N	%	N	%	N	%
Sex ¹						
Male	405	33.2	331	32.1	172	29.3
Female	816	66.8	700	67.9	415	70.7
Region ¹						
St. John's (urban)	592	48.5	496	48.3	292	49.8
Outside St. John's (rural)	628	51.4	531	51.7	294	50.2
Age (mean, sd) ¹	41.8 (9.4)		43.5 (9.1)		43.8 (8.9)	
Total Work Experience ²						
≤ 9 Years	248‡	28.3	161	22.2	116	27.0
10 to 19 years	294	33.6	244	33.7	160	37.2
≥ 20 years	333	38.1	319	44.1	154	35.8
Current Position Tenure ²						
< 4 years	360‡	41.2	231	32.0	171	39.9
5 to 9 Years	225	25.7	213	29.5	120	28.0
≥ 10 years	289	33.1	279	38.6	138	32.2
Years in Independent Practice ³						
≤ 10 years	115	34.7	105	34.4	44	28.2
11 to 20 years	112	33.8	92	30.2	63	40.4
> 20 years	104	31.4	108	35.4	49	31.4
Years Practicing in NL ³						
≤ 10 years	134	39.9	138	44.8	53	34.2
11 to 20 years	111	33.0	80	26.0	60	38.7
> 20 years	91	27.1	90	29.2	42	27.1

Note: Numbers do not always add to total number of responders due to missing data.

¹ Represents Total Sample; ² Excluding Physicians; ³ Physicians Only. ‡ p<.001

Human Resources Indicators

Table 2.2 presents data on human resource indicators for the St. John's region during and following restructuring. The average number of employees at the HCCSJ increased steadily up to 1999/00 and stabilized in 2001/02. As well, an initial decrease in the average full-time equivalent count was followed by a steady increase up to 2000/01, before starting a downward trend in 2001/02. In its second year of operation (1996/97), the external hire rate for the HCCSJ almost doubled (i.e., 4.8% to 9.1%), declined the following year, and increased again before declining in 2001/02. The total hires ratio (i.e., sum of external hires and internal transfers as a proportion of employee counts) is reflective of major staff dislocation (i.e., 11% in 1996/97 to 34.8% in 1999/00, and declining to 15.7% in 2001/02). The large ratio in 1999/00 was mainly due to the internal job change of approximately 1100 of the 2198 RNs. The turnover rate (separations as a proportion of employee count) declined steadily for the first 3 years (i.e., 12.2% to 4.9%), but increased to 11.4% in 2000/01 before declining to 8%. Paid sick hours per eligible employee for the HCCSJ declined significantly between 1996/97 and 2001/02 (111.4 vs. 86.9 hours).

In 2000/01, after peak dislocation in St. John's, the external hire rate, total hires ratio, and turnover rates for regions outside St. John's were below HCCSJ levels (i.e., 9.3% vs. 10.7%, 21.8% vs. 25.7%, and 5.1% vs. 11.4%). The average paid sick leave days per full-time equivalent varied considerably between the St. John's region and outside regions for 2000/01 and 2001/02. In the St. John's region, the number of paid sick leave days

declined from 13.84 to 13.51. Comparatively, the number of paid sick leave days increased slightly from 16.26 to 16.32 in regions outside of St. John's (data not shown).

Table 2.2 Employee Count, External Hires, Internal Transfers, Turnover and Employee Wellness Indicators for the St. John's region

Indicator	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02
Employee Count						
Average employee count	5888	6401	6541	6754	6757	6766
Average Full-time Equivalent Count	5304.88	5193.04	5661.91	5917.38	5998.89	5951.05
External Hires						
Total # of external hires	284	583	525	735	721	451
External Hire Rate	4.8	9.1	8.0	10.9	10.7	6.7
Internal Transfers						
#Internal Transfers	370	997	834	1614	1016	608
Internal Transfers to Total Hires Ratio	56.6	63.1	61.4	68.7	58.5	57.4
Total Hires Ratio	11.1	24.7	20.8	34.8	25.7	15.7
Turnover						
Turnover rate	12.2	10.0	4.3	4.9	11.4	8.0
Employee Wellness						
Sick hours/per eligible employee	111.4	105.2	94.4	94.4	91.1	86.9

Data Source: Report of the Annual Benchmarking Surveys (1996-2002) – Human Resources Benchmarking Network

Sick leave costs for the HCCSJ and regions outside St. John's for 1995/96 and 2000/01 are summarized in Table 2.3. For the HCCSJ, sick leave costs increased slightly for RNs and AHPs, decreased for hospital support workers, and remained stable for MP.

Comparatively, increases in sick leave costs for regions outside of St. John's were similar to the HCCSJ for AHPs, but much higher for RNs. As well, outside regions experienced substantial increases for hospital support workers, but decreases for MP.

Table 2.3 also presents comparative data on overtime costs for the HCCSJ, and outside regions. Overtime costs increased for all provider groups in both regions, but were greater for RNs. As well, these costs increased more markedly for the HCCSJ than outside regions, except for MP which were similar across regions.

Table 2.3 Sick Leave and Overtime Costs as a % of Regular Work Expenditures

Group	1995/96		2000/01		Absolute change in %	
	St. John's	Other	St. John's	Other	St. John's	Other
Sick Leave						
HSW*	9.6	8.7	8.0	12.1	-1.6	+3.4
RN	7.8	7.5	8.8	10.8	+1.0	+3.3
AHP	3.0	2.6	3.9	3.8	+0.9	+1.2
MP	2.9	3.4	2.8	2.5	-0.1	-0.9
Overtime						
HSW*	2.4	1.5	7.1	3.9	+4.7	+2.4
RN	2.9	1.7	10.8	7.1	+7.9	+5.4
AHP	1.7	1.1	5.1	2.4	+3.4	+1.3
MP	0.9	0.5	3.4	3.0	+2.5	+2.5

HSW = Hospital Support Worker (*Includes Licensed Practical Nurses); RN = Registered Nurse; AHP = Allied Health Professionals; MP = Management.

Workplace Conditions and Attitudes

Table 2.4 presents descriptive statistics for the repeat sample, and each provider group. For both time periods, most respondents were concerned about the negative impact of reform on the emotional climate of the workplace (e.g., stress due to increased job demands, less respect and recognition, less supportive co-workers, etc.), practice issues (i.e., less staff-management communication, decision latitude, and continuing education opportunities), and managerial and interdisciplinary relations (e.g., less visible and accessible managers, more time spent on conflict). Despite feeling satisfied with their jobs, most respondents were distrustful of employers' willingness to fulfil commitments made upon hiring, had poor organizational commitment scores, and were unsure about staying with current employers.

Few statistically significant differences were observed across provider groups; however, there were a number of noteworthy trends. At baseline, RNs were more negative, and MP more positive about workplace conditions than other groups. Similar findings were observed for work-related attitudes, except job satisfaction (i.e., greatest for LPNs). AHPs were least likely and LPNs most likely to stay with current employers.

At follow-up, LPNs and MDs were most negative about the emotional climate of the workplace and practice issues, respectively, and MP the most positive. MDs were more negative, and AHP more positive about managerial and interdisciplinary relations than other groups. LPNs had become less satisfied with their jobs, MDs less committed to

organizations, and RNs and MDs less trustful of employers than other groups. MP had the most positive attitudes (i.e., more satisfied, committed, and trustful). Finally, AHPs were the least likely, and LPNs the most likely, to stay with current employers.

Table 2.4 Workplace Condition and Work Attitude Scores in those who responded at both time periods (2000 and 2002) by Health Care Provider Group

		Midpoint of scale		All Groups* (N = 589)		AHP* (n = 117)		LPN* (n = 65)		RN* (n = 158)		MP* (n = 93)		MD* (n = 156)	
				2000	2002	2000	2002	2000	2002	2000	2002	2000	2002	2000	2002
Workplace Conditions															
Emotional Climate	3.5	2.73 (.86)	2.85† (.97)	2.83 (.81)	3.01† (.84)	2.62 (.84)	2.54 (.85)	2.54 (.94)	2.82‡ (1.04)	2.90 (.84)	3.48‡ (.83)	2.90 (.76)	2.89 (1.00)		
Practice Issues	3.5	3.11 (1.14)	3.15 (1.20)	3.15 (1.07)	3.24 (1.02)	3.04 (1.31)	2.93 (1.29)	2.89 (1.13)	3.09 (1.26)	4.09 (.73)	4.11 (.67)	3.05 (1.07)	2.90 (1.24)		
Collaborative Relations	3.5	3.07 (1.19)	3.24† (1.21)	3.23 (1.10)	3.50† (1.11)	3.34 (1.26)	3.25 (1.25)	2.82 (1.22)	3.23‡ (1.24)	---	---	3.10 (1.16)	3.00 (1.20)		
Work Attitudes															
Job Satisfaction	4	4.60 (1.38)	4.65 (1.35)	4.66 (1.17)	4.84 (1.08)	4.97 (1.20)	4.53 (1.42)	4.27 (1.47)	4.57 (1.39)	4.76 (1.36)	4.81 (1.22)	4.64 (1.46)	4.54 (1.50)		
Organizational Commitment	4	3.94 (1.35)	3.98 (1.39)	3.91 (1.08)	4.06 (1.06)	4.11 (1.26)	3.99 (1.32)	3.51 (1.28)	3.71 (1.42)	5.03 (1.22)	4.98 (1.24)	3.65 (1.36)	3.56 (1.43)		
Intent to Stay	3	3.36 (.94)	3.42 (.97)	3.15 (.90)	3.29 (.94)	3.72 (.81)	3.74 (.78)	3.29 (.96)	3.32 (1.03)	3.40 (.86)	3.57 (.85)	3.43 (1.02)	3.39 (1.05)		
Trust in Employer	3	2.81 (.63)	2.92‡ (.64)	2.82 (.51)	2.90 (.61)	2.71 (.61)	2.86 (.48)	2.65 (.58)	2.81† (.61)	3.09 (.60)	3.26† (.61)	2.85 (.75)	2.81 (.72)		

Note. AHP = Allied Health Professional; LPN = Licensed Practical Nurse; RN = Registered Nurse; MP = Management Personnel; MD = Doctor.

Note. Reported significant levels refer to significant changes over time: † p < .01; ‡ p < .001.

* Weighted mean and standard deviation scores are reported.

Change over Time in Workplace Conditions and Attitudes

By 2002, significant improvements were observed in perceptions of the emotional climate ($p < 0.01$), managerial and interdisciplinary relations ($p < 0.01$), and trust in employers ($p < 0.001$) for the total sample. However, only AHPs ($p < 0.01$), RNs ($p < 0.001$), and MP ($p < 0.001$) had more positive perceptions of the emotional climate. As well, only AHPs ($p < 0.01$) and RNs ($p < 0.001$) were more satisfied with managerial and interdisciplinary relations, and only RNs and MP became more trustful of employers ($p < 0.01$). Job satisfaction levels declined for LPNs ($p = 0.01$), but increased for RNs ($p = 0.01$). No significant differences were noted on any variables for LPNs and MDs.

Moderate to strong, positive intercorrelations were observed among both the workplace condition variables and attitude/behavior variables. In addition, moderate to strong, positive associations were noted between workplace condition and attitude/behavior variables (data not shown). The strength and magnitude of all associations improved with time, especially within St. John's.

Change Over Time by Region

Significant improvements occurred in the emotional climate ($p < 0.001$), managerial and interdisciplinary relations ($p < 0.01$), and trust in employers ($p < 0.01$) in the St. John's region over time (Table 2.5). Comparatively, only trust in employers ($p < 0.01$) improved in outside regions.

There were few significant inter-regional differences. At baseline, respondents in St. John's were less inclined to stay ($p < 0.001$), and less trustful of employers ($p < 0.01$) than their counterparts from other regions. At follow-up, differences in intent to stay failed to reach statistical significance, but respondents within St. John's remained less trustful of employers ($p < 0.01$). Although respondents from St. John's were more positive about practice issues than those from outside regions, this difference only reached statistical significance at follow-up ($p < 0.01$).

Table 2.5 Change Over Time in Health Care Provider's Perceptions of Work Conditions and Work Attitudes by Region

	Midpoint of scale	St. John's** (n=292)				Outside St. John's** (n=294)			
		2000	2002	Effect Size <i>r</i>	<i>p</i> value	2000	2002	Effect size <i>r</i>	<i>p</i> value
Workplace Conditions									
Emotional Climate	3.5	2.78 (.86)	2.99† (1.01)	-0.11	.000	2.69 (.86)	2.80 (.93)	-0.06	.034
Practice Issues	3.5	3.23 (1.12)	3.32 (1.22)	-0.04	.206	2.97 (1.15)	2.98 (1.18)	-0.004	.939
Collaborative Relations*	3.5	3.05 (1.17)	3.28† (1.22)	-0.10	.002	3.08 (1.21)	3.20 (1.21)	-0.05	.085
Work Attitudes									
Job Satisfaction	4	4.46 (1.41)	4.61 (1.30)	-0.06	.052	4.74 (1.34)	4.69 (1.40)	+0.02	.467
Organizational Commitment	4	3.81 (1.32)	3.88 (1.38)	-0.03	.217	4.08 (1.37)	4.08 (1.41)	0	.979
Intent to Stay	3	3.22 (.89)	3.33 (.97)	-0.06	.037	3.52 (.97)	3.52 (.97)	0	.983
Trust in Employer	3	2.75 (.58)	2.85† (.62)	-0.08	.001	2.88 (.66)	2.99† (.65)	-0.08	.004

*Managers not included. Note. Reported significant levels refer to significant changes over time: † $p < .01$; ‡ $p < .001$.
 Note. ** Weighted mean and standard deviation scores are reported. Higher scores reflect more positive attitudes.

Discussion

Strategic decisions made in NL by various governments and health care boards have transformed the work life of acute care providers. Similar to other Canadian provinces,^{6,29-31} the acute care sector in NL has been subjected to realignment and reallocation of resources following aggregation of institutional boards and hospitals, and downsizing of middle management and support staff in most regions. In St. John's, closure of one acute care hospital and hospital aggregation resulted in substantial dislocation of frontline workers, especially nursing staff, as in other provinces.^{29, 30, 32, 33} In contrast to other provinces,^{6,29-31,33-35} no concomitant reductions occurred in the number of front-line workers or skill-mix ratios.

A slight decline in paid sick hours was observed between 2000 and 2001 in the St. John's region. However, these numbers were consistently above the national health sector average by approximately 20 per year.¹³⁻²⁰ Counter to the current study findings on the St. John's region, Cummings and Estabrooks,¹¹ following a systematic review of the literature on the effects of hospital restructuring on health care providers, reported that increases in work absences had occurred, with the most notable increases attributed to nursing staff who had changed work units.

In NL, workplace conditions were perceived as less than desirable by all provider groups during the two-year study period, as were their attitudes and behaviors. Possible contributing factors could include province-wide labour unrest, restructuring efforts in all

regions, and performance and efficiency issues at the board/government interface (e.g., government-mandated operational reviews, problems with recruitment and retention of CEOs, political battles within regions to prevent hospital closure, etc.). An additional factor could be the increasing trends observed in the average length of stay, and resource intensity weights for the acute care sector in 2000/01.³⁶ These findings appear to support front-line staff's concerns about increasing workload and demands (i.e., caring for sicker and a more complex mix of patients).

Study results provide support for the assumption that health care providers working in current environments of change have adverse reactions to their workplace, and have already become radicalized, as shown by widespread strike action. Provider groups across all regions were experiencing such work pressures as limited control over practice and participation in decision-making, poor organizational climates, and conflictual relations with management and other disciplines. Although ratings of the emotional climate of the workplace and work relations showed marginal gains over time, they still remained in the low range.

There is evidence from other Canadian provinces that acute care providers perceive their work environments to be severely compromised by restructuring initiatives. Several researchers^{32,37-45} have found support for a negative climate (e.g., increased job demands and stress, low morale and burnout, less encouragement and recognition, increased frustration, less satisfaction with quality of work life, etc.). There is also support for

negative perceptions of reform impact on practice (e.g., decreased control, less opportunity for participation in decision-making, less opportunity for professional development, etc.).^{32,37,38,41-44,46} Finally, poorer ratings are typically given to collaborative and supportive relations with management and co-workers following restructuring.^{37, 38, 41-44,46}

Despite being reasonably satisfied with their jobs, most staff groups who had low organizational commitment, were distrustful of employers, and were uncertain about staying with current employers. Several Canadian researchers reported a decline in job satisfaction,^{33,38,39,41,44-46} organizational loyalty and commitment,^{32,37,41,42,45,47,48} and trust levels following restructuring.^{32,37,41,48,49} In all, three Canadian studies were identified that reported on turnover intentions following restructuring. While Aiken *et al.*³⁸ found that slightly less than 20% of hospital nurses surveyed in Ontario, Alberta, and British Columbia were planning to leave, this percentage increased to 30% for those under 30 years of age. In a three-year follow-up of hospital nurses in Ontario, Burke⁴⁰ found that 20% had either left nursing, or were working elsewhere. Zboril-Benson³⁴ found that about 42% of their sample of nurses working in acute and long-term care in Saskatchewan was seriously considering leaving the profession.

Study findings failed to support the hypothesis that providers in St. John's exposed to more substantial restructuring would react more negatively than their counterparts from other regions. Comparatively, Laschinger *et al.*⁴⁶ found that urban tertiary care nurses in

Ontario were more satisfied with their jobs, but had less autonomy, less control over their practice, and poorer collaborative relations with physicians than their rural counterparts.

The similarity in providers' perceptions and reactions inside and outside St. John's during restructuring, with noted improvements in some cases for St. John's, suggests that measures implemented to buffer the impact of hospital closure and aggregation may have been effective. Some of these measures included a publicly presented strategic plan for aggregation, implementation of programme-based management, tacit support from all stakeholders, and a decision not to downsize the front-line workforce. The last measure meant that, as hospital beds were reduced, front-line workers were reallocated to other growing programmes (e.g., cardiac care, dialysis, research, etc.). The economic consequence of this decision was that acute care costs, heavily influenced by employee numbers and wage increases, continued to rise above the growth rate of several macroeconomic indicators (e.g., gross domestic product, total personal income, total provincial government revenues, etc.).⁸

It is also possible that the uncertainty associated with regionalization, modest restructuring measures and downsizing of management in regions outside St. John's, engendered similar reactions to changes in St. John's. Nonetheless, our St. John's data indicate that hospital closure and substantial hospital aggregation occurred without the expected deterioration in employee perceptions, attitudes and behaviors. The strong association observed between workplace conditions and attitudes/behaviors suggests that

opportunities exist to develop imaginative programmes to improve the emotional climate of the workplace, relations and organizational commitment, and reduce sick leave costs. There is empirical support for an association between more positive perceptions of workplace conditions and greater job satisfaction,^{39,42,46,47,49-51} commitment,^{32,39,42,47} and trust in employers.⁴⁸

The data reported here are subject to a number of limitations. It is not possible to attribute cause and effect to restructuring initiatives due to the absence of baseline data on most provider outcomes prior to system changes. The presence of restructuring pressures in the comparison region probably contributed to the minimal differences observed in providers' perceptions, attitudes, and behaviors across regions. The low response rates limit the generalizability of the findings. Only short-term impacts of restructuring were measured; therefore, further improvements are possible from change strategies initiated in St. John's. Finally, self-reported measures are subject to response bias, and potential collaboration between respondents at the same site and in the same union.

Conclusion

During acute care restructuring initiatives in NL, most survey respondents had negative feelings about workplace conditions, low levels of organizational commitment and trust in employers, and ambivalent feelings about staying with current employers. On the positive side, most respondents were satisfied with their jobs, and improvements

following restructuring were noted on several variables, especially perceptions of the emotional climate of the workplace and collaborative relations.

It was anticipated that staff in St. John's, the largest region with the most extensive reforms and greatest dislocation of workers, would show greater negativity than those in other regions. Study findings failed to support this conjecture and imply that change strategies implemented prevented deterioration in attitudes and behavior. Furthermore, although sick leave hours in NL are high in comparison to the national average, the steady decline in the St. John's region could be attributed to strategic interventions.

In considering how the results of the current study could be used for policy-making purposes, the findings may help provide a greater understanding of, and appreciation for, the impact reform initiatives can have on health care providers. Employees' perceptions of the work environment and reactions to organizational change have important implications for health status, job performance, productivity, and sick leave usage, as well as ultimately for organizational outcomes (e.g., service quality, efficiency, costs, etc.). The challenge will be to improve the emotional climate of the workplace, together with organizational commitment, at a time when radicalization of the workforce may have already occurred in response to planned restructuring. A key factor in the successful implementation of change strategies is the recognition and acknowledgement that each provider group has its own ethos. It is critical that each group's readiness for, and acceptance of, change is evaluated before change is implemented, taking into

consideration that human and organizational behavior are the most difficult transformations to bring about. Importantly, involvement of health care professional [sic] prior to, during, and after health care restructuring together with open and transparent sharing of information throughout the change process are necessary to buffer the impact of reforms.

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References

1. National Health Expenditure Database (NHEX) [database online]. Canadian Institute for Health Information. *Total Health Expenditure, by Use of Funds, Canada, 1975 – 2003 – Current Dollars*. Available at: [\(http://qstat.cihi.ca/discoverer4i/viewer?ac=qpublic1~40cihidb04.cihi.ca&eul=QSEUL&wbk=HS1&wsk=22&pg=1&p1_sector=-3cAll-3e&pi_Province~2fTerritory~2fTerritory~2fCanada\)](http://qstat.cihi.ca/discoverer4i/viewer?ac=qpublic1~40cihidb04.cihi.ca&eul=QSEUL&wbk=HS1&wsk=22&pg=1&p1_sector=-3cAll-3e&pi_Province~2fTerritory~2fTerritory~2fCanada). (accessed 19 December 2003).
2. National Health Expenditure Database (NHEX) [database online]. Canadian Institute for Health Information. *Health Expenditure by Use of Funds, by Source of Finance, by Province/Territory and Canada*. Available at: http://secure.cihi.ca/cihiweb/en/media_17dec2003_tab_c.1.1_e.html. (accessed 19 December 2003).
3. Parfrey P, Barrett B, Gregory D. Restructuring acute care hospitals in Newfoundland and Labrador. *J Health Serv Res Policy* 2005; **10**(Suppl 2): 1-3.
4. Decter MB. Canadian hospitals in transformation. *Med Care*. 1997; **35** (suppl 10): OS70-OS75.
5. Church J, Barker P. Regionalization of health services in Canada: A critical perspective. *Int J Health Serv*. 1998; **28**: 467-486.
6. Shamian J, Lightstone EL. Hospital restructuring initiatives in Canada. *Med Care*. 1997; **35**(suppl 10): OS62-OS69.

7. Davis EM, Tilley G. The Health Care Corporation of St. John's, Newfoundland: governance and management issues. In: Leatt, P, Lemieux-Charles L, Aird, C Leggat S, eds. *Strategic Alliances in Health Care*. Ottawa, Canada: Canadian College of Health Service Executives; 1996:171-147.
8. Twells L, Doyle M, Gregory D, Barrett B, Parfrey P. Acute Care restructuring in Newfoundland and Labrador: the history and impact on expenditure. *J Health Serv Res Policy* 2005; **10**(Suppl 2): 4-11.
9. Davis EM. Change, reform, positives, negatives and getting ready. [commentary]. *Hospl Quar* 1998/1999; **2**: 51-54.
10. Davis EM. The Health Care Corporation of St. John's: the first five years of regionalization and restructuring. *J Health Serv Res Policy* 2005; **10**(Suppl 2): 68-70.
11. Cummings G, Estabrooks CA. The effects of hospital restructuring that included layoffs on individual nurses who remained employed: a systematic review of impact. *Int J Sociol Social Policy* 2003; **23**:8-53.
12. Financial Services Division, Department of Health and Community Services. Government of Newfoundland and Labrador (accessed 29 April 2002).
13. Dawes C. *Report of the Annual Benchmarking Survey – Human Resources Benchmarking Network*, Toronto, Ontario; 1996. (Email: cdawes@allstream.net)

14. Dawes C. *Report of the Annual Benchmarking Survey – Human Resources Benchmarking Network*, Toronto, Ontario; 1997. (Email: cdawes@allstream.net)
15. Dawes C. *Report of the Annual Benchmarking Survey – Human Resources Benchmarking Network*, Toronto, Ontario; 1998. (Email: cdawes@allstream.net)
16. Dawes C. *Report of the Annual Benchmarking Survey – Human Resources Benchmarking Network*, Toronto, Ontario; 1999. (Email: cdawes@allstream.net)
17. Dawes C. *Report of the Annual Benchmarking Survey – Human Resources Benchmarking Network*, Toronto, Ontario; 2000. (Email: cdawes@allstream.net)
18. Dawes C. *Report of the Annual Benchmarking Survey – Human Resources Benchmarking Network*, Toronto, Ontario; 2001. (Email: cdawes@allstream.net)
19. Dawes C. *Report of the Annual Benchmarking Survey – Human Resources Benchmarking Network*, Toronto, Ontario; 2002. (Email: cdawes@allstream.net).
20. Human Resource Indicator Database. Health and Community Services Human Resource Sector Study. St. John's, Newfoundland and Labrador, Canada; 2000/2001.

21. Way C, Gregory D. Impact of health care restructuring on employees' attitudes. *Presented in part at the Annual General Meeting of the Association of Registered Nurses of Newfoundland and Labrador*, St. John's, Newfoundland and Labrador, Canada. 28 May 2000
22. Way C. *Nurses' perception of health care reforms and their impact on the quality of health care and nursing practice*. St. John's, NL: Association of Registered Nurses of Newfoundland, 1995. Email: info@arnnl.nf.ca.
23. Pyne D. Nurses' perceptions of the impact of health care reform and job satisfaction *Master's Thesis*. St. John's, NL: Memorial University of Newfoundland, 1998.
24. Hackman JR, Oldman GR. Development of the job diagnostic survey. *J Appl Psychol* 1975; **60**: 159-170.
25. Mowday RT, Steers RM, Porter LW. The measurement of organizational commitment. *J Vocat Behav.* 1979; **14**: 224-247.
26. Turnley WH, Feldman DC. Psychological contract violations during corporate restructuring. *Hum Resource Manage* 1998; **37**: 71-83.
27. Gregory D, Way C, Barrett B, Parfrey P. Health care quality from the perspective of health care providers and patients during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005; **10**(Suppl 2): 48-57.
28. Cohen J. *Statistical Power Analysis for the Behavioral Science*. 2nd edn. Hillsdale: Laurence Erlbaum Associates Inc., 1988

29. Baumann A, O'Brien-Pallas L, Deber R, Donner G, Semogas D, Silverman B. Downsizing in the hospital system: A restructuring process. *Health Care Manage Forum* 1996; 9: 5-13.
30. Heitlinger, A. The paradoxical impact of health care restructuring in Canada on nursing as a profession. *Int J Health Serv* 2003; 33: 37-54.
31. Chan YL, Lynn BE. Operating in turbulent times: How Ontario's hospitals are meeting the current funding crisis. *Health Care Manage Rev.* 1998; 23: 7-18.
32. Blythe J, Baumann A, Giovannetti P. Nurses' experiences of restructuring in three Ontario hospitals. *J Nurs Scholarship* 2001; 33: 61-68.
33. Burke RJ, Greenglass ER. Effects of hospital restructuring on full time and part time nursing staff in Ontario. *Int Journal Nurs Stud* 2000; 37: 163 171.
34. Zboril-Benson LR. Why nurses are calling in sick: The impact of health-care restructuring. *Can J Nurs Res* 2002; 33: 89-107.
35. Armstrong-Stassen M. The influence of prior commitment on the reactions of layoff survivors to organizational downsizing. *J Occup Health Psychol* 2004; 9:46-60.
36. Barrett B, Way C, McDonald J, Parfrey P. Hospital utilization, efficiency and access to care during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005;10(Suppl 2): 31-37.

37. Baumann A, O'Brien-Pallas L, Armstrong-Stassen M, et al. *Commitment and care: The benefits of a healthy workplace for nurses, their patients and the system. A policy synthesis*. Ottawa, Ontario: Canadian Health Services Research Foundation, 2001.
38. Aiken LH, Clarke SP, Sloane DM, et al. Nurses' reports on hospital care in five countries: The ways in which nurses' work is structured have left nurses among the least satisfied workers, and the problem is getting worse. *Health Affairs (Millwood)*. 2001; **20**: 43-53.
39. Armstrong-Stassen M, Cameron SJ, Horsburgh ME. The impact of organizational downsizing on the job satisfaction of nurses. *Can J Nurs Admin*. 1996; **9**: 8-32.
40. Burke RJ. Survivors and victims of hospital restructuring and downsizing: who are the real victims. *Int J Nurs Stud* 2003; **40**: 903-909.
41. Spence Laschinger HK, Sabiston JA, Finegan J, Shamian J. Voices from the trenches: Nurses' experiences of hospital restructuring in Ontario. *Can J Nurs Leadership*. 2001; **14**: 6-13.
42. Spence Laschinger HKS, Finegan J, Shamian J, Almost J. Testing Karasek's Demands-Control Model in restructured healthcare settings: Effects of job strain on nurses' quality of worklife. *J Nurs Admin* 2001; **31**: 233-243.
43. Lynam MJ, Henderson A, Browne A, et al. Healthcare restructuring with a view to equity and efficiency: reflections on unintended consequences. *Can J Nurs Leadership*. 2003; **16**: 112-140.

44. Woodward CA, Shannon HS, Cunningham C, et al. The impact of re-engineering and other cost reduction strategies on the staff of a large teaching hospital: A longitudinal study. *Med Care*. 1999; **37**: 556-569.
45. Cameron SJ, Horsburgh ME, Armstrong-Stassen M. Job satisfaction, propensity to leave and burnout in RNs and RNAs; a multivariate perspective. *Can J Nurs Admin* 1994; **7**: 43-64.
46. Spence Laschinger HK, Almost J, Tuer-Hodes D. Workplace empowerment and magnet hospital characteristics. *J Nurs Admin* 2003; **33**: 410-4224.
47. Baumann A, Giovannetti P, O'Brien-Pallas L, et al. Healthcare restructuring: The impact of job change. *Can J Nurs Leadership*. 2001; **14**: 14-20.
48. Spence Laschinger HK, Finegan J, Shamian J, Casier S. Organizational trust and empowerment in restructured healthcare settings: Effects on staff nurse commitment. *J Nurs Admin* 2000; **30**: 413-425.
49. Greenglass ER, Burke RJ, Fiksenbaum, L. Impact of restructuring, job insecurity and job satisfaction in hospital nurses. *Stress News [Serial online]*. 2002; **14**. Available at: <http://www.isma.org.uk/stressnw/hospnurse1.htm>.
50. Best JA, Walsh G, Muzin F, Berkowitz J. Healthy hospital: Toward a better tomorrow: A demonstration project to promote culture change through participatory decision-making. *Health Care Manage Forum*. 1997; **10**: 43-53.
51. Woodward CA, Shannon HS, Lendrum B, Brown J, McIntosh J, Cunningham C. Predictors of job stress and satisfaction among hospital workers during re-

engineering: Differences by extent of supervisory responsibilities. *Health Care Manage Forum*. 2000; **13**: 29-35.

Appendix
Psychometric Properties of Employee Attitude Surveys

Scale	Alpha 2000 & 2002	Content
Workplace Conditions		
Emotional Climate	0.71 & 0.80	The seven-item emotional climate scale was used to assess key aspects of the work environment: frustrating, motivating, challenging, appreciative, relations, morale and supportive. In a repeat survey of the Way study sample, ²² Way and Gregory assessed the psychometric properties of the RIHCRS. ²¹ This version was found to have strong internal consistency (i.e., alpha of 0.87 for overall scale, and subscale ranges between 0.60 and 0.82). Factor analysis reinforced the scale's construct validity, with items loading on six factors representing theoretical meaningful clusters (i.e., importance of reforms, emotional climate, practice issues, quality of care, safety concerns and standards).
Practice Issues	0.75 & 0.79	The four-item practice issues scale of the RIHCRS measured perceived control over practice, access to educational services, and involvement in workplace problem identification and resolution.
Collaborative Relations (CR)	0.88 & 0.88	The five-item CR scale assessed satisfaction with the visibility and accessibility of management, communication with management, interdisciplinary approaches to care, and time spent dealing with interdisciplinary conflicts since restructuring. In a pilot test of the CR in 1999, Way and Gregory reported good construct validity (i.e., a one-factor solution, with 69.14% of the total variance explained) and strong internal consistency (0.89). ²¹

Scale	Alpha 2000 & 2002	Content
Workplace Attitudes/Behaviors		
General Job Satisfaction (GJS)	0.80 & 0.83	The three-item GJS scale assessed overall job satisfaction. Scale reliabilities are reported to be ≥ 0.76 . In a 1999 pilot study with a repeat sample of nurses, Way and Gregory reported good internal consistency ($\forall = 0.78$). ²¹
Organizational Commitment Questionnaire (OCQ)	0.92 & 0.93	The nine-item OCQ assessed overall commitment to an organization. Alpha coefficients range from 0.84 to 0.90. ²⁵ Pilot study data supported high internal consistency ($\forall = 0.92$).
Intent to Stay (IS)	0.76 & 0.79	This scale assessed the likelihood of staying with present employers, potential for leaving if another job opportunity surfaced and search efforts for another job. Turnley and Feldman reported high internal consistency for the IS scale ($\alpha = 0.92$). ²⁶ Pilot study data supported a one-factor solution and good internal consistency ($\forall = 0.73$).
Psychological Contract Violation (PCV)	0.75 & 0.78	Psychological contracts are generally defined as a set of implied obligations existing between the employee and the employer. When these contracts are violated, employees' sense of trust in employers is compromised. The PCV assessed how well and how often organizations fulfilled original implied commitments, and how well rewards match what was promised or expected. Turnley and Feldman reported high internal consistency for the PCV ($\alpha = 0.86$). ²⁶ Pilot study data supported a one-factor solution and good internal consistency (0.75).

CHAPTER 3

Health Care Quality from the Perspective of Health Care Providers and Patients During and Shortly After Acute Care Restructuring in Newfoundland and Labrador

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Objectives: To monitor changes in providers' perceptions of health care quality and the importance of health reform, as well as patients' satisfaction with services during and two years after restructuring, comparing the region of the province that was restructured (St. John's) with those regions in which hospitals were not aggregated.

Methods: The Employee Attitude Survey questionnaire was sent to acute care providers ($N = 5353$) to assess personal characteristics and perceptions of the impact of reform on workplace conditions, work-related attitudes and turnover intentions. The response rate for 2000 and 2002 was 42% ($n = 1222$ and 1034 , respectively). Only respondents in both surveys ($n = 589$) were used in the analysis because study results were the same for both the repeat sample and total samples. A Patient Satisfaction Survey questionnaire was administered to patients discharged from acute care facilities in 2000 ($n = 1741$) and 2002 ($n = 704$). Response rates were 82.5 % and 90.2 %, respectively.

Results: Most providers felt, at both time periods, that restructuring of the health care system was a positive step, but felt that health care quality was low. In the St. John's region, perceptions of quality and standards of care improved over time. Patients were extremely satisfied with the admission process and hospital stay at both time periods in St. John's. However, satisfaction declined in 2002 in regions outside St. John's.

Conclusions: Aggregation of acute care hospitals is possible without adverse effects on providers' perceptions of health care quality or patient satisfaction.

Introduction

There is no empirical evidence that restructuring improves the quality of health care in the acute care sector. A province-wide plan was developed to evaluate the impact of acute care restructuring in Newfoundland and Labrador (NL) from 1995 to 2002. A full description of the changes in NL has been presented elsewhere.^{1,2} Several objective and subjective indicators were used to monitor the outcomes. This paper focuses on patients' and providers' perceptions of care quality. Another paper focuses on objective evidence obtained from extensive medical chart audits and other indicators of care quality.³

Subjective evaluations of quality have less credence than objective measures, especially when appraising the impact of extensive system reforms. However, patients' expectations about hospital care and ratings of actual care received while hospitalized are important indicators of health care quality.⁴⁻⁷ The consistently high positive evaluations obtained from patient surveys⁷⁻¹⁰ coupled with limited to no change in gross quality indicators (e.g., access, mortality, re-admission rates, etc.)¹¹⁻¹⁵ have been prescribed as evidence that the health care system can be subjected to extensive reform without having negative repercussions for quality outcomes.

Restructuring of the acute care system and greater emphasis on efficiency and effectiveness has made it more difficult for health care providers to deliver the care necessary to meet patients' needs.^{7, 16-22} While some argue that providers' perceptions

are important indicators of quality,⁶ others view such perceptions as suspect due to their potentially self-serving nature.²³

One purpose of the current analysis was to monitor providers' perceptions of the importance of health care reform and its impact on the quality of care, standards of care and safety in 2000, the peak period of worker dislocation in St. John's, and 2002 after completion of hospital aggregation. A second purpose was to monitor patients' satisfaction with their admission process and hospital stay (accommodations, care process, care received from health care providers, and preparation for discharge) during these time periods. A final purpose was to examine regional differences in providers' and patients' perceptions. It was hypothesized that the St. John's region, exposed to more extensive reform and aggregation of hospitals, would have more negative perceptions than other regions.

Methods

The Human Investigation Committee of the Faculty of Medicine, Memorial University of Newfoundland, approved the study protocol. Employee survey data were collected via mail-outs of confidential questionnaires to health care providers' home addresses. Reminder letters were sent two weeks later.

Patient satisfaction data were collected 2-3 weeks post-hospital discharge via telephone surveys. Research assistants or clinical managers identified patients who met the

inclusion criteria and provided them with information about the study following hospital admission. Patients who were willing to participate in the study completed and signed a standardized postcard, which was returned to a panel of four trained telephone interviewers.

Data Collection Instruments

Employee attitude survey (EAS). The EAS was used to collect data on perceptions of health care reform, the perceived impact of restructuring on health care quality and key personal characteristics (see Appendix H). Three subscales of the Revised Impact of Health Care Reform Scale (RIHCRS) examined perceptions of quality of care, standards of care and safety. Items were rated on a six-point scale, ranging from 1 (strongly disagree) to 6 (strongly agree), with higher scores indicative of more positive attitudes. The RIHCRS is a modified version of the Impact of Health Care Reform Scale (IHCRS) used in surveys of registered nurses.^{24,25} The IHCRS was found to have good construct validity and internal consistency as measured by Cronbach's alpha (0.87 and 0.83 for the total scale).

Standardized measures examined personal characteristics (occupation, years of work experience in health care, years in current position, geographic region, sex and age).

Patient satisfaction survey (PSS). The PSS was derived from *Your Hospital Stay – A Survey for Patients & Families*.²⁶ The content and format of the generic instrument was based on an extensive literature review and comments received from the Health Care Corporation of St John's (HCCSJ) consumer feedback committee. Permission was received from the Director of Quality Initiatives of the HCCSJ to modify the instrument for the current study.

A pilot test of the modified instrument was undertaken at the HCCSJ ($n = 236$) in March and April 2000. Exploratory factor analysis revealed a seven-factor solution with strong internal consistency for each of these factors. The final version of the 36-item PSS consisted of seven scales designed to evaluate the hospital admission process (pre-admission scale, regular admission scale, and emergency admission scale) and hospital stay (accommodations, care process, discharge planning and caregivers) (see Appendix H). Items are rated on five-point scale, ranging from 1 (very satisfied) to 5 (very dissatisfied). The scale steps were reverse scored prior to data entry, with higher scores indicative of greater satisfaction.

Study findings from the larger sample indicated that the PSS had good construct validity and fairly high internal consistency for most scales for 2000 and 2002 (average Cronbach's alpha of 0.79 and 0.90, respectively). The high internal consistency for the hospital stay scales may be due to the clustering of ratings in the satisfied and very satisfied scale steps.

Sample

Provider sample. Health care providers consisted of all registered nurses (RNs), licensed practical nurses (LPNs), and allied health professionals (AHPs) working in acute care settings, management personnel (MP) from three institutional boards (St. John's and two outside boards) and all doctors (MDs) employed in the province. The accessible population had to meet the following inclusion criteria: name recorded on an updated mailing list of the professional governing body/council/institutional board/licensure board, and a willingness to participate. A total of 9237 health care providers comprised the accessible population.

In 2000 and 2002, 2893 and 2460 questionnaires, respectively, were mailed out. There were responses from 42% (1222 and 1034, respectively). Table 3.1 provides the breakdown for each provider group for each study year.

Due to the relatively small size of the accessible population for AHP, MDs, and MP (Table 3.1) and the low response rates, the decision was made to survey the entire populations of these providers at both time periods. In 2000, a total of 271 AHPs, 337 MDs and 197 MP returned completed questionnaires, resulting in response rates of 60.6%, 35.9%, and 57.6%, respectively. In 2002, 149 AHPs, 309 MDs and 169 MP responded, giving response rates of 41%, 32.9%, and 47.7%, respectively. The final sample sizes were within the desired range, as determined by power analysis for bivariate correlation tests and tests of difference with medium effect sizes.²⁷

In 2000, the total accessible population for RNs and LPNs was 3583 and 1091, respectively. A proportionate stratified random sample was used to select samples of RNs ($n = 327$) and LPNs ($n = 256$) from each region of the province. From experience of poor response rates, the decision was made to double the sample sizes for the RNs and LPNs. A total of 223 RNs and 194 LPNs returned completed questionnaires, resulting in response rates of 34.1% and 37.8%, respectively.

In 2002, the RN sample was restricted to those responding to the 2000 survey due to changes in the association's policy on release of names for research purposes. The accessible population was reduced to 214. The total number of respondents was 158, resulting in a 73.8% response rate.

A second proportionate stratified random sample of LPNs by region was selected for the 2002 survey from the accessible population ($n = 1173$). Based on power analysis, the required sample size was 298, but this was again doubled. A total of 249 completed surveys were available for data analysis, resulting in a 42.7% response rate. The number of completed surveys was lower than the desired amount, but adequate for data analysis.

Table 3.1. Summary data on the 2000 and 2002 accessible population, mail outs and response rates for each provider group for 2000 and 2002.

Group	Year	Accessible Population	Number of Mail outs	Number of Responses	Response Rate
RN	2000	3,583	654	223	34.1
	2002	---	214	158	73.8
LPN	2000	1,091	512	194	37.8
	2002	1,173	583	249	42.7
AHP	2000	447	447	271	60.6
	2002	363	363	149	41.0
MD	2000	938	938	337	35.9
	2002	937	944	309	32.9
MP	2000	342	342	197	57.6
	2002	356	356	169	47.7

RN, registered nurse; LPN, licensed practical nurse; AHP, allied health professional; MD, doctor; MP, management personnel.

Patients' sample. For the patients' satisfaction survey, the accessible population was restricted to adult patients using one study site within and one outside of St. John's during the data collection time frames. Study participants had to meet the following inclusion criteria: greater than or equal to 16 years of age; not admitted to ICU/CCU, psychiatry or palliative care areas; not confused, hard of hearing, or terminally ill; did not previously participate in the survey during a different admission; not on isolation precautions; able to understand and speak English; and telephone number available.

All patients admitted to hospital during the study periods in 2000 were 2960 and 1444 in 2002. Following application of the exclusion criteria, the accessible populations were 1741 in 2000 and 704 in 2002. Response rates were 82.5% and 90.2%, respectively.

Data Analysis

Survey data were coded and entered into the Statistical Package for the Social Sciences (SPSS) for analysis. Analyses focused on time-related trends and inter- and intra-regional differences. Frequencies and percentages were used to describe providers' and patients' sample characteristics. Scale scores for both the EAS and the PSS were summed and divided by the total number of items to determine scale means. Cronbach's alpha coefficients assessed the internal consistency of individual scales.

Provider sample. χ^2 tests assessed the comparability of responders in 2000 and 2002 with those responding at both time periods on key characteristics. Paired-samples *t*-tests were used to assess changes in scale scores over time for the total *repeat* sample completing the survey at both time periods, and for provider groups. Independent-samples *t*-tests were used to compare total responders for each time period on major study variables. Due to the number of associations examined, findings were reported as significant if the *p* value was < 0.01. Effect sizes for significant changes were calculated with Cohen's *d* statistic.²⁴ Study results were the same whether the repeat sample or total samples at both time periods were used. Thus, the decision was made to present findings on the repeat sample only. The sample responding at both time periods totalled 589 or 11% of the total.

Analysis of variance (ANOVA) tests were used to identify group differences on scale scores at each time period. With unequal group sizes, the post hoc Scheffé test

investigated pairwise differences. Bivariate correlations were used to evaluate relationships among major study variables.

Patient sample. The χ^2 statistic and independent *t*-test were used where appropriate to assess the comparability of responders in 2000 and 2002 on key characteristics. Given the use of non-probability sampling techniques and cross-sectional samples at both time periods, independent *t*-tests were used to assess changes in satisfaction scores between the two time periods.

Results

Provider Sample Characteristics

A description of the personal and work characteristics of those who responded only to the first, only to the second, and to both surveys has been reported.²⁸ The repeat sample was representative of respondents at each time period, except for position tenure and years of work experience. Due to the absence of published data on most provider groups, we were unable to determine the representativeness of the final samples to the various accessible populations.

Respondents to both surveys were primarily female (71%), were distributed equally between St. John's and other regions, averaged 44 years of age, had more than 10 years of work experience, and had been in their current positions for more than five years. The repeat sample consisted of 158 registered nurses, 156 medical doctors, 117 allied health

professionals, 93 management personnel and 65 licensed practical nurses. RNs comprised 27% of the sample, MDs 26%, AHPs 20%, MP 16%, and LPNs 11%.

Importance of Reform and Health Care Quality

Mean scores and standard deviations for the repeat sample and each provider group are presented in Table 3.2. For both 2000 and 2002, the majority of providers felt that restructuring of the health care system was a positive step. They supported importance of reforms and movement to community-based care, appreciated professional challenges, and felt empowered to be active participants. Despite this, scores of overall health care quality were low in both surveys. Providers were concerned about the unreasonable access to services and inadequate resources for providing comfort or meeting patients' emotional/psychosocial and basic care needs. Although there were concerns about patients' safety (i.e., insufficient staff to provide safe care, and inadequate discharge preparation and access to community resources following hospital discharge), most providers felt procedures were being performed in a safe and competent manner and that the necessary physical resources were available to provide safe care. Providers were also concerned about the low standards of care in their institutions. While in-service education on new policies and procedures were believed to be sufficient, most providers believed that patients were at increased risk for potential harm due to increased job demands, and found it necessary to lower professional standards due to increased demands, sicker patients, and shortened lengths of stay.

While most provider groups had similar perceptions about the importance of reform and health care quality, several differences should be highlighted. In 2000, MP and LPNs were significantly more positive about the quality of patient care and safety measures than other groups. In 2002, although similar findings were observed for safety, only MP continued to be more positive about quality of patient care than other groups. In 2000, MP viewed standards of care more positively than AHPs and RNs, whereas MDs were more positive than RNs. In 2002, only MP held significantly more positive views about standards of care than other groups.

Finally, the importance of reform was significantly linked with all health care quality indicators ($p < 0.01$). Although the associations were in the low range, the findings indicated that greater perceived importance of reform was associated with more positive views of quality, safety and standards.

Table 3.2. Provider perceptions of the importance of health care reform and of health care quality during and two years after restructuring.

	Midpoint of Scale*	All Groups (n = 589)		AHP (n = 117)		LPN (n = 65)		RN (n = 158)		MP (n = 93)		MD (n = 156)	
		2000	2002	2000	2002	2000	2002	2000	2002	2000	2002	2000	2002
Importance of Reform	3.5	4.19 (.87)	4.19 (.85)	4.17 (.77)	4.24 (.82)	3.91 (.93)	3.79 (.98)	4.08 (.83)	4.14 (.82)	4.82 (.72)	4.69 (.70)	4.07 (.86)	4.10 (.82)
Health Care Quality	3.5	2.82 (1.00)	2.92† (.97)	2.59 (.86)	2.72 (.82)	3.12 (.84)	3.00 (.84)	2.61 (.92)	2.89† (.93)	3.35 (1.11)	3.63† (.98)	2.76 (1.02)	2.63 (.96)
Safety Issues	3.5	3.26 (.91)	3.37† (.91)	3.01 (.83)	3.14 (.79)	3.73 (.86)	3.66 (1.01)	3.20 (.86)	3.47‡ (.91)	3.61 (.72)	3.94 (.60)	3.21 (.99)	3.14 (.92)
Standards of Care	3.5	3.09 (1.05)	3.17 (.99)	2.99 (.91)	3.00 (.83)	3.17 (1.04)	2.90 (1.05)	2.86 (1.05)	3.12† (.97)	3.59 (1.16)	3.91 (.97)	3.25 (1.05)	3.23 (.98)

*Weighted mean and standard deviation scores are reported. Scores range from 1 to 6, with higher scores reflecting more positive attitudes. Reported significant levels refer to significant changes over time: † p < 0.01; ‡ p < 0.001. AHP, allied health professional; LPN, licensed practical nurse; RN, registered nurse; MP, management personnel; MD, doctor.

Changes over time

Perceptions of quality of patients' care ($p < 0.01$) and safety ($p < 0.01$) improved significantly for the repeat sample between 2000 and 2002. Perceptions of AHPs, LPNs and MDs did not differ significantly over time. In contrast, RNs had significantly more positive perceptions of quality, safety, and standards, and MP was more positive about quality.

Regional differences

Table 3.3 summarizes regional results. While all health care quality indicators showed improvement over time in the St. John's region, only safety issues achieved statistical significance at the cutoff level ($p < 0.01$). No significant changes were observed in any of the study variables in regions outside of St. John's.

Few significant inter-regional differences were observed in either 2000 or 2002.

Although the importance of reform approached significance in 2000, it only achieved statistical significance in 2002, with respondents in St. John's significantly more positive than their counterparts from other regions.

Table 3.3. Change in perceptions of the importance of reform and health care quality for the repeat sample between 2000 and 2002: St. John's and other regions.

	Midpoint of scale*	St. John's region (n=292)					Other regions (n=294)				
		2000	2002	<i>p</i> value	Cohen's <i>d</i>	Effect Size <i>r</i>	2000	2002	<i>p</i> value	Cohen's <i>d</i>	Effect Size <i>r</i>
Importance of Reform	3.5	4.29 (.84)	4.30 (.82)	.923	-0.01	-0.01	4.09 (.86)	4.10 (.86)	.834	-0.01	-0.01
Health Care Quality											
Quality of Care	3.5	2.80 (1.01)	2.93 (1.00)	.019	-0.13	-0.06	2.82 (.99)	2.91 (.95)	.122	-0.09	-0.05
Safety Issues	3.5	3.22 (.91)	3.37† (.92)	.004	-0.08	-0.16	3.27 (.92)	3.33 (.96)	.271	-0.03	-0.07
Standards of Care	3.5	3.09 (1.09)	3.27 (1.01)	.022	-0.08	-0.15	3.04 (.99)	3.06 (.93)	.856	-0.02	-0.01

*Weighted mean and standard deviation scores are reported, with higher scores reflecting more positive attitudes; †*p* < .01

Patients' Sample Characteristics

Respondents were predominantly women at both time periods (61%) and predominantly admitted to an acute care facility in the St. John's region (73% in 2000 and 69% in 2002) (Table 3.4). The percentage of respondents admitted to hospital through an emergency room was similar in both time periods (46% and 48%). The mean age was 51.7 (SD ± 18.8) in 2000 and 52.1 (SD ± 19.2) in 2002. While χ^2 and *t*-tests revealed no significant differences based on gender or age, there were significantly more pre-admissions (29% vs 37%) and less regular admissions in 2002 (15%) than in 2000 (36%).

Table 3.4 Characteristics of patient sample in 2000 and 2002

Characteristic	2000		2002	
	<i>n</i>	%	<i>n</i>	%
<i>Sex</i>				
Male	559	38.9	246	38.7
Female	877	61.1	389	61.3
<i>Region of Admission</i>				
St. John's	1050	73.1	437	68.8
Outside St. John's	386	26.9	198	31.2
<i>Type of Admission</i>				
Pre-admission	411	28.7	234	36.9
Regular	362	36.2	95	15.0
Emergency	661	46.1	305	48.1

The sample size varies as a function of missing data. The sample size for respondents was 1436 in 2000 and 635 in 2002.

Patient Satisfaction Levels

The content in this section summarizes the findings on patient satisfaction with the hospital admission process and hospital stay. Comparatively, the care process and caregivers received the highest ratings, while accommodations and the admission process received the lowest ratings (Table 3.5). Satisfaction ratings did not vary by age or sex.

For both 2000 and 2002, respondents reported a high level of satisfaction with the admission process. Most respondents in 2000 (91%) and 2002 (95%) were satisfied or very satisfied with the care received in the pre-admission clinic. Most respondents in 2000 (86%) and 2002 (97%) were also satisfied or very satisfied with the care received

during regular admission. Most (90% in 2000 and 92% in 2002) were very satisfied with the care received from the emergency room staff.

Most survey respondents were generally satisfied with their hospital stay in 2000 and 2002. Specifically, the majority of respondents in 2000 (79%) and 2002 (85%) were satisfied or very satisfied with hospital accommodations (i.e., information received on room and floor features, as well as such aspects as privacy, cleanliness, noise level, temperature, etc.). Nearly all reported high levels of satisfaction with the care received while hospitalized (i.e., concern and respect shown for patients and families, information provided about the illness, tests and treatments, answers to questions, participation in decision-making about their care, the plan of care, staff's willingness to involve family/friends in the care process, respect for privacy and personal information, and assistance with meals and getting around). Most respondents in 2000 (94%) and 2002 (95%) also reported high levels of satisfaction with the care provided by nurses, physicians, and allied health professionals, and the time spent by each provider group in promoting understanding of illness and treatment requirements. Although only about 5% expressed dissatisfaction with the time spent by nurses and other caregivers, 11% -14% expressed dissatisfaction with the time spent by physicians. Finally, most respondents in 2000 (93%) and 2002 (96%) were highly satisfied with their level of preparation for hospital discharge (i.e., information about medications and appointments, care required at home, and available community services; personal and family preparation on care

requirements at home; and time spent on discharge planning, as well as arrangements made for hospital).

Table 3.5. Patient perceptions of admission process and hospital stay for 2000 and 2002: St. John's region versus other regions.

	2000				2002			<i>p</i> -value
	Total (N=1436) mean (SD)	St. John's (n=1050) mean (SD)	Outside (n=386) mean (SD)	<i>p</i> - value	Total (N=635) mean (SD)	St. John's (n=437) mean (SD)	Outside (n=198) mean (SD)	
<i>Admission Process</i>								
Pre-admission	4.57 (.55)	4.55 (.55)	4.65 (.53)	NS	4.34 (.50)	4.47 (.53)	4.09 (.30)	<i>p</i> = .0000
Regular Admission	4.62 (.59)	4.61 (.59)	4.64 (.59)	NS	4.40 (.57)	4.50 (.60)	4.00 (.000)	<i>p</i> = .0000
Emergency Admission	4.54 (.64)	4.50 (.67)	4.64 (.56)	<i>p</i> = .006	4.40 (.58)	4.57 (.53)	4.05 (.50)	<i>p</i> = .0000
<i>Hospital Stay</i>								
Accommodations	4.30 (.88)	4.29 (.89)	4.32 (.85)	NS	4.16 (.95)	4.22 (1.01)	4.05 (.79)	NS
Care Process	4.73 (.52)	4.74 (.52)	4.72 (.49)	NS	4.70 (.53)	4.77 (.51)	4.54 (.54)	<i>p</i> = .0000
Caregivers	4.75 (.49)	4.75 (.50)	4.74 (.45)	NS	4.61 (.49)	4.66 (.45)	4.35 (.55)	<i>p</i> = .001
Discharge Planning	4.67 (.66)	4.68 (.68)	4.65 (.64)	NS	4.57 (.62)	4.66 (.62)	4.39 (.57)	<i>p</i> = .0000

Weighted mean and standard deviation scores are reported. Scores range from 1 to 5, with higher scores reflecting more positive attitudes; NS, not significant.

Changes over time and regional differences

Table 5 also summarizes the regional data (St. John's vs. elsewhere) for the two time periods. While there were no significant differences in respondents' satisfaction with any admission type (i.e., pre, regular or emergency) in St. John's between 2000 and 2002, satisfaction levels were significantly lower in other regions ($p < 0.001$). Satisfaction ratings of all scale items tended to be lower in 2002 (50 % -70 % shift in ratings from *very satisfied* to *satisfied*).

Although no regional differences were observed with the pre-admission and regular admission processes in 2000, respondents in St. John's were significantly more satisfied with both admission types ($p < 0.001$) than their counterparts in other regions in 2002. In contrast, respondents in St. John's were significantly less satisfied with the emergency admission process than their counterparts in other regions in 2000 ($p < 0.01$), but were significantly more satisfied than respondents in other regions in 2002 ($p < 0.001$).

Similar to the admission process, respondents to the 2002 survey in the St. John's region did not differ from those responding to the 2000 survey on any of the hospital stay variables. In contrast, respondents from outside regions were significantly less satisfied with hospital accommodations, the care process, caregivers and preparation for discharge in 2002 than in 2000 ($p < 0.001$). This difference was due to the reduced tendency to give very satisfied ratings in 2002.

In 2000, respondents' satisfaction with hospital stay was comparable between the two regions. In contrast, respondents in St. John's were significantly more satisfied with hospital accommodations, the care process, caregivers and preparation for discharge than their counterparts in other regions in 2002.

Discussion

Although most respondents from each provider group supported the importance of system reforms over the study period, their perceptions of health care quality were low. It is likely that this is a result of restructuring because the serial evaluation of nurses over a longer time frame supports such a conclusion.²⁹ Staff at a large teaching hospital in Ontario generally agreed that organizational changes were needed in the pre-restructuring period, but were concerned about health care quality during and following system changes.³⁰

Acute care providers in NL believe that their ability to provide quality services has been compromised, in part, because system reforms (e.g., re-engineering, reductions in support and management personnel, bed closures, mergers) have altered the nature of the work environment, shortened lengths of stay and increased inpatient acuity levels. Front-line workers, especially nursing staff, from other Canadian provinces have expressed similar concerns.^{7, 16-18, 20-22} Job change, bumping, staff reductions and altered skill mix coupled with increased patient severity and complexity were highlighted as key factors contributing to decreased quality.^{7,16,17,21,31,32} Similar to the current study's findings,

providers report having less time available for meeting patients' basic and psychosocial/emotional care needs.¹⁶⁻¹⁹

In the current study, providers reported being less able to maintain work and professional standards. Several Canadian researchers^{17,18,20,21} found that nurses perceived health care quality to be generally sufficient to maintain professional standards, but were concerned about having to lower standards under certain circumstances (e.g., workload demands, job change, acuity levels of patients, shortened lengths of stay). Similar to the current study's findings, there is evidence to support the belief that the competence and abilities of staff and doctors are being maintained at acceptable levels.^{16, 18, 22} In contrast, some providers feel that patient safety is at increased risk due to the perceived inadequacy of hospital-based physical and human resources,^{7, 16, 17, 21} patients' and families' preparation for hospital discharge,^{7, 16} and community resources, especially with earlier discharge of sicker patients.²¹

Despite significant improvements in perceptions of quality and safety issues for the total sample over time, only the difference in nurses' scores achieved statistical significance on all indicators. Regionally, a significant improvement in safety was only noted in the St. John's region. A three-year follow-up of front-line workers and supervisors employed by a large teaching hospital undergoing merger and re-engineering of services in Ontario closely parallels the situation confronting providers in the St. John's region of the current study.²² Significant declines were observed in staff perceptions of certain quality

indicators (quality of care, hospital's commitment to quality improvement, staff's ability to deal with medical emergencies, and overall quality of hospital care and services) but not others (staff competence, and learning and research environments). In contrast, in a three-year follow-up study of nurses in Ontario, limited improvement in perceptions of reduced hospital functioning and lower quality of patient care since restructuring were found.³³

Although providers' and patients' perceptions are considered important outcomes, discrepancies often exist in how individuals providing care and those receiving it view quality.^{23,34,35} In contrast to the generally low ratings of health care quality by provider groups in the current study, patients were very positive about the quality of care received during their hospital stay. Two Canadian studies provide some support for the current study's findings.^{7,8} Despite being quite satisfied with the overall care received while hospitalized, patients in both of these studies were dissatisfied with discharge preparation and the post-discharge period. In addition, providers felt that the integration of admission and discharge services had improved access but improvements were needed in communication, efficiency, and discharge screening, among others.⁸ Lynam *et al.* found that most providers believed that system reforms (e.g., changes in organizational structures, workforce reduction, focus on clinical efficiency) coupled with increased patient acuity taxed their ability to maintain optimal care quality.⁷

In the current study, most patients were satisfied or very satisfied with the admission process and discharge planning, with discharge rated significantly higher than admission in 2000 and 2002. In contrast, Hadjistavaropoulos *et al.* reported that patients were moderately satisfied with admission and discharge, with satisfaction ratings slightly higher for admission.⁸ Three Canadian studies addressed patient satisfaction with specific aspects of discharge planning. Similar to the current study's findings, two found that patients 55 years of age and older, discharged from acute care settings in NL and Quebec, respectively, reported high levels of satisfaction with arrangements made for their return home.^{36,37} In contrast, patient satisfaction with hospital discharge preparation in Ontario for 2000 and 2002 was considerably lower.¹⁰

In the current study, there were no significant differences in satisfaction levels between the two time periods in the St. John's region. Similar findings have been reported elsewhere.¹⁰ However, significant decreases were observed in admission and discharge ratings over time for other regions, with time spent waiting to be admitted from the emergency room the greatest source of dissatisfaction. In contrast, while Hadjistavaropoulos *et al.* reported no change in satisfaction levels or admission timeliness, patients were dissatisfied with early and inadequate preparation for discharge.⁸

With most patients satisfied or very satisfied with care and caregivers in the current study, this suggests that patients place equal value on providers' communication style,

information sharing, tangible support, competence, and time spent providing information and promoting understanding. Patients elsewhere have also rated the quality of care received during hospitalization from good to excellent.⁸⁻¹⁰ Patient ratings of the care process did not change over time in the current study; however, a slight decrease was observed in Ontario after two years of improvement.¹⁰ Although a significant decline was noted in patients' satisfaction with all caregivers in regions outside St. John's, patients in Ontario were slightly less satisfied with the quality of care received from nurses and other caregivers, but remained satisfied with physicians.¹⁰

Finally, although only minimal regional differences were noted in satisfaction levels in 2000, patients in the St. John's region were significantly more satisfied with the admission process and hospital stay in 2002 than those in other regions. The observed differences were primarily due to the greater decline in satisfaction levels outside of St. John's over time. In contrast, Ontario's residents reported comparable levels of satisfaction with community hospitals and major tertiary care centres in both 2000 and 2002.¹⁰

The study had a number of limitations. It is not possible to attribute cause and effect to restructuring initiatives due to the absence of baseline data on providers' outcomes prior to system changes. A second study limitation relates to the low response rates for the providers' surveys which may limit the representativeness of the findings. The use of stratified random sampling and/or the total sample, as well as a repeated measures design,

partially compensates for this. A third limitation is that self-reported measures are inherently subjective, and collaboration between respondents at the same site and in the same union may have occurred. Furthermore, the use of telephone surveys may result in patients being less likely to report dissatisfaction when asked about the care received during hospitalization compared with a mailed questionnaire, which maintains anonymity. Finally, only short-term impacts of restructuring were measured; therefore, further improvements are possible from change strategies taken in St. John's.

In conclusion, although acute care restructuring in NL did not result in cost control,³ there was no impact on objective indicators of care quality. The high patient satisfaction scores obtained provide support for ability of the acute care sector to maintain acceptable levels of quality, despite substantial restructuring.

An entirely different picture of health care quality was derived from provider perceptions. To understand the perception of low quality from the viewpoint of NL providers, it is imperative that one recognizes that there were significant reductions in management layers, bed closures, and institutional closures, and there were high levels of internal transfers between institutions, departments, and units, especially in the St. John's region where aggregation of hospitals occurred.

The similarities of scores by providers in St. John's and other regions in 2000, and the improvement noted for St. John's during the early post-restructuring period, suggest that

major restructuring of acute care hospitals is feasible without attendant deterioration in providers' perceptions. As well, the observed increases in dissatisfaction ratings in other regions emphasize the importance of continuing this kind of analysis within and between regions.

The current study findings highlight the disparity between health care providers' and patients' views' about the quality of care. A couple of factors could be responsible for these differences. First, patients may be reluctant to report dissatisfaction for fear of reprisals on subsequent or future care. Second, providers recognize gaps based on professional standards that are not immediately obvious to patients. Thus, these two groups are using a different conceptual definition for quality of care. For example, patient satisfaction surveys monitoring quality of care tend to focus on the caring and supportive aspects (informational, tangible and emotional), while surveys of providers' perceptions focus more on professional standards, safety issues, and the adequacy of human and physical resources.

There are a number of policy implications arising from the current study's findings. First, policy formulations must focus on a collaborative multidisciplinary approach to the delivery of health care. Second, hospital administration needs more empirical evidence linking providers' perceptions of diminished quality of care to patient outcomes (e.g., adverse effects, medical errors) prior to the formulation and implementation of any health policies directed at this issue. Therefore, continuous surveillance of patients' and

providers' perceptions is imperative in order to explore the potential linkage of professional practice to patients' outcomes. Third, it could be argued that as patients become more well-informed about balanced report cards, outcomes and complication rates, more direct questions should be posed related to their perceived level of and satisfaction with the quality of clinical care (e.g., received the correct medication, correct diagnosis and/or treatment).

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References

1. Twells L, Doyle M, Gregory D, Barrett BJ, Parfrey PS. Acute care restructuring in Newfoundland and Labrador: the history and impact on costs. *J Health Serv Res Policy* 2005;**10**:4-11.
2. Davis EM. The Health Care Corporation of St John's: the first five years of restructuring of acute care hospitals by a regional board. *J Health Serv Res Policy* 2005;**10**:68-70.
3. Curtis BM, Gregory D, Parfrey PS, *et al.* Quality of medical care during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005;**10**:38-47.
4. Charles C, Gauld M, Chambers L, O'Brien B, Haynes B, Labelle R. How was your stay? Patients reports about their care in Canadian hospitals. *Can Med Assoc J.* 1994; **150**: 1813-1831.
5. Forbes DA, Alberda C, Anderson B, *et al.* Patients' perceptions of outcomes of a Canadian hospitalization. *Intern J Health Care Qual Assurance.* 1997; **10**: 221-228.
6. Leatt P, Baker GR, Halverson PK, Aird C. Downsizing, Reengineering and restructuring: Long-term implications for healthcare organizations. *Front Health Manag.* 1997; **13**: 3-37.
7. Lynam MJ, Henderson A, Browne A, *et al.* Healthcare restructuring with a view to equity and efficiency: reflections on unintended consequences. *Can J Nurs Leadership.* 2003; **16**: 112-140.

8. Hadjistavropoulos HD, Lawson K, Peters C, Asmundson GJG, Boisvert JA. Integrating admission and discharge services: Evaluation results, challenges and directions. *Healthcare Manag Forum*. 2002; **15**: 22-31.
9. Northcott HC, Northcott J.L. Survey Conducted by Population Research Laboratory University of Alberta. "The 2000 Survey About Health and the Health System in Alberta." Edmonton: Communications Branch, Alberta Health and Wellness, September 2000.
10. *Ontario Hospital Report*. Canadian Institute for Health Information. Government of Ontario, Ontario Hospital Association and the University of Toronto, 2003.
11. Markhan B, Lomas J. Review of the multi-hospital arrangements literature: benefits, disadvantages and lessons for implementation. *Healthcare Manag Forum*. 1995; **8**: 24-35.
12. Brownell MD, Roos NP, Burchill, C. Monitoring the impact of hospital downsizing on access to care and quality of care. *Med Care*. 1999; **37**: JS135-JS150.
13. Hamilton, SM, Letourneau S, Pekeles E, Voaklander D, Johnston WC. The impact of regionalization on a surgery program in the Canadian Health Care System. *Arch Surg*. 1997; **132**: 605-609.
14. Hemmelgarn BR, Ghali WA, Quan H. A care study of hospital closure and centralization of coronary revascularization procedures. *Can Med Assoc J*. 2001; **164**: 1431-1453.

15. Liu L, Hader J, Brossart B, White R, Lewis S. Impact of rural hospital closures in Saskatchewan, Canada. *Soc Sci Med*. 2001; **52**: 1793-1804.
16. Aiken LH, Clarke SP, Sloane DM, *et al*. Nurses' reports on hospital care in five countries: The ways in which nurses' work is structured have left nurses among the least satisfied workers, and the problem is getting worse. *Health Affairs (Millwood)*. 2001; **20**: 43-53.
17. Baumann A, Giovannetti P, O'Brien-Pallas L, *et al*. Healthcare restructuring: The impact of job change. *Can J Nurs Leadership*. 2001; **14**: 14-20.
18. Blythe J, Baumann A, Giovannetti P. Nurses' experiences of restructuring in three Ontario hospitals. *J Nurs Scholarship*. 2001; **33**: 61-68.
19. Doran D, Sidani S, Keatings M, Doidge D. An empirical test of the nursing role effectiveness model. *J Adv Nurs*. 2002; **38**: 29-39.
20. Greenglass ER, Burke RJ. Impact of Restructuring Scale: An Instrument to Measure Effects of Hospital Restructuring. *Healthcare Manag Forum*. 2001; **14**: 24-28.
21. Spence Laschinger HK, Sabiston JA, Finegan J, Shamian J. Voices from the trenches: Nurses' experiences of hospital restructuring in Ontario. *Can J Nurs Leadership*. 2001; **14**: 6-13.
22. Woodward CA, Shannon HS, Cunningham C, *et al*. The impact of re-engineering and other cost reduction strategies on the staff of a large teaching hospital: A longitudinal study. *Med Care*. 1999; **37**: 556-569.

23. Roos NP, Brownell M, Shapiro E, Roos LL. *Good news about difficult decisions: The Canadian approach to hospital cost control*. Health Affairs 1998; September/October: 239-245.
24. Way C. *Nurses' perception of health care reforms and their impact on the quality of health care and nursing practice*. St. John's, NF: The ARNN, 1995.
25. Pyne D. Nurses' perceptions of the impact of health care reform and job satisfaction. *Master's Thesis*. Memorial University of Newfoundland, St. John's, Newfoundland, Canada, 1998.
26. Health Care Corporation of St. John's. *Your Hospital Stay – A Survey for Patients and Families*. St. John's, Newfoundland, Canada, 1998.
27. Cohen, J. *Statistical Power Analysis for the Behavioral Science*. 2nd edn. Hillsdale: Laurence Erlbaum Associates, Inc.
28. Way C, Gregory D, Doyle M, Twells L, Barrett BJ, Parfrey PS. Health care provider outcomes during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005;**10**:58-67.
29. Way CY, Gregory D, Baker N, LeFort S, Barrett BJ, Parfrey PS. Attitudes and perceptions of registered nurses during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005;**10**:22-30.
30. Cunningham CE, Woodward CA, Shannon HS, et al. Readiness for organizational change: A longitudinal study of workplace, psychological correlates. *J Occup Org Psychol*. 2002; **75**: 377-392.

31. Burke RJ, & Greenglass ER. Effects of hospital restructuring on full time and part time nursing staff in Ontario. *Int J Nurs Stud.* 2000; **37**: 163-171.
32. McGillis Hall L, Doran D, Baker GR, *et al.* Nursing staff models as predictors of patient outcomes. *Med Care.* 2003; **41**: 1096-1109.
33. Burke RJ. Restructuring stressors and perceived hospital effectiveness. *Can J Nurs Leadership.* 2001; **14**: 21-26.
34. McGillis Hall L, Doran D, Spence Laschinger H, Mallette C, O'Brien-Pallas L, Pederson C. *A study of the impact of nursing staff mix models and organizational change strategies on patient, system and nurse outcomes.* 2001. Ottawa, Ontario; Canadian Health Services Foundation.
35. Tranmer JE. Who knows best: the patient or the provider? A nursing perspective. *Hosp Q.* 2000;**3**:25-9.
36. Fitzpatrick JM. *Patient Based outcomes: older adults perceptions of hospital and recovery experiences.* Doctoral Thesis. School of Social Work. Memorial University of Newfoundland, 1999.
37. Rowe WS, Yaffe MJ, Pepler C, Dulka IM. Variables impacting on patients' perceptions of discharge from short-stay hospitalization or same-day surgery. *Health Soc Care Commun.* 2000; **8**: 362-371.
38. Way C. *Nurses' perception of health care reforms and their impact on the quality of health care and nursing practice.* St. John's, NF: The ARNN, 1995.
39. Chubbs DO. *Nurses' perceptions of the impact of health care reforms, psychological contract violation, restructuring and general job satisfaction,*

organizational commitment, and intent to stay. Master's Thesis, Memorial
University of Newfoundland, St. John's, Newfoundland, Canada, 2002.

Appendix

Scale	Alpha 2000 & 2002	Content
RIHCRS		In a repeat survey of the Way ³⁸ study sample, Chubbs assessed the psychometric properties of the RIHCRS. ³⁹ This version was found to have strong internal consistency (i.e., alpha of 0.87 for overall scale, and subscale ranges between 0.60 and 0.82). Factor analysis reinforced the scale's construct validity, with items loading on six factors representing theoretical meaningful clusters (i.e., importance of reforms, emotional climate, practice issues, quality of care, safety concerns and standards).
Importance of reform	0.71 & 0.80	This four-item scale assessed the perceived importance of provincial restructuring and community-based care trends, professional challenges and motivation to facilitate an important role for ones profession.
Health Care Quality		
Quality of Care	0.71 & 0.80	This four-item scale assessed perceptions about patient access to services since restructuring, resource adequacy for ensuring comfort and meeting emotional/psychosocial needs, and adequacy of personnel to meet basic care needs.
Standards of Care	0.75 & 0.79	This four-item scale measured perceived potential for patient harm due to workplace stress/demands and inadequate information on new policies/procedures, and ability to meet professional care standards regarding workload demands, acuity levels, and ALOS.
Safety Issues	0.88 & 0.88	This five-item scale assessed perceptions about the adequacy of discharge preparation for patients/families, safety and competency issues in procedure performance, adequacy of physical and human resources to provide safe care, and adequacy of community resources for patients following hospital discharge.

Scale	Alpha 2000 & 2002	Content
Patient Satisfaction		
<i>I Hospital Stay</i>		
Accommodations Scale	0.59 & 0.96	The two-item Accommodations Scale measured satisfaction with information provided about the room (e.g., telephone, TV) and floor (e.g., location of the quiet room) features, and overall accommodations (e.g., privacy, cleanliness, noise level, temperature).
Caregivers Scale	0.83 & 0.87	This six-item scale assessed satisfaction with the care provided by physicians, nurses and allied health professionals, as well as the time spent to facilitate understanding of illness and treatment requirements.
Care Process Scale	0.92 & 0.98	This nine-item scale assessed satisfaction with concern and respect for patient and family/visitors, information given about the illness and treatment, answers to questions, plans of care, participation in decision-making, involvement of family/friends in care, respect for privacy and personal information, and assistance with ADLs.
Discharge Planning Scale	0.93 & .97	This six-item scale assessed satisfaction with information provided about the care required at home, medications and appointments, and available community services. Additional items addressed satisfaction with self and family preparation for care required at home, the amount of time devoted to discharge planning, and arrangements made for hospital discharge.
<i>II Hospital admission</i>		
Pre-Admission Scale	0.69 & 0.81	A four-item scale measuring satisfaction with being admitted on the same day as the surgery/test, total length of time spent in the pre-admission clinic, and the information provided on the procedure and Advanced Health Care Directives.
Regular Admission Scale	0.85 & 0.87	This four-item scale assessed satisfaction with explanations about the admitting process, sensitivity of admitting staff to personal needs and need for privacy, and the time spent in the admitting department.
Emergency Admission Scale	0.75 & 0.86	A five-item scale assessing satisfaction with the concern shown by staff, treatment given, information provided to family members, and provisions made for family presence.

CHAPTER 4

Attitudes and Perceptions of Registered Nurses During and Shortly After Acute Care Restructuring in Newfoundland and Labrador

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Abstract

Objectives: To monitor changes in registered nurses' perceptions of the impact of seven years of health care restructuring in Newfoundland and Labrador (NL) and to measure attitudinal and behavioral reactions over four years comparing the St. John's region, where hospital aggregation occurred, to other regions of the province.

Methods: Data were collected on acute care nurses' personal characteristics and perceptions of the importance of reform and its impact on workplace conditions and health care quality in 1995, 1999, 2000, and 2002. Nurses' attitudes and intentions were monitored across three time periods (i.e., 1999, 2000, and 2002).

Results: Perceived workplace conditions and health care quality, as well as attitudes and behaviors were generally negative. However, there was some improvement over time. The temporal sequence of scores suggests that restructuring had an adverse impact on nurses' attitudes. Few significant regional differences were observed.

Conclusions. Although health services restructuring had an adverse impact on nurses' attitudes, aggregation of hospitals in St. John's was achieved without further deterioration. Provincial wide initiatives are needed to promote more positive work environments and increase the organizational effectiveness.

Introduction

Concerns about inequitable access to health care and escalating costs have been the major driving forces propelling transformation of the Canadian health care system for the past 15 years. Regionalization of health services, by amalgamating several local health boards and centralizing authority under one regional board, was envisioned as a popular strategy for facilitating integration and coordination of health care delivery, controlling costs and improving service quality.^{1,2} Besides regionalization, Canadian hospitals have used such strategies as downsizing, restructuring, re-engineering and mergers.²⁻⁴

In the province of Newfoundland and Labrador (NL), there was a reduction in the number of boards in the six health care regions, integration of acute and long-term care except in the St. John's region, and 40%-50% reductions in management positions and support personnel between 1994 and 1996. In five of the six regions, administration of separate facilities was replaced with a functionally oriented system and multidisciplinary teams. The resulting cost savings were re-directed to expand frontline services to help maintain quality.⁵

The St. John's region, the largest employer of nurses in the province, has had the most pervasive health care reforms. Besides regionalization, hospitals have undergone downsizing, restructuring, re-engineering, closure and merger of facilities. Tertiary and secondary care facilities were incorporated under the authority of the Health Care Corporation of St. John's (HCCSJ) with complete integration of administrative and

support services. In April 1996, the HCCSJ eliminated the traditional departmental structure and integrated clinical services under a programme-based management structure (i.e., clinical and support services re-organized into 16 programmes), resulting in significant changes in managerial roles and responsibilities. A professional practice model was also implemented to facilitate decentralized, collaborative decision-making. Additional initiatives (including Nursing Peer Support Group, Nursing Professional Practice Framework, Corporate Professional Practice Committee and Nurse's Quality of Worklife Team) were implemented to support nurses and facilitate nursing input into issues affecting practice and the work environment.⁵ Finally, closure of one adult acute care hospital and integration of its services with the two remaining acute care hospitals resulted in a huge dislocation of about 50% of nursing staff.

Many of the reform initiatives have had direct and indirect implications for registered nurses (RNs) working in NL. Labour unrest dominated the provincial scene in 1999. A nurses' strike in April ended with the passage of Bill 3, which removed the Newfoundland and Labrador Nurses Union's (NLNU) right to binding arbitration and imposed a collective agreement. The NLNU issued 'Code of Conduct' guidelines to its members dealing with the elimination of non-nursing duties. In May 1999, the government announced several initiatives to help reduce nurses' workload: increase the availability of existing support staff; hire more support staff; and convert a number of casual positions ($n = 340$) to permanent positions. Following months of negotiations between representatives from the NLNU and government, an agreement was also reached

on classification issues in August of 2000 and government monies allocated to support the recruitment and retention of new graduate nurses.

Successful achievement of the objectives of health care reform requires meaningful consultation with and involvement of all provider groups at each stage of the process. The past decade has seen a proliferation of studies and reports addressing the problems generated by reform initiatives. There is a developing research base on the negative repercussions experienced by RNs in terms of workplace conditions, health care quality, satisfaction with managerial and interdisciplinary relations, general job satisfaction, organizational commitment levels, trust in employers, and intentions to remain with current employers.⁶⁻¹³ Concerns have been raised that the negative impact of reform on employee attitudes and behaviors may decrease the effectiveness and efficiency of organizations.^{2,11,14,15}

The current study is part of a larger project to examine the implications of reform for acute care organizations in NL. This paper has four objectives:

- to examine how RNs perceived the impact of health care reform in acute care;
- to assess RN outcomes such as trust in employers, general job satisfaction, organizational commitment, and likelihood of staying with current employers;
- to monitor changes in perceptions and outcome over seven years with a focus on within- and between-regional differences;

- to examine the associations between perceptions of reform impact and provider outcomes.

Methods

Four surveys of RNs working in the NL health care system were conducted at key periods in the reform process (1995, 1999, 2000, and 2002). Although the 1995 study included a survey of RNs working in all health care sectors, the 2000 study was restricted to those working in acute care. The 1999 and 2002 studies were repeat surveys of respondents to the 1995 and 2000 studies, respectively. A notable strength of the current study was the use of two repeated-measures designs as opposed to a series of cross-sectional designs.

Procedure

In 1995, the professional regulatory body for RNs in the province, the Association of Registered Nurses of Newfoundland and Labrador (ARNNL), commissioned a study to generate a database on attitudes toward health care reform. This was at the start of regionalization, but prior to managerial restructuring and rationalization of services. Questionnaires were sent to a random sample and reminders were mailed four weeks later. To maintain anonymity and confidentiality, questionnaires did not include any identifying information about respondents. Return envelopes were coded to correspond with the mailing list to allow tracking by region.

For subsequent surveys, data collection commenced following ethical approval from the Human Investigation Committee, Faculty of Medicine, Memorial University of Newfoundland. In the 1999 study, the ARNNL supported and facilitated data collection by cross referencing the 1995 study list of RNs against the most current registration list to identify those still practicing in the province. The same process used for data collection in the 1995 study was followed in the summer of 1999.

For the 2000 and 2002 studies, the decision was made to obtain additional data-sets that would provide a useful point of comparison for the 1995 and 1999 data. The ARNNL generated the most updated list of acute care nurses working in direct care in 2000 by registration number and matching region. The data collection process for the 2000 and 2002 studies was similar to the 1995 and 1999 studies, except for the inclusion of registration numbers on questionnaires for the purpose of follow-up. In addition, in 2002, a second wave of questionnaires was sent out to the 85 non-responders, increasing the overall response rate by approximately 13%.

Population and Sample

In the 1995 study, the accessible population (those appearing on the most recent mailing list of the ARNNL and agreeing to participate in research through the ARNNL; $n = 3982$) was used to generate a proportional stratified random sample of RNs ($n = 736$) working in all health sectors in the six regions of the province (Eastern 1, Eastern 2, Eastern 3, Central, Western, Northern/Labrador). A total of 333 responded to the survey (45.2%

response rate). The sample was similar to the population of nurses on all major demographics, with the exception of years of nursing experience.¹⁶ This difference could be explained in part by the variant coding practices used in the sample questionnaire and the ARNNL registration form.

In 1999, questionnaires were sent to all RNs who had responded to the 1995 survey and who were still licensed and working in the province ($n = 290$). Completed surveys were received from 181 (62.4%). The respondents were similar to the population as regards age and education. A large discrepancy was observed in employment status, which can be explained by the conversion of a large number of part-time to full-time positions.

During the 2000 study, the criteria used to define the accessible population were the same as in the 1995 study, except for the restricted focus on RNs working in acute care. A proportional stratified random sample of 654 was selected from the total accessible population ($n = 3583$). Responses were obtained from 223 (34.1%). The sample did not differ significantly from the population as regards age, education, and employment status.

For the 2002 study, the sample was restricted to those responding to the 2000 survey and still practicing in acute care settings ($n = 214$). Responses were received from 158 (73.8%). As in 2000, the sample reflected the provincial nursing population working in acute care as regards age, education, and employment status.

Instruments

The instruments used for data collection varied over time. A brief summary follows on the questionnaires used to measure the various categories of variables at different study phases. Greater detail on the scales and their psychometric properties is presented elsewhere.^{17, 18}

At baseline, the Perceptions of Health Care Reform Questionnaire (PHCRQ) was used. It consists of a sociodemographic section and the Impact of Health Care Reform Scale (IHCRS). The 25-item IHCRS was developed from qualitative data on RNs' perceptions of proposed reforms for the NL health care system.¹⁶ It assesses perceptions of the importance of reform, workplace conditions (such as emotional climate and practice issues), and health care quality. Scale items for the IHCRS are rated from 1 (strongly disagree) to 6 (strongly agree), with higher scores indicating greater satisfaction.

For subsequent surveys, the Employee Attitudes Survey (EAS) was developed. It consists of a demographic and work-related section and scales measuring perceptions of the impact of reforms and provider outcomes. The IHCRS was modified to enhance item clarity, resulting in an additional 5 items. The 30-item Revised Impact of Health Care Reform Scale (RIHCRS) measured reform impact with the same six subscales as the original IHCRS. In addition, the five-item Collaborative Relations (CR) scale developed by Way and Gregory assessed satisfaction with managerial and interdisciplinary relations following restructuring. Both the RIHCRS and CR scale were validated in the 1999

study. Scale items for the RIHCRS and the CR are rated from 1 (strongly disagree) to 6 (strongly agree), with higher scores indicating greater satisfaction.

Four scales were used to assess work-related attitudes (trust in employers, job satisfaction and organizational commitment) and behavioural intentions (i.e., intent to stay). Trust in employers was measured with a four-item Psychological Contract Violation (PCV) scale.¹⁹ Items are rated on a five-point scale, ranging from 1 (very poorly fulfilled, very infrequently, much less than promised or much less than it should) to 5 (very well fulfilled, very frequently, much more than promised or more than it should). Higher scores indicate less perceived violation of implied contracts. Job satisfaction was measured with the three-item General Job Satisfaction scale.²⁰ Items are ranked from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating greater job satisfaction. The nine-item Organizational Commitment Questionnaire (OCQ) assessed organizational commitment.²¹ Items are rated from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating greater commitment. The three-item Intent to Stay (IS) scale was adapted from The existing Intent to Quit and Job Search Scales.¹⁹ Items are rated on a five-point scale, ranging from 1 (very unlikely/infrequently) to 5 (very likely/frequently). Higher scores reflect greater intent to stay with current employers.

Data Analysis

Descriptive statistics were used to examine personal characteristics and the distribution of individual items, subscales and total scale scores. Weighted means were calculated for

each subscale and scale by dividing the individual scores by the relevant number of items.

For the purpose of data analysis, only those respondents to the 1995 and 1999 surveys who worked as clinicians in acute care were included. This reduced the sample sizes from 333 to 281 and 181 to 155, respectively, and when applied to the 2000 and 2002 data-sets the sample size decreased from 223 to 222 and 158 to 135, respectively.

Tests of difference (χ^2 and *t*-tests) were used to assess the comparability of the 1995 and 2000 samples. Differences in perceived impact of reform and work-related attitudes and behavioural intentions across the time periods were examined in a number of ways.

Although the same group of nurses was surveyed in 1995 and 1999, it was not possible to match the responses of each participant between the two time periods. Thus, the *t*-test for independent groups was used to compare mean scores. In contrast, it was possible to match the 2000 and 2002 respondents; thus, the paired-samples *t*-test was used to assess changes in mean scores.

There were no statistically significant differences between repeat responders and non-responders on any of the impact of health care reform variables ($p > 0.01$). There were, however, a number of significant differences in work-related attitudes and behavioral intentions. Specifically, repeat responders were more satisfied with their jobs, more

committed to their organizations and more likely to stay with their current employer ($p < 0.01$).

One-way analysis of variance (ANOVA) was used to examine changes in major study variables across the study years. When ANOVA results were significant or approached significance, the appropriate multiple-comparison procedure was used to determine the differences between specific years. Due to the number of differences examined, the significance level was set at $p < 0.01$ for all ANOVA results (overall and *post-hoc* comparisons). A similar format was used to examine regional differences over time. Study findings in this paper are restricted to ANOVA results.

Pearson's correlation coefficient (r) was used to determine the degree of association between the impact and provider outcome variables, as well as among the provider outcome variables. Also, Pearson's r , t -tests and/or ANOVA were used to examine the influence of correlates, such as personal characteristics, on major study variables. An alpha level of 0.01 was selected as the significance level for tests of association and difference.

Results

Sample Characteristics

Table 4.1 summarizes key characteristics of the RN samples at different time periods. Because 1999 and 2002 were repeat samples of previous years, the discussion is

restricted to a comparison of the random samples of clinical nurses working in acute care obtained in 1995 ($n = 281$) and 2000 ($n = 222$). The mean sample age was 35.6 years ($SD \pm 8.2$) in 1995 and 38.3 years ($SD \pm 8.1$) in 2000. There were no statistically significant differences between 1995 and 2000 samples based on region of employment and education level. However, there were a number of significant differences in terms of years of nursing experience, employment status, current position tenure and age. Specifically, there were fewer RNs with less than 20 years work experience categories 2000 than in 1995 ($\chi^2 [3] = 24.22, p < 0.001$). A greater number of respondents in 2000 were older ($t = [497] = -3.68, p < 0.001$) and working in full-time positions ($\chi^2 [2] = 1.056, p < 0.01$) than their counterparts in 1995. These differences may be a function of an aging workforce and contract negotiations to convert a number of casual positions to regular full- and/or part-time positions in the province.

Changes over time

Workplace conditions. For all study years, RNs were most negative about the emotional climate of the workplace (Table 4.2). Nurses believed that restructuring had negative repercussions for the emotional climate (less satisfying and challenging, and more stressful due to increased demands, less respect and reduced co-worker support), practice issues (less involvement in decision-making and control over practice, and reduced continuing education opportunities), and collaborative relations (less visible, accessible and informative managers; and more strained interdisciplinary relations).

Table 4.1 Personal characteristics of registered nurses working in acute care in 1995 ($n = 281$), 1999 ($n = 155$), 2000 ($n = 222$), and 2002 ($n = 135$)

Characteristic	1995		1999		2000		2002	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
<i>Education</i>								
Diploma	245	87.2	128	82.6	191	86.0	118	87.4
BN or higher	36	12.8	27	17.4	31	14.0	17	12.6
<i>Region</i>								
St. John's	129	45.9	73	47.1	90	40.9	64	47.4
Outside Regions	152	54.1	82	52.9	130	59.1	71	52.6
<i>Employment Status</i>								
Full-time	185	66.3	111	71.6	170	76.2	104	77.0
Part-time	46	16.5	30	19.4	35	15.8	26	19.3
Casual	48	17.2	14	9.0	17	7.7	5	3.7
<i>Nursing Experience</i>								
≤ 4 years	48	17.1	---	---	22	9.9	5	3.7
5 - 9 years	63	22.4	26	16.8	36	16.2	18	13.3
10 -19 years	128	45.6	73	47.1	92	41.4	58	43.0
≥ 20 years	42	14.9	56	36.1	72	32.4	54	40.0
<i>Years in Current Position</i>								
≤ 2 year	65	23.1	25	16.1	46	20.7	22	16.4
3 - 4 years	44	15.7	12	7.7	34	15.3	22	16.4
5 - 9 years	109	38.8	39	25.2	62	27.9	43	32.1
≥ 10 years	63	22.4	79	51.0	80	36.0	47	35.1

BN, Bachelor of Nursing

In comparison to the 1995 data at the start of regionalization but prior to re-engineering, there was a significant worsening of nurses' attitudes toward the emotional climate and practice issues in 1999. However, these attitudes started to improve by 2000 and approached 1995 levels in 2002. In addition, nurses' perceptions of collaborative relations were mostly negative in 1999. There was evidence of an upward trend by 2000, with 2002 levels significantly different from previous years.

Regionally, no significant differences were observed between nurses working in St. John's and those working in other regions at any of the time periods (data not shown). In addition, regional patterns of change closely paralleled the provincial scene.

Importance of reform and health care quality. The data presented in Table 4.2 also suggest that, although RNs understood and supported the need for health care reform, they were concerned about the negative impact of such initiatives on health care quality. Specifically, a significant number were concerned about the low quality of patient care (unreasonable access to services and inadequate resources for providing comfort or meeting patients' emotional/ psychosocial and basic care needs) and less-than-optimal care standards (insufficient in-service education, lower professional standards due to increased demands, greater patient acuity and shortened lengths of stay). Although most respondents acknowledged that patient safety was an issue because of inadequate staffing levels, patient preparation for discharge and patient access to community resources post-

discharge, they were confident that physical resources were adequate and procedures were performed in a safe and competent manner.

While no significant changes were detected in how nurses viewed importance of reform, their attitudes toward health care quality fluctuated in a manner similar to that of workplace conditions. Specifically, the significant decrease observed in nurses' ratings of quality and standards of care from 1995 to 1999 was followed by steady improvements in 2000 and 2002. Although a similar pattern was observed with safety issues, both the 1995 and 2002 levels were significantly higher than those obtained in 1999 and 2000.

Finally, similar to the data on workplace conditions, no significant differences were observed between nurses working in St. John's and those working in other regions at any of the time periods (data not shown). In addition, regional patterns of change closely paralleled the provincial scene.

Table 4.2

Serial scores on the Impact of Health Care Reform perceived by registered nurses working in acute care in NL from 1995 to 2002.

Subscales	1995*	1999 [†]	2000 [‡]	2002 [§]	F
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Importance of reform	4.23 (.77)	4.05 (.97)	4.00 (.85)	4.02 (.79)	3.67 (p = .012)
Workplace Conditions					
Emotional Climate	2.88 (.96)	2.33 (.86)	2.47 (.97)	2.70 (.98)	13.95 (p = .000)***
Practice Issues	3.46 (1.11)	2.60 (1.09)	2.85 (1.13)	2.96 (1.23)	22.50 (p = .000)***
Collaborative relations	---	2.63 (1.07)	2.73 (1.18)	3.12 (1.22)	7.17 (p = .001)**
Health Care Quality					
Quality of Care	2.75 (.88)	2.19 (.94)	2.53 (.93)	2.77 (.82)	14.76 (p = .000)***
Safety Concerns	3.51 (.92)	2.79 (.91)	3.12 (.90)	3.40 (.87)	23.44 (p = .000)***
Standards of Care	3.01 (.95)	2.45 (.90)	2.79 (1.05)	3.01 (.87)	12.75 (p = .000)***

*ARNNL 1995 (n = 281). [†]Restructuring Project 1999 (n = 155). [‡]Restructuring Project 2000 (n = 222).

[§]Restructuring Project 2002 (n = 135).

Work attitudes/behaviours. For all study periods, nurses were distrustful of employers' intentions to fulfil commitments made to them upon hiring, had low levels of commitment to their organizations, and were unsure about staying with current employers (Table 4.3). There were no significant changes in these work-related variables over time. In contrast, nurses were generally satisfied with their jobs. Satisfaction levels improved over time, with 2002 levels significantly higher than previous years ($p < 0.01$).

No significant regional differences were observed in work attitudes/behaviours for any of the study years (data not included). There were also few significant changes within regions. Although satisfaction levels improved in the St. John's region over time, statistical significance was only achieved in 2002 ($p < 0.01$).

Table 4.3

Serial scores on Work Attitudes perceived by registered nurses working in acute care in NL from 1999 to 2002

Subscales	1999 [†]	2000 [†]	2002 [‡]	F
	Mean (SD)	Mean (SD)	Mean (SD)	
Trust in Employer	2.60 (.62)	2.56 (.61)	2.75 (.57)	3.90 ($p = .021$)
Job Satisfaction	3.89 (1.38)	4.05 (1.48)	4.49 (1.31)	6.94 ($p = .001$)
Organizational Commitment	3.58 (1.29)	3.37 (1.29)	3.55 (1.28)	1.45 ($p = .237$)
Intent to Stay	3.02 (.92)	3.11 (1.02)	3.28 (1.01)	2.45 ($p = .088$)

*Restructuring Project 1999 (n = 155); [†]Restructuring Project 2000 (n = 222);

[‡]Restructuring Project 2002 (n = 135); SD, standard deviation.

Correlates of Outcome. For all time periods, significant positive correlations were observed among reform impact and work-related attitudes/behaviours. There were few changes in the magnitude (0.25-0.65) and significance levels ($p < 0.01$ to < 0.001) over time. Table 4.4 summarizes the correlations for the 2002 sample. The findings suggest that more positive perceptions of workplace conditions and health care quality are significantly associated with more positive work-related attitudes and behaviours. In contrast, more positive views toward the importance of reform were only significantly correlated with greater levels of organizational commitment and job satisfaction.

Table 4.4

Correlations between registered nurses perceptions of the Impact of Health Care Reform and Work Attitudes in 2002

Variable	Trust in Employer	Commitment	Job Satisfaction	Intent to Stay
<i>Workplace Conditions</i>				
Emotional Climate	0.53***	0.48***	0.65***	0.46***
Practice Issues	0.39***	0.36***	0.43***	0.30**
Collaborative Relations	0.49***	0.47***	0.56***	0.42***
<i>HealthCare Quality</i>				
Quality of Care	0.39***	0.33***	0.29**	0.29**
Safety Issues	0.41***	0.29**	0.39***	0.37***
Standards of Care	0.37***	0.32***	0.26**	0.35***
Importance of reform	0.11	0.25**	0.31***	0.06

Notes:

** $p < 0.01$. *** $p < 0.001$.

Discussion

RNs working in all jurisdictions in NL identified problems with the workplace and health care quality prior to the implementation of major reform. RNs working as clinicians in acute care were generally supportive of the importance of reform, but remained dissatisfied with workplace conditions and health care quality. In addition, the 1999, 2000 and 2002 study findings highlighted the levels of low trust, organizational commitment and intent to stay among nurses. Nonetheless, they retained positive attitudes toward their jobs. Nurses' perceptions were similar, regardless of the organizational structure (traditional, functional versus programme-based management) governing the health care region of employment.

RNs perceptions of workplace conditions and health care quality declined from the early stages of regionalization in 1995-9. Despite steady improvements in subsequent years, nurses remained apprehensive about the repercussions of reform. One hypothesis - that the low ratings observed in the St. John's region could be partially due to closure of hospitals and major staff dislocation - was not tenable because nurses' scores were similar in other regions. It is difficult to determine if the modest gains observed from 1999 to 2002 were the result of major investments made by the HCCSJ during the reform process. Our findings on the low ratings of the workplace (emotional climate, decision latitude, control/responsibility, supervisory/ interdisciplinary relations) early in the reform process parallel those related elsewhere.^{12,22} Similar to the findings from NL studies, Burke²³ reported that nurses in Ontario felt that the quality of patient care

continued to be compromised three and six years following restructuring and downsizing. Inconsistent findings have been reported on staff perceptions of the quality of patient care post-hospital mergers and re-engineering of services.¹²

The introduction of programme-based management in conjunction with a professional practice model in the HCCSJ was intended to facilitate decentralized, participatory decision-making and improve intra- and inter-disciplinary communication.⁵ Mechanisms were also introduced to ensure that the quality of patient care was maintained. However, significant reductions in management positions, as well as role changes and increased responsibilities of clinical managers, could partially explain the protracted period of greater negativity toward workplace conditions, and the slow but steady improvement four to six years following the initiation of restructuring in the St. John's region.

Several Canadian studies were identified, which examined the impact of health care reforms on acute care nurses. Similar to the HCCSJ in NL, shared governance models were implemented in most provinces along with the elimination of middle management positions. In contrast to the NL scene, there was also downsizing and replacement of the RN workforce with multi-skilled workers. Similar to the current study, other researchers have found that nurses tend to give low ratings to the emotional climate of the workplace.

^{6,8,10, 12, 24-26} However, contradictory findings have been reported elsewhere.^{22, 27}

Improvements in professional nursing practice and collaborative relations were expected following the introduction of patient-centred care and shared governance models. There is some evidence supporting greater autonomy and practice control^{22, 28} and improved interdisciplinary relations, especially with physicians following restructuring.^{28, 29} In contrast, other researchers have found that acute care nurses report limited practice control and input into decision-making,^{7, 8, 10, 29} reduced in-service and professional development opportunities,^{7, 10, 26} less visible, accessible and supportive managers,^{6, 8, 10, 12, 26, 29} and greater strained interdisciplinary relations.^{7, 11}

With the focus on re-engineering and restructuring, acute care institutions introduced patient-centred care models to help reduce inefficiencies of the traditional system and better meet the needs of patients. The current study was generally inconclusive on the impact of redesign initiatives on the quality of care. Similar to the current study, other researchers have reported on the positive recognition given to the intent and value of health care reform by nurses.^{22, 30, 31} In addition, empirical evidence suggests that RNs believe that the overall quality of acute care has been compromised.^{7, 8, 10-12, 25, 26, 29} However, objective measurement of quality of care undertaken in the larger project suggests there was no negative impact on patients' outcomes.³² Similar findings on the lack of evidence to support nurses' concerns about compromised quality of patient care following restructuring have been reported by others.³³

With regard to the specific aspects of quality of care, RNs are generally concerned with the reduced time for providing comfort and basic care, and dealing with psychosocial needs.^{7,10,11,15,26,29,34} Despite concerns about patient safety,^{7,8,10,26,29} nurses feel capable of maintaining acceptable competency levels.^{8,12,29} In addition, although nurses feel capable of meeting professional standards, they are concerned about having to lower standards under certain circumstances (workload demands, job change, acuity levels of patients and shortened lengths of stay).^{7,8,10,11,25} There is also some support for the perceived increased susceptibility of patients to potential harm from errors and injury.^{7,8,26,29}

The incongruence between nurses' expectations about reform and perceived outcomes may be a contributing factor in RNs' distrust of employers, low levels of organizational commitment and ambivalence about staying with current employers observed in the current study. Similar to this study, other Canadian researchers have conjectured that the low trust,^{8,9,22,35,36} commitment,^{7-9,26,28,35,36} and intent to stay^{24,29,37} scores obtained from nurses are due to the shortfalls associated with restructuring. The modest gains observed in job satisfaction could possibly be due to the benefits accrued following the labor dispute settlement in 2000. In contrast to the current study, low and/or declining job satisfaction levels have been reported by others.^{6,7,10,13,15,24,28}

Finally, all impact scales were significantly related to provider outcome scales. These results suggest that RNs' perceptions of workplace conditions and health care quality are important determinants of attitudes and behaviours during and after reform. Although no

comparable studies were identified on the effects of restructuring on nurses' trust of employers, others suggest that feelings of powerlessness may generate greater feelings of distrust.^{8,9}

RNs who have positive perceptions about the importance of reform, workplace conditions and health care quality have significantly higher levels of overall job satisfaction.

Specifically, studies conducted at various stages of the reform process support the important effects of the emotional climate,^{6,13,22,28,31,35,36,38} practice control/autonomy,^{13,22,28,31,35,36,38} collaborative relations,^{8,10,13,28} and health care quality^{8,31,36} on acute care nurses' overall job satisfaction. There is less support for the linkage between nurses' organizational commitment and perceptions of the emotional climate,^{8,35} practice control/autonomy,^{9,39} and collaborative relations.⁶⁻⁷ Finally, few studies have examined how perceptions about workplace conditions and health care quality relate to acute care nurses' likelihood of remaining with current employers. In contrast to the current study's findings, Laschinger *et al.* found that work place empowerment had a minimal effect on continuance commitment.⁹

The authors wish to acknowledge a number of study limitations. Although the study is longitudinal in nature, it is not a true repeated-measures design, due to the use of two random samples and the absence of linking criteria between the first two study periods. This obviously compromises the conclusiveness of the findings. A second study limitation relates to the low response rates that are typical of mail out surveys. However,

the use of sampling techniques and the fairly strong comparability between the sample and the population on available demographics partially compensate for this. The third limitation is the refusal of an increasing proportion of nurses to allow release of their names for research purposes. This restricted access limits the generalizability of not only the current study's findings but also future studies to the general nursing population.

Conclusion

Despite the growing body of research designed to systematically monitor the impact of organizational change on intended outcomes (patient, provider and organizational effectiveness), there is no consensus on what facilitates employees' acceptance of and adjustment to change. RNs working in acute care in NL continue to perceive negative repercussions resulting from changes in the health care system. Clearly, the supportive mechanisms instituted to buffer the impact of change have had limited success and further intervention is required. Provincial initiatives to improve the emotional climate of the workplace and collaborative relations may achieve improvements in nurses' attitudes and behaviours, which may translate into enhanced organizational commitment and subsequent improvement in productivity. An equally important consideration from a policy perspective is the perceived negative impact on health care quality. It has been documented in this study and elsewhere that restructuring has significantly altered the face of professional nursing practice. Yet, very few measures, if any, have been implemented to address this issue. Policy-makers considering further health care reform must consider the impact of such initiatives on nursing practice. One helpful strategy may

be to institute initiatives to foster better collaborative relations among the professions and with management.

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References

1. Church J, Barker P. Regionalization of health services in Canada: A critical perspective. *Int J Health Serv.* 1998; **28**:467-486.
2. Decter MB. Canadian hospitals in transformation. *Med Care.* 1997; **35** (suppl 10): OS70-OS75.
3. Leatt P, Baker RG, Halverson PK, Aird C. Downsizing, Reengineering, and Restructuring: Long-term implications for healthcare organizations. *Front Health Manage.* 1997; **13**: 3-37.
4. Shamian J, Lightstone EL. Hospital restructuring initiatives in Canada. *Med Care.* 1997; **35**(suppl 10):OS62-OS69.
5. Davis EM. The Health Care Corporation of St. John's: the first five years of regionalization and restructuring. *J Health Serv Res Policy* 2005; **10**(Suppl 2): 68-70.
6. Armstrong-Stassen M, Cameron SJ, Horsburgh ME. The impact of organizational downsizing on the job satisfaction of nurses. *Canad J Nurs Admin.* 1996; **9**: 8-32.
7. Baumann A, O'Brien-Pallas L, Armstrong-Stassen M, et al. *Commitment and care: The benefits of a healthy workplace for nurses, their patients and the system. A policy synthesis.* Ottawa, Ontario: Canadian Health Services Research Foundation, 2001.
8. Blythe J, Baumann A, Giovannetti P. Nurses' experiences of restructuring in three Ontario hospitals. *J Nurs Scholarship.* 2001; **33**: 61-68.

9. Spence Laschinger HK, Finegan J, Shamian J, Casier S. Organizational trust and empowerment in restructured healthcare settings: Effects on staff nurse commitment. *J Nurs Admin.* 2000; **30**: 413-425.
10. Spence Laschinger HK, Sabiston JA, Finegan J, Shamian J. Voices from the trenches: Nurses' experiences of hospital restructuring in Ontario. *Canad J Nurs Leadership.* 2001; **14**: 6-13.
11. Maurier WL, Northcott HC. Job uncertainty and health status for nurses during restructuring of health care in Alberta. *West J Nurs Res.* 2000; **22**: 623-41.
12. Woodward CA, Shannon HS, Cunningham C, et al. The impact of re-engineering and other cost reduction strategies on the staff of a large teaching hospital: A longitudinal study. *Med Care.* 1999; **37**: 556-569.
13. Woodward CA, Shannon HS, Lendrum B, Brown J, McIntosh J, Cunningham C. Predictors of job stress and satisfaction among hospital workers during re-engineering: Differences by extent of supervisory responsibilities. *Healthcare Manage Forum.* 2000; **13**:29-35.
14. Aiken, L. H., Clarke, S. P., & Sloane, D. M. (2000) Hospital restructuring: Does it adversely affect care and outcomes? *J Nurs Admin.* 2000; **30**: 457-465.
15. Burke RJ, Greenglass ER. Effects of hospital restructuring on full time and part time nursing staff in Ontario. *Int J Nurs Studies.* 2000; **37**: 163-171.
16. Way, C. *Nurses' Perception of Health Care Reforms and Their Impact on the Quality of Health Care and Nursing Practice.* St. Johns, NF: The ARNN, 1995.
email: info@arnnl.nf.ca.

17. Way C, Gregory D, Doyle M, Twells L, Barrett BJ, Parfrey PS. Health care provider outcomes during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005; **10**:58-67.
18. Gregory D, Way C, Barrett B, Parfrey P. Health care quality from the perspective of health care providers and patients during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005; **10**(Suppl 2): 48-57.
19. Turnley WH, Feldman DC. Psychological contract violations during corporate restructuring. *Hum Resource Manage* 1998; **37**: 71-83.
20. Hackman JR, Oldman GR. Development of the job diagnostic survey. *J Appl Psychol.* 1975; **60**: 159-170.
21. Mowday RT, Steers RM, Porter LW. The measurement of organizational commitment. *J Vocation Behav.* 1979; **14**: 224-247.
22. Best JA, Walsh G, Muzin F, Berkowitz J. Healthy hospital: Toward a better tomorrow: A demonstration project to promote culture change through participatory decision-making. *Healthcare Manage Forum.* 1997; **10**: 43-53.
23. Burke, R. J. Restructuring stressors and perceived hospital effectiveness. *Canad J Nurs Leadership.* 2001; **14**: 21-26.
24. Burke RJ. Survivors and victims of hospital restructuring and downsizing: who are the real victims. *Int J Nurs Studies.* 2003; **40**: 903-909.

25. Greenglass ER, Burke RJ. Impact of Restructuring Scale: An Instrument to Measure Effects of Hospital Restructuring. *Healthcare Manage Forum*. 2001; **14**: 24-28.
26. Lynam MJ, Henderson A, Browne A, *et al*. Healthcare restructuring with a view to equity and efficiency: reflections on unintended consequences. *Canad J Nurs Leadership*. 2003; **16**: 112-140.
27. Spence Laschinger HK, Wong C, McMahon L, Kaufmann C. Leader behavior impact on staff nurse empowerment, job tension, and work effectiveness. *J Nurs Admin*. 1999; **29**: 28-39.
28. Spence Laschinger HK, Almost J, Tuer-Hodes D. Workplace empowerment and magnet hospital characteristics. *J Nurs Admin* 2003; **33**: 410-4224.
29. Aiken LH, Clarke SP, Sloane DM, *et al*. Nurses' reports on hospital care in five countries: The ways in which nurses' work is structured have left nurses among the least satisfied workers, and the problem is getting worse. *Health Affairs (Millwood)*. 2001; **20**: 43-53.
30. Cunningham CE, Woodward CA, Shannon HS, *et al*. Readiness for organizational change: A longitudinal study of workplace, psychological correlates. *J Occup Org Psychol*. 2002; **75**: 377-392.
31. Pyne D. *Nurses' perceptions of the impact of health care reform and job satisfaction (Masters thesis)*. St. John's, NL: Memorial University of Newfoundland, 1998.

32. Curtis BM, Gregory D, Parfrey PS, *et al.* Quality of medical care during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005;10:38-47.
33. Brownell MD, Roos NP, Burchill C. Monitoring the Impact of Hospital Downsizing on Access to Care and Quality of Care. *Med Care.* 1999; 37 (suppl): JS135-150.
34. McGillis Hall L, Doran D, Baker GR, *et al.* Nursing staff models as predictors of patient outcomes. *Med Care.* 2003; 41: 1096-1109.
35. Spence Laschinger HKS, Finegan J, Shamian J, Almost J. Testing Karasek's Demands-Control Model in restructured healthcare settings: Effects of job strain on nurses' quality of worklife. *J Nurs Admin* 2001; 31: 233-243.
36. Greenglass ER, Burke RJ, Fiksenbaum L. Impact of restructuring, job insecurity and job satisfaction in hospital nurses. *Stress News [Serial online].* 2002; 14: Available at: <http://www.isma.org.uk/stressnw/hospnurse1.htm>.
37. Zboril-Benson LR. Why nurses are calling in sick: The impact of health-care restructuring. *Canad J Nurs Res.* 2002; 33: 89-107.
38. Brown JA, Woodward CA, Shannon HS, *et al.* Determinants of job stress and job satisfaction among supervisory and non-supervisory employees of a large Canadian teaching hospital. *Healthcare Forum.* 1999; 12: 27-33.
39. McDermott K, Laschinger HK, Shamian J. Work empowerment and organizational commitment. *Nurs Manage.* 1996; 27: 44-47.

CHAPTER 5

Predictors of Perceived Health Care Quality for Registered Nurses During and Following Health Care Reform

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Abstract

Registered nurses' (RNs) perceptions of organizational culture factors, trust in employer, and perceived health care quality during (N = 222) and five years (N = 343) after major organizational reform in the acute care setting of one Canadian province were investigated, and an exploratory model linking aspects of culture, trust, and quality was tested. For both time periods, most variable scores were in the low range and depicted moderately positive intercorrelations. Support for the proposed model was mixed. Select culture variables predicted health care quality at both time periods; but trust emerged as a significant predictor in 2000 only. The findings support the negative impact of system transformation on RNs and the link between culture and health care quality.

The Canadian health care system underwent extensive transformation including restructuring, downsizing, and re-engineering of services over the course of the 1990s in response to escalating health care costs and decreasing fiscal resources. Re-engineering and restructuring within the acute care sector consisted of major changes to the structure and processes of care (reducing labour costs, changing skill-mix, cross-training staff, shortening length of stay, and introducing client-focus care through multidisciplinary teams). Downsizing initiatives involved reducing the size of the nursing workforce and managerial layers and number of management personnel. These reform measures were implemented despite the absence of definitive empirical evidence confirming their usefulness.¹⁻²

Health system reform in Newfoundland and Labrador (NL), Canada began with regionalization of health boards between 1995 and 1997. Acute and long-term care was integrated in all regions except St. John's, the major tertiary care centre for the province. Management and support personnel numbers were reduced by 40% to 50%, and a functionally oriented system with multidisciplinary teams replaced the separate administration of facilities in 5 of the 6 regions. The St. John's region, the largest employer of nurses, was subjected to the most pervasive reform with closure and merger of hospitals/facilities, integration of clinical services under program-based management, altered managerial roles and responsibilities, dislocation of about 50% of nursing staff, and use of a professional practice model to facilitate decentralized, collaborative decision-making.³

The primary objective of reform was to induce greater productivity and efficiency at a reduced cost while maintaining optimal quality of care. There is an extensive literature base on the multidimensional impact of this initiative. One focus that has received less attention than others is the repercussions for the quality of nursing care. Of particular importance is how registered nurses (RNs), the largest group of providers in acute care settings, perceive their ability to deliver quality care in transformed environments. It is also important to identify those factors present in the work environment that shape nurse perceptions of health care quality.

The focus of the current study was on acute care RNs' perceptions of organizational culture (emotional climate, practice issues and collaborative relations), attitude (trust in employer) and health care quality (safety, standards and quality) at two points in time (i.e., during and following system reform). The primary purpose was to test an exploratory model linking aspects of organizational culture and trust in employer to perceived health care quality. The Conceptual Model of Behavioral Intentions (CMBI) was developed to highlight possible linkages between variables of interest (Fig. 1). The CMBI hypothesizes that significant positive correlations exist between aspects of organizational culture, trust in employer, and perceived health care quality. Secondly, organizational culture and trust will be significant independent predictors of perceived health care quality. Third, the predictive power of organizational culture will be mediated by trust.

Team work, collaborative relations, leadership, quality of work life, and communication/information are common attributes of culture/climate considered important for creating conducive work environments⁴⁻⁵, positive provider outcomes, quality patient care and optimal health outcomes.^{4,6-7} Research findings support the predominately negative impact of system reform on nurse ratings of the work environment.^{1, 8-17}

Important aspects of the social and psychological dynamics of the workplace are also reflected in trust (psychological contracts formed during social exchanges between employers and employees).¹⁸ Increasing attention is being given to the conduciveness of restructured health care environments for maintaining trustful relations between nursing staff and their employers.^{9,14-15,19-20} In a meta-analysis of research on trust in leadership and its antecedents, Dirks and Ferrin²¹ found that more positive perceptions of leadership behaviours and practices, organizational support, participatory style decision-making, justice and fairness and leadership style were associated with increased trust in leadership.

For the most part, the empirical evidence suggests that RNs' are dissatisfied with the quality of nursing care in the aftermath of system restructuring.^{1,11-16,22-27} However, the research base is less insightful on factors responsible for those perceptions. An extensive review of the literature revealed several research studies that explored the linkages between RNs' perceptions of health care quality and work environment factors (autonomy, collaborative relations, communication, support, staffing levels, care delivery models),^{10-12, 14-15, 22-23,26,28-31} and trust in employer¹⁴⁻¹⁵.

Only a few research studies focusing on perceived quality of care were predictive in nature. Some authors tested various conceptualizations that linked work environment factors (structure and process) to perceived quality with regression modeling^{12,22-23,27,30-32} or causal modeling¹⁴. In their study, Laschinger, Shamian et al.¹⁴ depict a multidimensional, linear process incorporating organizational characteristics (autonomy, control, and collaboration), intervening variables (trust and emotional exhaustion) and outcome (work satisfaction, perceived quality of care, and perceived quality of unit). Study's findings supported the hypotheses that higher degrees of autonomy, greater control over practice and more positive nurse-physician collaboration are associated with higher levels of trust in management and lower levels of burnout which leads to more positive perceptions of the quality of care.

Laschinger, Shamian, et al.'s¹⁴ model is somewhat reflective of the proposed model in the current study; however, there are a number of differences. Similar to Laschinger, Shamian et al.¹⁴ trust is considered to be a mediator of perceived health care quality. Laschinger, Shamian, et al.'s¹⁴ model focuses on a multidimensional, linear process whereas, in the current study it is hypothesized that organizational culture factors (emotional climate, practice issues, collaborative relations) exert independent and interactive effects on intermediate outcome (trust in employer) and outcome (perceived health care quality). The intermediate outcome (trust in employer) exerts a direct effect on outcome, and mediates the effects of organizational culture factors. Although a link

between more positive perceptions of culture, greater trust, and greater perceived health care quality may appear reasonable, exploratory testing of the model is essential.

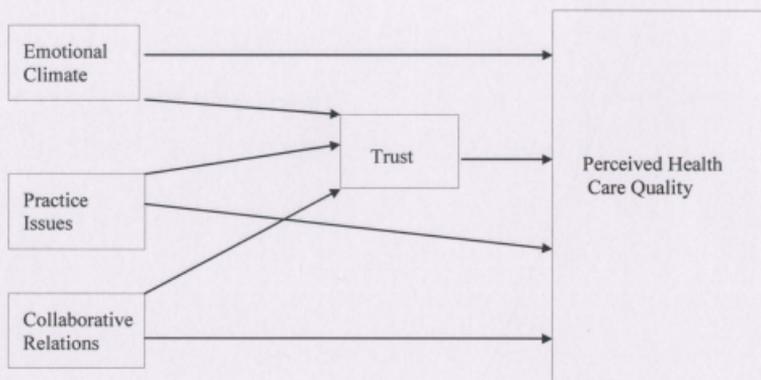


FIGURE 5.1

Proposed Model Linking Aspects of Organizational Culture, Trust, and Perceived Health Care Quality

The following hypotheses were tested in the current study:

1. Significant positive correlations exist between aspects of organizational culture (emotional climate, practice issues, collaborative relations), trust in employer, and perceived health care quality.
2. Registered nurses' perceptions of organizational culture (emotional climate, practice issues and collaborative relations) and trust will be significant independent predictors of perceived health care quality.
3. The predictive power of climate, practice-related issues and collaborative relations for perceived health care quality will be mediated by trust.

Methods

The data were obtained as part of a program of research approved by the Human Investigation Committee of the Faculty of Medicine, Memorial University of Newfoundland. The program of research examined the implications of reform for NL acute care institutions.³³ Descriptive study findings with other samples of RNs have been reported elsewhere.^{15,25,34} The analysis used in the current study moved from the descriptive to the inferential stage and is based on data from a sample selected from the entire accessible population of nurses after major organizational reform (2005) and a randomly selected sample of registered nurses chosen during the reform process (2000).

Sample selection

In 2000, a proportional stratified random sample of 654 was selected from the total accessible population of registered nurses employed in the acute care setting in the province of Newfoundland and Labrador, Canada ($N = 3,583$). The sample did not differ significantly from the total population based on age, education, and employment status (i.e., full-time versus part-time). In 2005, the NL provincial nursing association generated an updated list of RNs working in acute care settings ($N = 3890$) by matching region. The accessible population ($n = 1,173$) was restricted, due to privacy regulations, to those willing to participate in health services research. Given normally low response rates, surveys were mailed to the home addresses of the entire accessible population, and reminder letters sent two weeks later.

Instruments

The Employee Attitude Survey (EAS) was used to collect standardized demographic/work related data (years of work experience, current position tenure, education, employment status, geographic region, sex and age in years). In addition, data was collected on select organizational culture factors (emotional climate, practice-related issues and collaborative relations), health care quality (i.e., quality of care, safety issues, and standards of care), and provider attitudes (trust in employer).

Two subscales of the Revised Impact of Health Care Reform Scale (RIHCRS) consisted of 11 items examining the emotional climate (e.g., management and peer support, open

communication, constructive organizational climate, etc.) and practice-related issues (e.g., control/empowerment, input into decision-making, etc.). RIHCRS items are rated from 1 to 6, with higher scores indicating more positive perceptions of the emotional climate and practice issues. The RIHCRS is a modified version of the Impact of Health Care Reform Scale used in a survey of RNs.³⁵ Both versions had good construct validity (factor analysis) and fairly high internal consistency. Cronbach's alpha coefficients have been reported for the climate (.71 and .80), and practice issues (.75 and .79) in samples of health care providers.³⁴ The total health care quality scale consisted of 13 items from three subscales of the RIHCRS. The total scale examined perceptions of quality of care, standards of care, and safety concerns. The items are rated from 1 to 6, with higher scores indicating more positive perceptions of health care quality. Cronbach's alpha coefficients have been reported for the quality of care (.71 and .80), standards of care (.75 and .79) and safety concerns (.88 and .88) scales in samples of health care providers.²⁵ In the current study, factor analysis confirmed the feasibility of combining the quality of care, standards of care and safety issues scales to generate the perceived health care quality scale. Internal consistency of the scale in the current study was .85 and .84.

The 5-item Collaborative Relations (CR) scale assessed satisfaction with managerial and interdisciplinary relations following restructuring. The CR scale developed by the researchers had good construct validity (i.e., a one factor solution and strong internal consistency). Cronbach's alpha coefficients have been reported for collaborative relations (.88 and .88) scales in samples of health care providers.³⁴

The 4-item Psychological Contract Violation scale assessed trust in employers.³⁶ Items are rated from 1 to 5, with higher scores indicative of less perceived violations (higher levels of trust). Cronbach's alpha has been reported to be 0.75 and 0.75.³⁴

Analysis

Data analyses were performed with the Statistical Package for the Social Sciences (SPSS), version 11.5 and the Analysis of Moment Structures statistical package, version 5.0. Descriptive statistics examined personal characteristics and distribution of sub-scale scores. Chi-square and t-tests were used to compare groups. Independent samples *t* tests were used to determine differences in organizational culture, work-related attitudes and outcome between 2000 and 2005. Analysis of variance tests were used to determine the impact of personal characteristics on scale scores at each time period, and the post-hoc Scheffé test to investigate pair-wise differences. Evaluation of internal consistency and intercorrelations was based on Cronbach's alpha and bivariate correlations, respectively. Hierarchical regression analysis was used to identify the best predictors (determinants and intermediate outcome) of outcome (health care quality). Only independent variables significantly correlated with health care quality were entered into the regression equation. Multicollinearity among independent variables was examined, but none of the variables was very strongly associated with any other. Theoretical models were tested using path analysis. Preliminary analysis indicated that the problem with missing data was random and not severe resulting in the elimination of 18 cases (8.1%) in 2000 and 30 cases (8%)

in 2005. As recommended by Kline³⁷ a minimum of four criteria was employed to evaluate model fit - Chi-square (χ^2), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA).

Results

Response rates and sample description

Of the total surveys mailed out in 2000, 223 were returned (34.1% response rate). Eighteen (8.1%) cases with incomplete data were eliminated, leaving a final sample of 205. In 2005, although 458 surveys were returned (39% response rate), 85 managers/nursing faculty and 30 incomplete surveys were excluded, leaving a final sample of 343.

Table 5.1 summarizes the demographic characteristics of RNs employed in the acute care setting for both survey years. The majority of respondents were diploma prepared and in current positions for 5 or more years, had 10 or more years of nursing experience and worked full-time. The average age in 2000 and 2005 was 38.3 and 37.4 years, respectively. Although the majority of respondents worked in acute care facilities in regions outside St. John's in 2000, the sample was equally divided between St. John's and other regions in 2005. The education level difference was expected due to the provincial nursing association's requirement of a Bachelor of Nursing for entry-to-practice by the year 2000. The sample of respondents following restructuring was

comprised of a greater number of nurses with ≤ 4 years of total work experience. This was most likely attributable to the government addressing nurses' workload issues by investing \$44 million dollars over 5 years to create 325 new permanent nursing positions ("Province acting," 1999).³⁸ There were no significant differences between the samples based on years in current position, employment status or age.

Table 5.1 Personal characteristics of registered nurses working in direct care in 2000 and 2005.

Characteristic	2000 (n = 222)	2005 (n = 343)
Education*** (n, %)		
Diploma	191 (86.0)	225 (60.3)
^a BN or higher	31 (14.0)	148 (39.7)
Region* (n, %)		
St. John's	90 (40.9)	190 (50.9)
Outside Regions	130 (59.1)	183 (49.1)
Employment Status (n, %)		
Full-time	170 (76.6)	262 (70.2)
Part-time	35 (15.8)	68 (18.2)
Casual	17 (7.7)	43 (11.5)
Nursing Experience ** (n, %)		
≤ 4 years	22 (9.9)	76 (20.4)
5 - 9 years	36 (16.2)	52 (13.9)
10 -19 years	92 (41.4)	117 (31.4)
≥ 20 years	72 (32.4)	128 (34.3)
Years in Current Position* (n, %)		
≤ 2 year	46 (20.7)	94 (25.2)
3 - 4 years	34 (15.30)	62 (16.6)
5 - 9 years	62 (27.9)	108 (29.0)
≥ 10 years	80 (36.0)	109 (29.2)
Age in years [mean (SD)]	38.3 (8.1)	37.4 (9.4)

Note. Percentages were calculated on the basis of valid responses.

^aBN = Bachelor of Nursing;

* $p < .05$. ** $p < .01$. *** $p < .001$.

Descriptive statistics and scale reliabilities

Descriptive data on predictor and outcome variables for 2000 and 2005 are presented in Table 5.2. For both study periods, RNs believed that restructuring negatively impacted the organizational culture (emotional climate, practice-related issues, and collaborative issues), were distrustful of employers' intentions to fulfill commitments made to them upon hiring, and viewed health care quality in a negative light. Improvement in scores was observed over time for all scales including organizational culture, trust in current employer, and perceived health care quality ($p < .001$).

Table 5.2 Number of Items, Ranges, Midpoint of Scales, Means, Standard Deviations of Organizational Culture Variables, Trust in Employer, and Health Care Quality in 2000 and 2005

Subscales	Number of items	Range	Midpoint of scale	2000 ^a M (SD) ^e	2005 ^b M (SD) ^e
Organizational Culture					
Emotional Climate ^c	7	1 - 6	3.5	2.48 (.97)	2.84*** (.97)
Practice Issues ^c	4	1 - 6	3.5	2.85 (1.12)	3.24*** (1.15)
Collaborative relations ^c	5	1 - 6	3.5	2.72 (1.18)	3.43*** (1.08)
Trust in Employer ^d	4	1 - 5	3	2.59 (.59)	2.94*** (.56)
Total Health Care Quality			3.5	2.85 (.82)	3.10*** (.79)
Quality of Care ^c	4	1 - 6	3.5	2.55 (.93)	2.79** (.87)
Safety Concerns ^c	5	1 - 6	3.5	3.14 (.89)	3.39** (.90)
Standards of Care ^c	4	1 - 6	3.5	2.81 (1.04)	3.06** (.99)

^aRestructuring Project 2000 (n = 222). ^bRestructuring Project 2005 (n = 343).

^c Higher scores indicate more positive perceptions of the emotional climate, practice issues, and health care quality and greater satisfaction. ^dHigher scores indicate less

perceived violation of implied contracts. ^eWeighted mean and standard deviation scores are reported.

** p < 0.01; *** p < 0.001.

The internal consistency of the RIHCRS sub-scales ranged from .75 to .89 in 2000 and .76 to .86 in 2005 (see Table 5.3). Cronbach alpha values for the trust in employer scale in 2000 and 2005 were .78 and .81, respectively (Table 5.3).

The first step in hypotheses testing was to determine the intercorrelations among major variables and the effects of personal characteristics. The correlation matrix is presented in Table 5.3. The low to moderate correlations of organizational culture variables with intermediate and outcome variables at both time periods suggest that more positive perceptions of the emotional climate, practice issues and collaborative relations are related to greater trust, and more positive perceptions of health care quality. As well, moderate to strong intercorrelations were observed between higher levels of trust and more positive perceptions of health care quality. However, the magnitude of the observed association between trust in employer and perceived health care quality was weaker in 2005 ($r = .39, p < .001$) than 2000 ($r = .52, p < .001$). Based on similar findings for both time periods, there was ample evidence for the potential usefulness of organizational culture and the intervening attitude trust as predictors of perceived health care quality. In contrast, most personal characteristics exerted little or no influence on intermediate and outcome variables (data not shown). The decision was therefore made to exclude them from further analysis.

Table 5.3 Correlation matrix of predictors and outcome variables for the 2000 and 2005 survey years

Variable	1	2	3	4	5	
1. Emotional Climate						
2000	1.00	(.80)				
2005	1.00	(.82)				
2. Practice-Issues						
2000	.46***	1.00	(.75)			
2005	.58***	1.00	(.76)			
3. Collaboration						
2000	.53***	.65***	1.00	(.89)		
2005	.60***	.64***	1.00	(.86)		
4. Trust in Employer						
2000	.59***	.41***	.46***	1.00	(.78)	
2005	.50***	.35***	.49***	1.00	(.70)	
5. †Total Health Care Quality						
2000	.65***	.44***	.52***	.52***	1.00	(.85)
2005	.62***	.48***	.50***	.39***	1.00	(.84)

Note. Cronbach's alpha was used to measure internal consistency of scales and is reported in parentheses.

†Total Health Care Quality Scale.

*** $p < .001$.

Prediction of perceived health care quality

During regression analysis variables were entered according to their position in the model (organizational culture variables first, intermediate outcome second). The hypothesized model for perceived health care quality was partially supported. For 2000, at the first step of the analysis emotional climate and collaborative relations entered the model. At the second step, the mediating effects of trust were minimal. Emotional climate, collaborative relations and trust combined to explain 50% of the variance. Slightly different results were obtained in 2005. At the first step, emotional climate, practice issues and collaborative relations entered the model. At the second step, the mediating effects of trust were minimal, but it failed to enter the equation. Climate, practice issues and collaborative issues combined to explain 42% of the variance (data not shown).

Model Testing

The proposed conceptual model was tested with the 2000 and 2005 samples using path analysis. The proposed model was saturated (emotional climate, practice-related issues, collaborative relations had paths to trust and perceived health care quality and trust had a path to health care quality), but could be used to test the critical ratios for each path. In both samples of nurses, most critical ratios were significant except the path from practice to trust and practice to perceived health care quality in 2000 and the paths from practice to trust and trust to perceived health care quality in 2005. The paths were constrained to zero in the revised model for each respective sample and were re-evaluated.

Model Fit

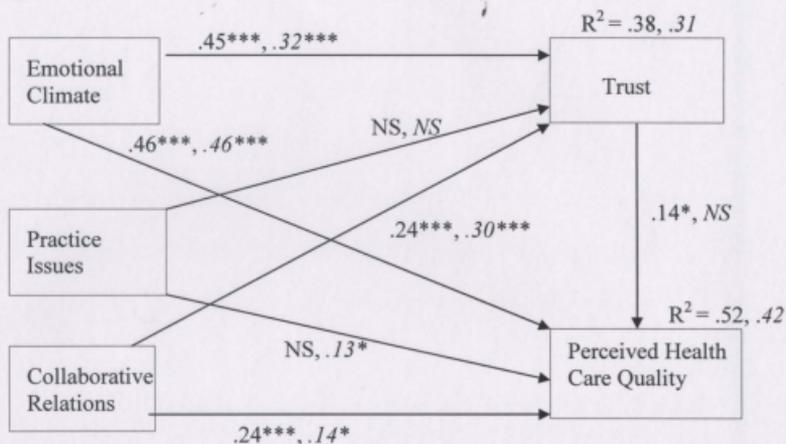
When the non-significant paths from practice to trust and practice to perceived health care quality were constrained to zero in the 2000 sample the final model fit the data ($\chi^2 = 2.03$, $df = 2$, $CFI = 1.00$, $IFI = 1.00$, $TLI = 1.00$, $RMSEA = .008$) with all paths highly significant. Emotional climate ($\beta = .45$) and collaborative relations ($\beta = .24$) had a direct effect on trust. Emotional climate had a direct effect on perceived health care quality ($\beta = .46$), and an indirect effect through trust ($\beta = .06$). The findings also supported the direct effects of collaborative relations ($\beta = .24$) on perceived health care quality, and its indirect effect through trust ($\beta = .03$). Positive perceptions of the emotional climate and collaborative relations were associated with greater levels of trust in the employer and higher levels of perceived health care quality. Based on the magnitude of their *total effects*, the determinants of health care quality may be ranked as follows: emotional climate ($\beta = .53$), collaborative relations ($\beta = .28$), and trust ($\beta = .14$) (see Table 5.4). The standardized path coefficients for the final model are presented in Figure 5.2. The amount of explained variance in trust and perceived health care quality was 38% and 52%, respectively.

In 2005, the non-significant paths from practice to trust and trust to perceived health care quality were constrained to zero, with the revised model fitting the data ($\chi^2 = 2.67$, $df = 2$, $CFI = .999$, $IFI = .999$, $TLI = .999$, $RMSEA = .031$) and all paths highly significant. Emotional climate ($\beta = .32$) and collaborative relations ($\beta = .24$) had a direct effect on trust. In addition, climate ($\beta = .46$), practice-related issues ($\beta = .13$) and collaborative

relations ($\beta = .14$) had direct effects on perceived health care quality. Positive perceptions of the emotional climate, practice-related issues and collaborative relations were associated with greater levels of trust in employer and higher levels of perceived health care quality. Based on the magnitude of their *total effects*, the determinants of health care quality may be ranked as follows: emotional climate (.46), collaborative relations ($\beta = .14$), and practice-related issues ($\beta = .13$) (Table 5.4). The standardized path coefficients for the final model are presented in Figure 5.2. The amount of explained variance in trust and perceived health care quality was 31% and 42%, respectively.

Table 5.4 Summary of Total, Direct, and Indirect Effects of Reduced Model (standardized path coefficients) for 2000 and 2005 Survey Years

	2000		2005	
	Trust	Health Care Quality	Trust	Health Care Quality
Standardized Total Effects - Estimates				
Emotional Climate	.45	.53	.33	.46
Practice Issues	-	-	-	.13
Collaborative Relations	.24	.28	.30	.14
Trust	-	.14	-	-
Standardized Direct Effects - Estimates				
Emotional Climate	.45	.46	.33	.46
Practice Issues	-	-	-	.13
Collaborative Relations	.24	.24	.30	.14
Trust	-	.14	-	-
Standardized Indirect Effects - Estimates				
Emotional Climate	-	.06	-	-
Practice Issues	-	-	-	-
Collaborative Relations	-	.03	-	-
Trust	-	-	-	-



2000 sample
 $\chi^2 = 2.03$, $df = 2$, $p = .363$
 $R^2 = .52$
IFI = 1.00
CFI = 1.00
TLI = 1.00
RMSEA = .008

2005 sample
 $\chi^2 = 2.67$, $df = 2$, $p = .263$
 $R^2 = .42$
IFI = .999
CFI = .999
TLI = .995
RMSEA = .031

Note: df , degrees of freedom; CFI, Comparative Fit Index; IFI, Incremental Fit Index; R^2 , percent explained variance; RMSEA, Root Mean Square of Approximation; TFI, Tucker-Lewis Index; (TLI); χ^2 , Chi-square. Standardized path coefficients and their significance tests for the Reduced path model are presented. * $p < .05$, *** $p < .001$. *2000 sample on the left; 2005 sample on the right in italics.

Figure 5.2

Reduced Model of Organizational Culture Factors, Trust and Perceived Health Care Quality

Discussion

The restructuring of acute care hospitals in one Canadian province provided the opportunity to investigate the impact on registered nurses (RNs) perceptions of organizational culture factors (emotional climate, practice-related issues and collaborative relations), trust in employer, and perceived health care quality during and ten years after initiation of extensive system transformation in the acute care hospital sector. Another aim of the study was to test a theoretical model linking aspects of organizational culture and work-related attitudes to perceived health care quality. RNs employed in acute care settings continue to experience negative effects following the transformation, despite significant improvements in all study variable scores over time.

It is discouraging to see that nurses perceptions of the emotional climate, practice issues and health care quality remain at the low levels observed at the start of the system transformation in 1995.¹⁵ It is anticipated that the revitalization of the nursing workforce in NL will be a major challenge given that further system changes were implemented in April 2006 involving retraction to 4 regional integrated authorities from 14 regional health boards. The government departments that invoke extensive transformation, as well as regional integrated health authorities responsible for carrying out government directives, must become more cognizant of the potential for the long term negative impact on all health care providers, and have concomitant policies to buffer that impact.

The results of the correlation analysis provide partial support for the hypothesized relationships. All aspects of organizational culture (emotional climate, practice-related issues and collaborative relations) were positively associated with trust in current employer and perceived health care quality. The findings corroborate the positive associations observed between comparable and different culture variables and trust in other studies of nurses.^{14,19-20,39} Study findings also support the positive associations observed between similar and disparate culture variables and perceived health care quality in other studies.^{10-12,14-15,22-23,26,28-31}

The current study's findings also support the significant correlations among trust and its relationship to perceptions of health care quality. Laschinger, Shamian, et al.¹⁴ reported that RNs who had higher levels of trust in management were also more likely to have more positive perceptions of health care quality.

The current study's findings also partially supported the theoretical model linking organizational culture and work-related attitudes to perceived health care quality. More positive perceptions of the emotional climate and collaborative relations were directly linked with more positive perceptions of health care quality during and following extensive transformation of the health care system. These findings highlight the importance of creating more positive work climates (challenging, motivating and supportive) and collaborative relations with managers and other professional groups. Similar to the current study's findings, Arnetz²³ reported that autonomy, influence over

daily decisions, participatory management, skill development had a direct positive impact on perceived quality of care. The findings of Arnetz²³ and the current study highlight the importance of targeting these areas with management strategies and interventions aimed at improving perceptions of quality of care.

With regard to the proposed mediating role of trust between organizational culture factors and perceived health care quality, the current study provides minimal and inconsistent support for trust. The lack of predictive power for trust in 2005 may be related to the significant decline in the magnitude of the relationship between trust and perceived health care quality and the slight increase in the strength of the association between practice issues and quality. The switch between trust and practice-related issues in 2005 may also be explained by the fact that major system reforms had already taken place five years previously. It may also be due to inadequate sensitivity and specificity of the scales used to measure perceived health care quality or the sample sizes. Despite the inconsistent role of trust as a predictor of perceived health care quality, it is an important factor to consider in a system that is undergoing continuous transformation. Only one study was identified in the literature directly linking trust to perceived health care quality.¹⁴ Similar to the current study, Laschinger et al.¹⁴ found that trust was a significant mediator between organizational characteristics (autonomy, control and collaboration) and nurse assessments of quality care. In contrast to Laschinger et al.'s¹⁴ study, the current study used two cross-sectional random samples of registered nurses at two intervals of the restructuring process (before, during and following).

Limitations

The study findings must be viewed with caution given the cross-sectional nature of the study design, which does not permit inference of causality among the constructs.

Generalization of the findings may be limited due to: (1) the study population consisting of RNs who indicated a willingness to participate in research, (2) the relatively low response rate, and (3) the use of self-reported data. In addition, there is a possibility of clustering of effects within hospitals and units, which could impact on the validity of the conclusions. Although it is possible to test for the clustering effect using causal modeling techniques, we did not collect unit/hospital level data.

Conclusions

This study was designed to examine acute care registered nurses' perceptions of organizational culture (emotional climate, practice issues and collaborative relations), health care quality (safety, standards and quality) and attitude (trust in employer) at two points in time (i.e., during and following system reform) and to test a model linking aspects of culture and trust in employer to perceived health care quality. This study provides empirical evidence for the importance of organizational culture factors on work attitude and perceptions of health care quality and its findings offer partial support for the hypothesized relationships specified in the conceptual model. The preliminary findings of this exploratory model suggest that further research in this area is required to gain a better understanding of the relationships between and among trust and other work-related and organizational culture variables.

The greatest asset of any organization are the employees, a thought worth remembering at a time when the health care system is faced with ongoing health care provider recruitment and retention issues. This study suggests that there is an urgency for managers and policy makers to develop and implement supportive and nurturing strategies that will enhance the organizational culture (emotional climate, collaborative relations), which should result in more positive perceptions of health care quality.

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References

1. Aiken LH, Clarke SP, Sloane DM. Hospital restructuring: does it adversely affect care and outcomes? *Journal of Nursing Administration* 2000; **30** (10):457-465.
2. Shamian J, Lightstone EL. Hospital restructuring initiatives in Canada. *Medical Care* 1997; **35**(suppl 10): OS62-OS69.
3. Twells L, Doyle M, Gregory D, Barrett B, Parfrey, P. Acute care restructuring in Newfoundland and Labrador; the history and impact on expenditures. *Journal of Health Services Research and Policy* 2005; **10** (Suppl 2): 4-11.
4. Gershon RRM, Stone PW, Bakken S, Larson E. Measurement of organizational culture and climate in healthcare. *Journal of Nursing Administration* 2004; **34**(1): 33-40.
5. Scott T, Mannion R, Davies H, Marshall, M. The quantitative measurement of organizational culture in health care: A review of available instruments. *Health Services Research* 2003; **38** (3): 923-945.
6. Lowe GS, Schellenberg G. What's a good job? The importance of employment relationships. Canadian Policy Research Networks Inc. Study No. W/05. Ottawa, ON: Canadian Policy Research Networks Inc, 2001.
7. Snow JL. Enhancing work climate to improve performance and retain valued employees. *Journal of Nursing Administration* 2002; **32** (7/8): 393-397.

8. Aiken LH, Clarke SP, Sloane DM, Sochalski JA, Busse R, Clarke H, et al. Nurses' reports on hospital care in five countries. *Health Affairs (Millwood)* 2001;**20**: 43-53.
9. Armstrong-Stassen M. Dimensions of control and nurses' reactions to hospital amalgamation. *International Journal of Sociology and Social Policy* 2003; **23**(8/9): 104-128.
10. Burke RJ. Restructuring stressors and perceived hospital effectiveness. *Canadian Journal of Nursing Leadership* 2001; **14** (1): 21-26.
11. Burke RJ. Nursing staff attitudes following restructuring: The role of perceived organizational support, restructuring process and stressors. *International Journal of Sociology and Social Policy* 2003; **23**(8/9): 129-157.
12. Burke RJ. Hospital restructuring stressors, support, and nurse staff perceptions of unit functioning. *The Health Care Manager* 2005; **24** (1): 21-28.
13. Cummings G, Estabrooks CA. The effects of hospital restructuring that included layoffs on individual nurses who remained employed: A systematic review of impact. *International Journal of Sociology and Social Policy* 2003; **23** (8/9): 8-53.
14. Laschinger HKS, Shamian J, Thomson D. Impact of magnet hospital characteristics on nurses' perceptions of trust, burnout, quality of care, and work satisfaction. *Nursing Economic\$* 2001; **19**: 209-219.
15. Way CY, Gregory DM, Baker N, Lefort S, Barrett BJ, Parfrey PS. Attitudes and perceptions of RNs during and shortly after acute care restructuring in

- Newfoundland and Labrador. *Journal of Health Services Research and Policy* 2005; **10** (Suppl 2): 22-30.
16. Woodward CA, Shannon HS, Cunningham C, McIntosh J, Lendrum B, Rosenbloom D, et al. The impact of re-engineering and other cost reduction strategies on the staff of a large teaching hospital: A longitudinal study. *Medical Care* 1999; **37**: 556-569.
17. Woodward C A, Shannon HS, Lendrum B, Brown J, McIntosh J, Cunningham C. Predictors of job stress and satisfaction among hospital workers during reengineering: Differences by extent of supervisory responsibilities. *Healthcare Management Forum* 2000; **13** (1): 29-35.
18. Koehoorn M, Lowe GS, Rondeau KV, Schellenberg G, Wagar TH. Creating high-quality health care workplaces. A background paper for Canadian Policy Research Networks' National Roundtable. Ottawa, ON: Canadian Policy Networks Inc. (CPRN) (CPRN Discussion paper No. W/14), 2002.
19. Laschinger HKS, Finegan J, Shamian J, Casier, S. Organizational trust and empowerment in restructured healthcare settings. Effects on staff nurse commitment. *Journal of Nursing Administration* 2000; **30**(9): 413-425.
20. Laschinger HKS, Finegan J, Shamian J. The impact of workplace empowerment, organizational trust on staff nurses' work satisfaction and organizational commitment. *Healthcare Management Review* 2001; **26**: 7-23.

21. Dirks KT, Ferrin D L. Trust in leadership: Meta-analytic findings and implications for research and practice. *Journal of Applied Psychology* 2002; **87**(4): 611-628.
22. Aiken LH, Clarke SP, Sloane DM. Hospital staffing, organization, and quality of care: cross-national findings. *International Journal of Quality Health Care* 2002; **14**: 5-13.
23. Arnetz BB. Staff perception of the impact of health care transformation on quality of care. *International Journal of Quality Health Care* 1999; **11**: 345-351.
24. Baumann A, Giovannetti P, O'Brien-Pallas L, Mallette C, Deber R, Blythe J, et al. Healthcare restructuring: The impact of job change. *Canadian Journal of Nursing Leadership* 2001; **14**(1): 14-20.
25. Gregory DM, Way CY, Barrett BJ, Parfrey PS. Health care quality from the perspective of health care providers and patients shortly after acute care restructuring in Newfoundland and Labrador. *Journal of Health Services Research and Policy* 2005; **10** (Suppl 2): 48-57.
26. McGillis Hall L. Nursing staff mix models and outcomes. *Journal of Advanced Nursing* 2003; **44** (2): 217-226.
27. Shindul-Rothschild J, Long-Middleton E, Berry D. 10 keys to quality care. *American Journal of Nursing* 1997; **97** (11): 35-43.
28. O'Brien-Pallas L, Thomson D, McGillis Hall L, Pink G, Kerr M, Wang S, et al. *Evidence-based Standards for Measuring Nurse Staffing and*

Performance. Ottawa, On: Canadian Health Services Research Foundation. September 2004. Accessed www.chsrf.ca.

29. McGillis Hall L, Doran DI, Baker GR, Pink GH, Sidani S, O'Brien-Pallas L, et al. *A study of the impact of nursing staff mix models and organizational change strategies on patient, system and nurse outcomes*. A summary report of the nursing staff mix outcome study submitted to the Canadian Health Services Research Foundation, 2001.
30. McGillis Hall L, Doran D. Nurse staffing, care delivery model, and patient care quality. *Journal of Nursing Care Quality* 2004;19: 27-33.
31. Sochalski J. Is more better? The relationship between nurse staffing and the quality of nursing care in hospitals. *Medical Care* 2004; 42 (Suppl 2): II-68-II-73.
32. Aiken LH, Clarke SP, Sloane DM, Sochalski J, Silber JH. Hospital nurse staffing and patient mortality, nurse burnout and job dissatisfaction. *JAMA* 2002; 288:1987-1993.
33. Parfrey P, Barrett B, Gregory D. Restructuring acute care hospitals in Newfoundland and Labrador. *Journal of Health Services Research and Policy* 2005; 10 (Suppl 2): 1-3.
34. Way CY, Gregory DM, Doyle M, Twells L, Barrett BJ, Parfrey PS. Health care provider outcomes during and shortly after acute care restructuring in Newfoundland and Labrador. *Journal of Health Services Research and Policy* 2005;10 (Suppl 2): 58-67.

35. Way C. *Nurses' perceptions of health care reforms and their impact on the quality of health care and nursing practice*. St. John's, NF: The ARNN, 1995.
36. Turnley WH, Feldman DC. The impact of psychological contract violations on exit, voice, loyalty, and neglect. *Human Relations* 1999; **52** (7): 895-922.
37. Kline RB. *Principles and practices of structural equation modeling*. New York: Guilford Press, 1998.
38. Province acting: Government put over \$14 million into nursing and support staff since Spring 1999. (1999, March 29). Department of Health and Community Services, Government of Newfoundland and Labrador . Available on-line at <http://www.releases.gov.nl.ca/releases/1999/health/0510n05.htm>. Accessed 1 November 2006.
39. Laschinger HKS, Finegan J. Using empowerment to build trust and respect in the workplace: A strategy for addressing the nursing shortage. *Nursing Economics* 2005; **23** (1): 6-13.

CHAPTER 6

Predictors of Registered Nurses' Organizational Commitment and Intent to Stay

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Abstract

Background: Health care reform has significantly altered employment relations.

Research findings suggest that the presence or absence of supportive work environments helps explain the differences observed in employee attitudes and turnover intentions.

Purposes: The purposes of this study were to examine front-line registered nurses' (RN's) perceptions of organizational culture and attitudes and behaviors and test a model linking culture to outcome (organizational commitment and intent to stay).

Methodology: A nonexperimental predictive survey design was used to test the model in a sample (N = 343) of acute care registered nurses RNs employed in one Canadian province. Data were collected with the following scales: Emotional Climate, Practice Issues, Collaborative Relations, Psychological Contract Violation, General Job Satisfaction, Organizational Commitment Questionnaire, and Intent to Stay.

Findings: The response rate was 29.4%. Most respondents were middle aged and diploma prepared, had been in current positions for 5 or more years, had 10 or more years of nursing experience and worked full-time. Despite moderate levels of job satisfaction, RNs held negative perceptions of culture (emotional climate, practice-related issues and collaborative relations), trust and commitment, and were unlikely to stay with current employers. Structural equation modeling provided support for the impact of culture, trust, and satisfaction on commitment and partial support for intent to stay, explaining 45 and 31% of the variance, respectively.

Practice Implications: The development and implementation of policies and interventions aimed at creating more supportive work environments, and greater trust in

employers and job satisfaction have merit. The most obvious benefit from such strategic interventions is the potential for improving RNs' organizational commitment and reducing turnover intentions.

Key words: intent to stay, model testing, nurses, organizational commitment.

Introduction

Extensive reform of the health care system occurred in all Canadian provinces in the 1990s without adequate empirical evidence attesting to their effectiveness.¹⁻² Over the past decade several studies have addressed the negative repercussions experienced by registered nurses (RNs), the largest provider group, in terms of satisfaction with workplace conditions, health care quality, collaborative relations, the job, organizational commitment, and trust in leadership after extensive reform.^{1,3-9}

What is not clear is how system reform may have altered hypothesized linkages among organizational factors and outcomes. Study findings on a large cross-section of employee groups in Canada indicated that work environment factors (job demands, supportiveness, access to resources) have significant implications for employment relationships (trust, commitment, communication and influence), and that ratings of all of these factors are lowest for health care employees subjected to restructuring, downsizing or job changing.¹⁰

Regionalization of health services occurred in Newfoundland and Labrador (NL), Canada, between 1995 and 1997. Six institutional health boards were created by integrating acute and long-term care in all regions except St. John's, the major tertiary care center for the province. Five of the boards moved from a facilities-based to a functional-based structure with multidisciplinary teams, and one to program-based management. Management and support personnel were reduced by 40 to 50%. The St.

John's region, the largest employer of nurses, was also subjected to closure and merger of hospitals/facilities and dislocation of approximately 50% of nursing staff. It was also one of the few regions to use a professional practice model to facilitate decentralized, collaborative decision-making.

The primary purpose of this study was to determine how frontline RNs working in acute care rate organizational culture, work-related attitudes, and likelihood of staying with current employers after the health system reform in NL. A second purpose was to test a model linking culture (emotional climate, practice issues, and collaborative relations), attitudinal states (trust in employer and job satisfaction) to outcome (organizational commitment and intent to stay).

Conceptual Framework

The Conceptual Model of Behavioral Intentions (CMBI) was developed to highlight possible linkages between variables of interest after system changes. The CMBI was based on an integrated causal model of turnover behavior¹¹ and determinants and consequences of psychological contract violation.¹²⁻¹⁴ Several factors were conjectured to influence behavioral intentions, including determinants (workplace conditions and health care quality), covariates (intermediate outcomes of trust in employer, collaborative relations, job satisfaction, and organizational commitment), and correlates (select personal characteristics). The covariates also serve as mediators buffering the effects of determinants and preceding covariates on outcome.

Although the original model was supported during data analysis, the difficulty was in discerning the predictive capabilities of a large number of determinants and covariates due to multicollinearity problems with hierarchical regression analysis. Upon further appraisal of relevant literature, it was discovered that Mueller, Wallace and Price¹⁵ found empirical support for the conceptual and operational distinctiveness of the attitudinal and behavioural components of commitment. Separation of the affective and behavioural dimensions of commitment was further supported by Meyer, Allen and Topolnytsky.¹⁶ In a review of literature on the current employment relationship, Roehing, Cavanaugh, Moynihan and Boswell¹⁷ reported that empirical evidence suggests that significant changes have occurred and new strategies are required for enhancing important components like organizational commitment (affective and continuance). The authors made special reference to organizational culture, trust in employers, and collaborative relations as key factors requiring greater consideration.

Thus, the decision was made to revise the CMBI and test it with other data sets, including the one used in the current study. The revised model hypothesizes that determinants (organizational culture) exert direct effects on intermediate outcomes (trust in employers and job satisfaction) and outcome (organizational commitment and intent to stay). Intermediate outcomes exert a direct effect on outcome and mediate the effects of culture. Finally, satisfaction mediates the effects of trust on commitment and intent. More

positive perceptions of culture, greater trust, and increased satisfaction generate greater commitment and intent to stay.

There is some theoretical and empirical support in the literature for the hypothesized relationships among study variables. Common attributes of culture (team work, collaborative relations, leadership, quality of work life, communication/information) are considered important for creating conducive work environments,¹⁸⁻¹⁹ positive provider outcomes, quality patient care and optimal health outcomes.^{18,20} In a meta-analytical study, Dirks & Ferrin²¹ found that positive perceptions of leadership behaviours and practices, organizational support, participatory style decision-making, justice, fairness, and leadership style increased trust in leadership. Other meta-analytic studies determined that work environment and job characteristics are strongly associated with job satisfaction.²²⁻²³ and that satisfaction is associated with trust Dirks & Ferrin²¹. Finally, meta-analysis findings also support multiple correlates of commitment, including job and organizational characteristics (job challenge and scope, autonomy, and centralization), group/leader relations and role states (role ambiguity, conflict, and overload) and job satisfaction.²⁴

Several causal models have been proposed to explain how various factors impact nursing turnover.^{11,23,25-27} Despite variant predictive factors most of these models depict a multidimensional, linear process incorporating determinants (job-related and work environment), intervening attitudes (job satisfaction, organizational commitment),

behavioural intentions (intent to stay/leave, etc.), and correlates (i.e., personal characteristics). As well, determinants are conjectured to exert direct effects on attitudes, and indirect effects on turnover intentions via attitudinal states. Trust, not normally a part of the turnover models, has surfaced as an important predictor of satisfaction, commitment and intent to stay.^{4,13-14,21}

In summary, there is increasing research support for the assumption that RNs' perceptions of culture, trust in employer, and job satisfaction impact organizational commitment and intent to stay. However, further multivariate analysis research is needed to identify the most important predictors.

Methods

Design

The data were obtained as part of a program of ethically approved research examining the implications of reform for NL acute care institutions.²⁸ Study findings with other samples of RNs in 2000 and 2002 have been reported elsewhere.⁷⁻⁸ In the current study, a non-experimental predictive survey design was used to test the proposed model.

Sample

In 2005, the provincial nursing association generated an updated list of RNs working in acute care settings (N = 3890) by matching region. Due to privacy regulations, the accessible population (n = 1,173) was restricted to those willing to participate in health

services research. Given normally low response rates, surveys were mailed to the home addresses of the entire accessible population, and reminder letters were sent 2 weeks later. Although 458 surveys were returned, 85 managers/nursing faculty and 30 incomplete surveys (missing data) were excluded, leaving a final sample of 343 and a response rate of 29.4%.

Data Collection Instruments

The Employee Attitude Survey (EAS) was used to collect data on RNs' perceptions of organizational culture (emotional climate, practice-related issues, and collaborative relations), provider attitudes (job satisfaction, trust in employer, and organizational commitment), behavioral intentions (intent to stay), and key demographic variables. A description of the constructs comprising the EAS is presented in Table 6.1.

Organizational culture was defined in terms of satisfaction with the emotional climate of the workplace, practice issues, and collaborative relations. Two subscales of the Revised Impact of Health Care Reform Scale (RIHCRS) and the Collaborative Relations (CR) scale examined organizational culture. Scale items are rated from 1 to 6, with higher scores indicating greater satisfaction. The RIHCRS is a modified version of the Impact of Health Care Reform Scale used in a survey of RNs.²⁹ Both versions had good construct validity (factor analysis) and fairly high internal consistency. The CR scale developed by the researchers had good construct validity (i.e., a one factor solution and strong internal consistency). Good α coefficients have been reported for the climate (.71 and .80),

practice issues (.75 and .79) and collaborative relations (.88 and .88) scales in samples of health care providers.⁸ Subscale reliabilities for the current study were adequate (i.e., .76, .82 and, .86 respectively). Factor analysis confirmed the feasibility of combining the emotional climate, practice issues, and collaborative scales to generate the organizational culture construct. The internal consistency of the scale was .90.

Table 6.1 Description of Constructs of Employee Attitude Survey

Scale	Mean (SD)	No of Items	α	Content
Emotional Climate	2.83 (.97)	7	.82	This scale assessed key aspects of the work environment: job satisfying/challenging, frustration with care, increased demands/stress creates disillusionment, low morale, and unpleasant relations.
Practice Issues	3.24 (1.15)	4	.76	Scale items measured perceived control over practice, access to educational services, and involvement in workplace problem identification and resolution.
Collaborative Relations	3.44 (1.08)	5	.86	This scale assessed satisfaction with the visibility and accessibility of management, communication with management, interdisciplinary approaches to care, and time spent dealing with interdisciplinary conflicts since restructuring.
Psychological Contract Violation	2.94 (.56)	4	.70	This scale assessed how well and how often organizations fulfilled original implied commitments and how well rewards match what was promised or expected.
General Job Satisfaction	4.72 (1.33)	3	.80	Scale items assessed satisfaction with the job itself and type of work and co-worker satisfaction.
Organizational Commitment	4.08 (1.22)	9	.92	Scale items assessed the affective response to and identification with and involvement in the organization.
Intent to Stay	3.37 (.90)	3	.72	Scale items assessed the likelihood of staying with present employers, potential for leaving if another job opportunity surfaced and search efforts for another job.

Note: Weighted mean and *SD* scores are reported, with higher scores reflecting more positive attitudes. Cronbach's α was used to measure internal consistency of scales.

Trust in employer pertains to beliefs about implied agreements between employees and employers. Violations occur when employees perceive that employers have not fulfilled obligations (fair pay, job security, and promotion) in return for hard work and loyalty.¹² Trust in employer was measured with the Psychological Contract Violation scale.¹³ Items are rated from 1 to 5, with higher scores indicating less perceived violations. The internal consistency was reported as .75 and .75.⁸ In the current study, it was .70.

Job satisfaction was conceptualized as an individual's overall affective response to the job. A modified version of the General Job Satisfaction scale³⁰ measured satisfaction. Scale items are ranked from 1 to 7, with higher scores indicating greater satisfaction. The modified scale evidenced good internal consistency (.80 & .83) with health care providers,⁸ similar to the current study (.80).

Commitment, conceptualized as the affective response to and identification with and involvement in the organization, was assessed with the Organizational Commitment Questionnaire.³¹ Items are ranked from 1 to 7, with higher scores indicating greater commitment. Very good internal consistency (.92 and .93) was reported for health care providers,⁸ similar to the current study (.92).

Behavioral intentions were conceptualized as an individual's likelihood of staying with current employers.¹⁴ The Intent to Stay scale was adapted from the Intent to Quit and Job Search Scales.¹³ Items are rated from 1 to 5, with higher scores reflecting greater intent to

stay. The scale had an internal consistency of .76 and .79 with health care providers⁸ but was slightly lower for the current study (.72).

The demographic/work related variables included standardized questions (years of work experience, current position tenure, education, employment status, geographic region, gender, and current age).

Data Analysis

Data analyses were performed with the Statistical Package for the Social Sciences (SPSS), Version 11.5, and the Analysis of Moment Structures statistical package, Version 5.0. Descriptive statistics examined personal characteristics and distribution of sub-scale scores. Evaluation of internal consistency and inter-correlations was based on Cronbach's α and bivariate correlations, respectively. Theoretical models were tested using structural equation modeling techniques. Preliminary analysis indicated that the problem with missing data was random and not severe, resulting in the elimination of 30 cases (8%). As recommended by Kline³² (1998), a minimum of four criteria were employed to evaluate model fit - χ^2 , comparative fit index (CFI), incremental fit index (IFI), Tucker-Lewis Index (TLI), and the root mean square error of approximation (RMSEA).

Results

Descriptive Statistics

Table 6.2 presents the demographic findings. Most respondents were middle aged, diploma prepared and employed in the St. John's region; had been in their current position for 5 or more years; had 10 or more years of nursing experience; and worked full-time. Although comparable to the provincial nursing population on employment status, the sample was younger and more educated.³³

Table 6.2 Personal characteristics of RNs working in direct care in 2005 ($N = 343$)

	n	%
Education		
Diploma	201	58.6
Baccalaureate or higher	142	41.4
Region		
St. John's	177	51.6
Outside regions	166	48.4
Employment status		
Full time	239	69.7
Part time	63	18.4
Casual	41	12.0
Nursing Experience		
≤ 4 years	73	21.3
5 - 9 years	48	14.0
10 -19 years	108	31.5
≥ 20 years	114	33.2
Years in current position		
≤ 2 year	87	25.4
3 - 4 years	58	16.9
5 - 9 years	97	28.3
≥ 10 years	101	29.4
Age, mean (<i>SD</i>), years	37.4 (9.4)	

The score distributions of the study variables are presented in Table 6.1. Weighted means were calculated for each subscale and scale by dividing individual scores by relevant item numbers. Although satisfied with their jobs, most RNs believed that restructuring had negative repercussions for organizational culture, were distrustful of employers' intentions to fulfill commitments made to them upon hiring, had low levels of commitment to their organizations, and were unsure about staying with current employers.

Testing the Model

The first step in hypotheses testing was to generate a correlational matrix for major study variables (Table 6.3) and difference tests to determine the effects of personal characteristics (data not shown). The moderately strong positive inter-correlations among determinants (organizational culture), mediators (trust and satisfaction), and outcome (commitment and intent to stay) suggest that determinants and mediators are useful predictors of outcome. The limited contribution of demographic variables to the causal models resulted in their exclusion.

Table 6.3 Intercorrelations among Organizational Culture, Trust, in Employer Job Satisfaction, Organizational Commitment and Intent to Stay (N = 343)

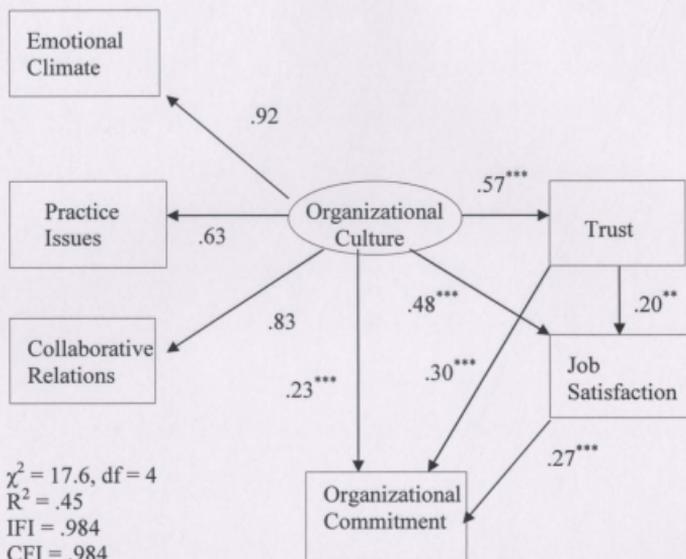
Variable	1	2	3	4	5	6	7	8
1. Emotional Climate	1.00							
2. Practice Issues	.58	1.00						
3. Collaboration	.60	.64	1.00					
4. Total Culture	.88	.83	.85	1.00				
5. Trust†	.50	.35	.48	.52	1.00			
6. Satisfaction	.58	.39	.43	.56	.46	1.00		
7. Commitment	.48	.34	.50	.51	.55	.55	1.00	
8. Intent to stay	.38	.31	.31	.37	.38	.54	.44	1.00

Note: All reported significant levels (two-tailed) are at the $p < .001$ level.

†Total Organizational Culture Scale

The proposed model was tested using structural equation modeling with maximum likelihood estimation. The emotional climate of the workplace, practice-related issues and collaborative relations are indicators of the latent variable “organizational culture”. Variable interrelationships suggested that climate was the strongest contributor to this construct. Each outcome (organizational commitment and intent to stay) was tested separately.

When organizational commitment was the outcome, the hypothesized model did not fit the data ($\chi^2 = 48.4$, $df = 6$, $CFI = .950$, $IFI = .951$, $TLI = .876$, $RMSEA = .144$) according to recommended standards.³⁴⁻³⁵ Based on suggested Modifications Indexes, theoretically plausible paths were created between the error terms of climate and relations and relations and practice-related issues. The revised model revealed an improved fit ($\chi^2 = 17.6$, $df = 4$, $CFI = .984$, $IFI = .984$, $TLI = .940$, $RMSEA = .100$); see Figure 6.1) with all paths highly significant. The findings supported the direct effects of all variables and the indirect effects of culture and trust on commitment. Culture had a direct positive effect on trust ($\beta = .57$), satisfaction ($\beta = .48$), and commitment ($\beta = .23$). In addition, culture indirectly influenced commitment through trust ($\beta = 0.17$), satisfaction ($\beta = 0.13$) and the path from culture to trust passing through satisfaction ($\beta = 0.03$). On the basis of the magnitude of their *total effects*, the determinants of organizational commitment may be ranked as follows: culture ($\beta = .56$), trust ($\beta = .36$) and satisfaction ($\beta = .27$). The standardized path coefficients for the final model are presented in Figure 6.1. The amount of explained variance was 45%.



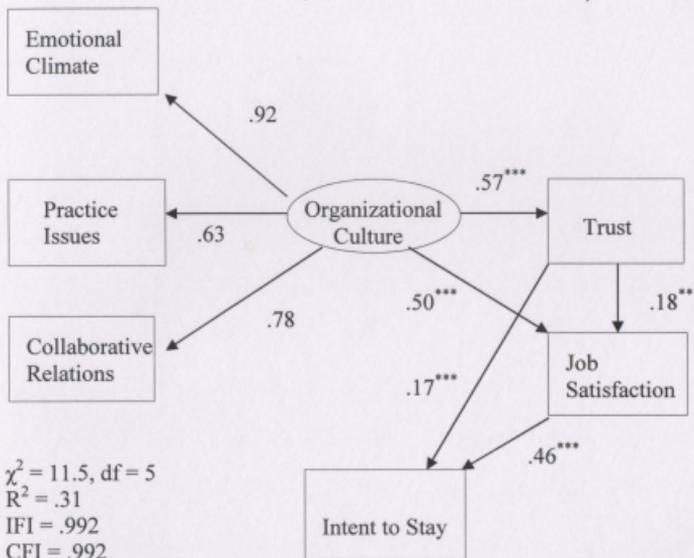
$\chi^2 = 17.6$, $df = 4$
 $R^2 = .45$
 IFI = .984
 CFI = .984
 TLI = .940
 RMSEA = .100

Note: df , degrees of freedom; CFI, Comparative Fit Index; IFI, Incremental Fit Index; R^2 , percent explained variance; RMSEA, Root Mean Square of Approximation; TLI, Tucker-Lewis Index; χ^2 , Chi-square.

Standardized path coefficients and their significance tests for the reduced path model are presented. ** $p < .01$; *** $p < .001$

Figure 6.1 Final model linking organizational culture, trust, job satisfaction, and organizational commitment

When intent to stay was the outcome, the data also did not fit the proposed model ($\chi^2 = 38.2$, $df = 6$, $CFI = .958$, $IFI = .958$, $TLI = .894$, $RMSEA = .126$). All originally hypothesized paths were statistically significant, with the notable exception of the culture to intent to stay path, which was removed. Paths were added between two error terms (practice-related issues and relations and climate and relations). The re-tested model revealed an improved fit ($\chi^2 = 11.5$, $df = 5$, $CFI = .992$, $IFI = .992$, $TLI = .975$, $RMSEA = .062$), with the findings supporting the direct effects of all variables, except culture, and the indirect effects of culture and trust. As predicted, culture had a direct positive effect on trust ($\beta = 0.57$) and satisfaction ($\beta = 0.50$). In addition, culture indirectly influenced intent through trust ($\beta = 0.10$), satisfaction ($\beta = 0.23$) and the path from culture to trust passing through satisfaction ($\beta = 0.05$). Based on the magnitude of their *total effects*, the determinants of intent to stay may be ranked as follows: satisfaction ($\beta = .46$), culture ($\beta = .38$), and trust ($\beta = .25$). The standardized path coefficients for the final model are presented in Figure 6.2. The amount of explained variance was 31%.



$\chi^2 = 11.5$, $df = 5$
 $R^2 = .31$
 $IFI = .992$
 $CFI = .992$
 $TLI = .975$
 $RMSEA = .062$

Note: df , degrees of freedom; CFI, Comparative Fit Index; IFI, Incremental Fit Index; R^2 , percent explained variance; RMSEA, Root Mean Square of Approximation; TFI, Tucker-Lewis Index; (TLI); χ^2 , Chi-square.

Standardized path coefficients and their significance tests for the reduced path model are presented. ** p < .01; *** p < .001

Figure 6.2 Final model linking organizational culture, trust, job satisfaction, and intent to stay

Discussion

Frontline RNs working in acute care in NL have negative perceptions of the organizational culture (i.e., emotional climate, practice-related issues, and collaborative relations). Furthermore, although moderate levels of job satisfaction were reported, low ratings were given to trust, commitment, and intent to stay. Importantly, 69.4% of the respondents indicated that they were likely or very likely to leave their current employer.

The causal models tested in the current study provide support for the impact of culture, trust, and satisfaction on commitment, but partial support for intent to stay. Study results support the proposition that culture, specifically emotional climate and practice issues, has a direct effect on commitment. As well, culture had indirect effects on commitment through trust and job satisfaction. Similarly, Laschinger et al.⁴ reported that work empowerment structures (information, support, resources, and opportunity) had a direct effect, as well as an indirect effect through trust, on affective commitment. Taunton et al.²⁷ also found that managerial, organizational, and work characteristics had significant direct effects on commitment, and indirect effects through job satisfaction. In a more recent study, Laschinger and Finegan³⁶ reported that structural empowerment had a direct effect on organizational commitment, as well as indirect effects through trust and job satisfaction. The implication is that interventions targeting organizational culture may result in greater levels of trust, satisfaction, and commitment.

In the current study, trust and satisfaction were significant direct predictors of commitment. Consistent with this study, levels of perceived psychological contract violation were identified as significant predictors of organizational loyalty for business managers and executives.¹⁴ Support also exists in the nursing literature for the direct effect of trust on affective commitment.⁴ As well, causal model findings support the strong direct effect of job satisfaction on organizational commitment.^{27,36}

The model for intent to stay fit the data reasonably well, with significant direct, positive effects for trust and job satisfaction. Contrary to our initial hypothesis, culture had only an indirect effect on intent to stay. This could be attributed to the weak correlation between these variables, to the sensitivity and specificity of the scales used to measure culture, or both. In contrast to the current study's findings, direct effects of several culture factors on nurses' turnover intentions have been reported.^{25-27,37} In the current study, trust and satisfaction partially mediated the effects of culture on turnover intent. Despite support from the business sector on the positive and direct effect of implied contract violations on anticipated turnover,¹³⁻¹⁴ these researchers did not examine the effects of determinants and mediators for commitment or turnover intentions. Support exists for the indirect effects of determinants (group cohesion, stress, interpersonal relations, routine, role overload, pay, autonomy, and leadership style) on nurses' turnover intentions through job satisfaction.^{26-27,37} Finally, the predictive significance of job satisfaction on intent to stay has been established.^{26,37}

Limitations

The cross-sectional nature of the study design and subsequent path analysis does not confirm causality, which requires an intervention to prove the hypothesis that changes in organizational culture and trust will improve organizational commitment and employee turnover intentions. The generalizability of the findings may be limited due to (a) the study population consisting of RNs who indicated a willingness to participate in research, (b) the relatively low response rate, (c) the absence of data on non-participants, (d) the possibility that nested models (nurses within hospitals and unit/wards) contributed to the significant results obtained, and (e) the use of self-reported data.

Conclusion and Practice Implications

Study results are consistent with previous findings documenting the importance of job and work environment factors for employee attitudes and behaviours. Empirical support for the proposed models of organizational commitment and intent to stay has serious implications for all levels of management. What is important is that management direct more attention to developing and implementing strategies to enhance culture (emotional climate, practice issues and collaborative relations), trust in employers and job satisfaction. The role of organizational culture is integral given its direct effect on organizational commitment and its indirect effects through trust and job satisfaction on commitment and intent to stay.

Health care managers must work in partnership with all levels of providers to identify and implement interventions to improve organizational culture and renew trustful employment relationships. In a system continuously undergoing change, organizational leadership must have in place policies and interventions that are responsive to employee needs. Integral to the success of such interventions is the provision of adequate human and physical resources to address the most challenging aspects of nurses' work environment (climate, control over practice, and collaborative relationships), and the presence of visionary leaders that are visible and accessible to all staff. Managers should be mindful of the fact that organizational culture in and of itself may have no direct effect on turnover intentions. Ongoing evaluation of timely change strategies is strongly recommended in a system that will likely be subjected to further reform.

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References

1. Aiken LH, Clarke SP, Sloane DM. (2000). Hospital restructuring: does it adversely affect care and outcomes? *J Nurs Admin* 2000; **30**(10): 457-465.
2. Shamian J, Lightstone EL. Hospital restructuring initiatives in Canada. *Med Care* 1997; **35**(suppl 10): OS62-OS69.
3. Cummings G, Estabrooks CA. The effects of hospital restructuring that included layoffs on individual nurses who remained employed: A systematic review of impact. *International Journal of Sociology and Social Policy* 2003; **23** (8/9): 8-53.
4. Laschinger, HKS, Finegan, J, Shamian, J. The impact of workplace empowerment, organizational trust on staff nurses' work satisfaction and organizational commitment. *Health Care Manage Rev* 2001; **26**: 7-23.
5. Shader K, Broome ME, Broome CD, West ME, Nash, M. Factors influencing satisfaction and anticipated turnover for nurses in an academic center. *J Nurs Admin* 2001; **31**(4): 210-216.
6. Stone PW, Larson EL, Moody-Kane C, Smolowitz J, Lin SX, Dick AW. Organizational climate and intensive care unit nurses' intention to leave. *Crit Care Med* 2006; **34** (7), 1907 – 1912.
7. Way CY, Gregory DM, Baker N, Lefort S, Barrett BJ, Parfrey PS. Attitudes and perceptions of RNs during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005a; **10** (Suppl 2):22-30.

8. Way CY, Gregory DM, Doyle M, Twells L, Barrett BJ, Parfrey PS. Health care provider outcomes during and shortly after acute care restructuring in Newfoundland and Labrador. *J Health Serv Res Policy* 2005b; **10** (Suppl 2): 58-67.
9. Woodward CA, Shannon HS, Lendrum B, Brown J, McIntosh J, Cunningham C. Predictors of job stress and satisfaction among hospital workers during reengineering: Differences by extent of supervisory responsibilities. *Healthcare Manage Forum* 2000; **13** (1): 29-35.
10. Lowe GS, Schellenberg G. What's a good job? The importance of employment relationships. Canadian Policy Research Networks Inc. Study No. W/05, 2001. Ottawa, ON: Canadian Policy Research Networks Inc.
11. Mueller C, Price J. Economic, psychological, and sociological determinants of voluntary turnover. *The Journal of Behavioural Economics* 1990; **19** (3): 321-325.
12. Robinson SL, Rousseau DM. Violating the psychological contract: Not the exception but the norm. *Journal of Organizational Behavior* 1994; **15**: 245-259.
13. Turnley WH, Feldman DC. Psychological contract violations during corporate restructuring. *Hum Resource Manage* 1998; **37**(1): 71-83.
14. Turnley WH, Feldman DC. The impact of psychological contract violations on exit, voice, loyalty, and neglect. *Human Relations* 1999; **52** (7): 895-922.

15. Mueller CW, Wallace JE, Price JL. Employee commitment: Resolving some issues. *Work and Occupations* 1992; **19**(3): 211-236.
16. Meyer JP, Allen NJ, Topolnytsky L. Commitment in a changing world of work. *Canadian Psychology* 1998; **39** (1/2): 83-93.
17. Roehling MV, Cavanaugh MA, Moynihan, LM, Boswell, WR. The nature of the new employment relationship: A content analysis of the practitioner and academic literatures. *Hum Resource Manage* 2000; **39** (4): 305-320.
18. Gershon RRM, Stone PW, Bakken S, Larson E. Measurement of organizational culture and climate in healthcare. *J Nurs Admin* 2004; **34**(1): 33-40.
19. Scott T, Mannion R, Davies H, Marshall M. The quantitative measurement of organizational culture in health care: A review of available instruments. *Health Serv Res* 2003; **38** (3): 923-945.
20. Snow JL. Enhancing work climate to improve performance and retain valued employees. *J Nurs Admin* 2002; **32** (7/8): 393-397.
21. Dirks KT, Ferrin DL. Trust in leadership: Meta-analytic findings and implications for research and practice. *J Appl Psychol* 2002; **87**(4), 611-628.
22. Blegen MA. Nurses' job satisfaction: A meta-analysis of related variables. *Nurs Res* 1993; **42** (1): 36-41.
23. Irvine DM, Evans MG. Job satisfaction and turnover among nurses: Integrating research findings across studies. *Nurs Res* 1995; **44** (4): 246-253.

24. Mathieu J E, Zajac DM. A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychol Bull* 1990; **108** (2): 171-194.
25. Alexander JA, Lichtenstein R, Oh HJ, Ullman E. A causal model of voluntary turnover among nursing personnel in long-term psychiatric settings. *Res Nurs Health* 1998; **21**: 415-427.
26. Cavanagh SJ, Coffin DA. Staff turnover among hospital nurses. *J Adv Nurs* 1992; **17**: 1369-1376.
27. Taunton RL, Boyle DK, Woods CQ, Hansen HE, Bott MJ. Manager leadership and retention of hospital staff nurses. *West J Nurs Res* 1997; **19** (2): 205-226.
28. Parfrey P, Barrett B, Gregory D. Restructuring acute care hospitals in Newfoundland and Labrador. *J Health Serv Res Policy* 2005; **10** (Suppl 2): 1-3.
29. Way C. *Nurses' perceptions of health care reforms and their impact on the quality of health care and nursing practice*. St. John's, NF: Association of Registered Nurses of Newfoundland, 1995.
30. Hackman JR, Oldman GR. Development of the job diagnostic survey. *J Appl Psychol* 1975; **60**: 159-170.
31. Mowday RT, Steers RM, Porter LW. The measurement of organizational commitment. *J Vocation Behav* 1979; **14**: 224-247.

32. Kline RB. *Principles and practices of structural equation modeling*. New York: Guilford Press, 1998.
33. Canadian Institute for Health Information. *Registered nurses database. Workforce trends of registered nurses in Canada, 2005*. Ottawa; Canadian Institute for Health Information, 2006.
34. Bentler PM, Bonett DG. Significance tests and goodness of fit in the analysis of covariance structures. *Psychol Bull* 1980; **88** (3): 588-606.
35. Browne MW, Cudeck R. Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing Structural Equation Models* (pp. 136-162). Newbury Park, CA: Sage Publications, 1993.
36. Laschinger HKS, Finegan J. Using empowerment to build trust and respect in the workplace: A strategy for addressing the nursing shortage. *Nurs Econ* 2005; **23** (1): 6-13.
37. Boyle DK, Bott MJ, Hansen HE, Woods CQ, Taunton R. Managers' leadership and critical care nurses' intent to stay. *Am J Crit Care* 1999; **8** (6): 361-371.

CHAPTER 7

General Discussion and Implications for Policy and Research

7.1 General Discussion and Policy Implications

The final chapter provides a summary discussion of the three studies, health care provider descriptive findings, and registered nurses (RN) findings (causal modeling). The discussion on policy is divided into two sections. The first section focuses on a review of the literature guiding policy decisions for transformed health care systems. The second section presents an overview of policy implications resulting from empirical evidence on the impact of system reform on acute care providers. Policy implications for the macro, meso, and micro levels, as well as potential areas for future applied health research will be highlighted. Finally, a summary discussion of the conclusions and description of knowledge transfer activities are presented.

7.1.1 Summary Discussion of the Three Studies' Findings

This is the most extensive and comprehensive program of research of its kind ever conducted in Newfoundland and Labrador and was specifically designed to examine the short to mid-term impact (5 to 7 years) of system reform on a number of health care provider groups' (physicians, licensed practical nurses, management personnel, allied health professionals, registered nurses) perceptions of work conditions and health care quality, work-related attitudes, and behavioral intentions. Registered nurses became an exemplar group because it is the largest grouping of acute care providers and the only one with available baseline data on the perceived impact of health care reform.

An important focus of the work for this doctoral dissertation was to test conceptual models linking aspects of organizational culture (emotional climate, practice issues and collaborative relations), intervening attitudes (trust in employer, job satisfaction), and outcome (organizational commitment, intent to stay, perceived health care quality). The size of the RN sample enabled the use of hierarchical regression and causal modeling techniques. Model testing has also been completed with front-line managers and physicians, with a paper on the managers' data published.¹

A broad objective of the studies was to capture and document a wide range of acute care providers' perceptions of health system changes for historical purposes. The ultimate intent was to inform and provide evidence that contributes to a better understanding of the impact of system reform on providers to policy makers at the federal and provincial levels of government, decision makers, professional associations/unions and providers, and the public. This improved understanding could be used to assist in the development, implementation, and management of health human resources policies and initiatives arising from those policies.

The *first* study in this dissertation involved an examination of the perceived impact of system reform on health care providers (registered nurses, licensed practical nurses, physicians, allied health professionals, management personnel) during restructuring. The operational measures (see Appendix B) for all of the studies were specifically designed to

assess providers' perceptions of important areas of system reform. In the *second* empirical study health care providers were surveyed shortly after restructuring. The *third* study in 2005 focused solely on registered nurses.

The studies were co-sponsored by two partners in the province (Department of Health and Community Services, Government of Newfoundland and Labrador and the Health Care Corporation of St. John's) that expressed an interest in evaluating the impact of system reform on a number of areas, including health care providers. The external co-sponsor was the Canadian Health Services Research Foundation, an organization which supports evidence-based decision-making in the organization, management and delivery of health services through funding research, building capacity, and transferring knowledge. Close collaboration with the local co-sponsors (health ministry and the largest regional health board) of the research, health services researchers, employers, and professional associations and unions paved the way for the collection and analysis of data deemed relevant and useful for all parties. All groups were optimistic that the body of evidence emerging from this research could be useful in the formulation of public policy in health care.

7.1.2 Overview of Health Care Provider Descriptive Findings

Studies one and two examined the perceptions of organizational culture among several provider groups. The results indicate that the perceptions of all provider groups resulted

in low ratings of organizational culture during and following health system transformation. More specifically, all provider groups had negative perceptions of organizational culture and health care quality. Significantly, despite acknowledging the importance of system reforms, acute care providers in NL believed that their ability to provide quality services had been compromised, in part, because reform initiatives (re-engineering, reductions in support and management personnel, bed closures, and mergers) had altered the nature of the work environment, shortened lengths of stay and increased inpatient acuity levels. As well, all of the provider groups evidenced low levels of organizational commitment and trust in employers, and were unsure about staying with current employers. On a positive note, most providers were satisfied with their jobs throughout the reform period.

It was anticipated that acute care providers in St. John's, the largest region with the most pervasive reforms and the greatest dislocation of workers due to hospital aggregation and closure, would show greater negativity than those in the other regions of the province. This conjecture was not supported by the findings, suggesting that change strategies implemented to buffer the impact of hospital closure and aggregation effectively prevented deterioration in perceptions, attitudes and behavior.

7.1.3 Registered Nurses Findings

In the study of registered nurses, findings suggest that a multitude of factors influence nurses' attitudes, intentions and perceived quality of care. In samples of registered nurses, the testing of conceptual models linking aspects of organizational culture (emotional climate, practice issues and collaborative relations) to work-related attitudes (trust in employer, job satisfaction, and organizational commitment), and behavioral intentions (intent to stay), as well as linking culture to trust in employer and perceived health care quality suggested that a common, but significant, finding was the link between aspects of organizational culture to commitment, intent to stay and quality. Key aspects of organizational culture were highlighted as the best predictors of outcome, but this research finding warrants further monitoring over time.

7.1.4 Summary

The linkages between key organizational culture factors (emotional climate, practice issues, collaborative relations), intervening attitudes (trust in employer, job satisfaction), and outcome (commitment to the organization, turnover intentions and health care quality) for select health care provider groups, especially registered nurses, suggest that system change can impact the greatest asset of any organization – the employees. It is in the public's interest for policy makers to formulate policies aimed at minimizing the impact of health system reform on providers. It would be important to determine whether

these interventions did lead to more positive perceptions of the organizational culture and greater levels of trust, organizational commitment, intentions of staying with current employer and more positive perceptions of health care quality. The studies' findings will likely provide missing information that will enable stakeholders to engage in more informed discussions with each other and ideally, inspire the creation of broadly endorsed provincial health human resources policies that can be readily implemented.

7.2 Policy Directions for Transforming Health Care Systems – Importance of Evidence-based Change

Regionalization of health services occurred over a decade ago, yet there is very little evaluative data on its envisaged achievements.² There is also very little empirical evidence to support the claims associated with reengineering - cost reduction, improvement in work processes, productivity and patient care.³ Based on a review of available Canadian research and policy reports, and where necessary, U.S. study findings, Shannon and French³ suggest that reengineering strategies have not worked and that the impact on nursing and patient outcomes has been negative. Finally, a review of the literature on organizational downsizing in healthcare by Davis, Savage, and Stewart⁴ concluded that there is inconsistent evidence regarding the long-term benefits of downsizing.

Several reform initiatives (restructuring, reengineering, hospital closure and aggregation, bed reductions and downsizing) occurred concomitantly with regionalization of health services in Canada in the 1990s. The acute care sector was inundated with reform because it represented the greatest health care expenditure. There was scant empirical evidence supporting the effectiveness of reform initiatives⁵⁻⁶ or their long-term impact for an organization's performance in terms of costs, quality of services, and satisfaction of consumers and employees⁷. The restructuring component of the health services agenda for cost containment essentially targeted human resources, the largest health care expenditure; yet, the long-term effects of restructuring on health human resources received little to no attention.⁸

7.2.1 Health Human Resources

Health services researchers began to investigate the impact of acute care sector restructuring on providers' perceptions early in the process of restructuring, particularly for registered nurses. The accumulation of evidence from studies using variant research designs and at different stages of system reform from the mid 1990s onwards all report a negative impact of restructuring on workplace conditions, health care quality, collaborative relations, the job, organizational commitment, and trust in leadership.⁹⁻¹⁰

Although human resources is the most important input into the provision of health care, this issue only reached the public and political agendas around 2000, almost a decade

after health care restructuring and downsizing. A growing number of national and provincial reports highlight health human resource problems associated with working conditions and work environments subsequent to the health system transformation in the 1990s.¹¹⁻¹⁵

In 2001, policy-makers, decision-makers and health services researchers identified health human resources (recruitment and retention) as a top priority for research and action.¹⁶ In 2004, it remained the number one priority for policy makers, decision-makers and applied health researchers. Notably, issues such as improvement of the workplace, appropriate workloads, improvements in quality of work-life, teamwork and interdisciplinary collaboration and leadership were identified as key research areas.¹⁷

The necessity of creating high quality work environments in the health care industry has been addressed by researchers in a number of key national reports.^{12-15, 18-20} It is believed that high-quality work environments contribute to strong employment relationships (trust, commitment, communication and influence) and in turn are related to improved quality of work-life and organizational performance.¹⁹ Study findings on a large cross-section of employee groups in Canada indicated that work environment factors (job demands, supportiveness, access to resources) have significant implications for employment relationships (trust, commitment, communication and influence), and that ratings of all of these factors are lowest for health care employees subjected to restructuring, downsizing or job changing.¹⁹

Clearly, the empirical evidence suggests that it is in the best interest of all levels of government to foster high quality work environments for their employees. However, the real gap in health human resources research is in the study of the processes linking intervention to positive individual and organizational outcomes.²⁰ For example, despite overwhelming evidence supporting the negative impact health system reform has had on registered nurses, less is known about how system reform may have altered hypothesized linkages among organizational factors and outcomes.

The federal, provincial, and territorial levels of government made an important policy decision with the integration of health human resources (issues of recruitment and retention, healthy workplaces) into the 2003 Health Accord.²¹ Further, establishment of the Health Council of Canada in the 2003 Accord on Health Care Renewal²¹ and the subsequent enhancement of the council's role in the 2004 10-Year Plan to Strengthen Health Care²² were positive steps in communicating to the public about key issues such as health care access, quality, and health human resources. In 2005, the government of Newfoundland and Labrador fulfilled its agreement by reporting to the public on an action plan focusing in part on the training, recruitment and retention of health human resources, and establishing healthy workplaces.²³ The plan provides a clear indication of the government's commitment to support healthy workplace initiatives.

In summary, the structural (restructuring, reengineering, and downsizing) aspects of health system transformation and their impact on provider outcomes have been subjected to extensive research. In contrast, regionalization of health services has been evaluated to a far lesser extent. The point has been made by some researchers that the relationships that define work experiences, and the outcomes of these relationships for workers and employers require more concerted research efforts. The findings of the studies comprising this doctoral work contribute new information on the linkages between aspects of organizational culture (emotional climate, practice issues, and collaborative issues), intervening variables (trust in employer and job satisfaction) and provider outcome (organizational commitment, intent to stay, and perceived health care quality). The findings provide valuable information for a number of levels including applied health researchers, decision makers, policymakers, etc.

7.2.2 Quality of Care Issues

Provincial commissions identified quality of care as a key principle in health care reform initiatives.^{13,24} In the aftermath of system reform, health human resources and quality of care issues concurrently moved higher up the policy agenda at all levels (government, boards, organizations, public, health care providers; professional associations/unions). Improving quality and the outcomes of care has emerged as a central theme in the United States,²⁵ United Kingdom,²⁶ and Canada^{24,27}. A notable difficulty associated with the issue of quality of care is how quality is interpreted and can differ between users,

providers and organizations. Patients and providers use different conceptual definitions for quality of care. Patient satisfaction surveys monitoring quality of care tend to focus on the caring and supportive aspects, while surveys of providers' perceptions focus more on professional standards, safety issues, and the adequacy of human and physical resources. The use of a common framework for health system users, providers and organizations is required. Achieving clarification and gaining consensus on what health care quality really means is an essential first step. The *Alberta Quality Matrix for Health*²⁸ is one tool that could be used to guide data collection across all health care sectors within each region. In 2004, the Health Quality Network developed a common framework for health system users, providers and organizations that helps organize information and thinking around the complexity of the health system. Six dimensions of quality are assessed: accessibility, availability, appropriateness, effectiveness, efficiency and safety. A major premise of the matrix is that collaboration among health care organizations, health care providers, and various stakeholders is the key ingredient for health care quality.

7.3 Policy Implications

A number of policy implications can be drawn from this research which could contribute to at least three phases of the policy-making process: agenda setting; policy formulation; and implementation. Policy recommendations are directed at three levels: macro (governments), meso (regional health boards, senior leadership and managers of institutions, public) and micro (individual health care providers, professional

bodies/unions). Discussion of study results are organized around health policy implications for each level. While the micro level policy implications are generally useful for all health care provider groups, a number of specific implications have been addressed for registered nurses.

7.3.1 Macro Level Implications (Governments)

The federal government's role in health care organization and delivery is limited by the Canadian Constitution, which dictates that provincial/territorial governments are primarily responsible for the provision of health care and health policy. The federal government has control or influence on health policy at the provincial level primarily through the Canada Health Act of 1984.²⁹ The Canada Health Act authorizes the federal government to make fiscal transfers to the provinces and territories for the provision of insured hospital and physician services. The transfer payments are subject to compliance with five principles of the Act: comprehensiveness, universality, accessibility, portability and public administration. The federal government can play a pivotal role through the transfer of funding to the provinces, in determining what issues (e.g., health human resources, healthy workplace, quality of care, cost containment) are placed on federal and provincial health policy agendas.

Commitment to healthy workplaces must be tempered with the reality of a system continually faced with escalations in health care expenditures and costs of care. Policy

makers at both levels of government, but particularly so at the provincial level, will be forced to deal with the impact of health policy decisions aimed at human resource issues, such as numbers of employees and costs and/or quality of care concerns. It is imperative that the provincial government clearly identify and communicate its policy goals to all key health system stakeholders, identify the manner in which goals will be achieved, and identify the mechanism by which it will measure the success or failure in achieving stated goals. Most importantly, future government blueprints for health care transformation must explicitly consider their impact on the work environment and employees.

7.3.2 Meso Level Implications (Regional Health Boards, Senior Leadership and Managers of Institutions, Public)

7.3.2.1 Regional Health Boards

Regional health boards are mandated and funded to be responsible for providing health care services to a population. In addition, they are responsible for their staff recruitment and professional development. It is important, therefore, to consider that any policy formulation takes into account the unique needs of health care providers employed by or affiliated with each board and their respective institutions. Similar to the federal and provincial government, regional health boards, senior leadership and managers must explicitly consider the impact of future proposals for system reform on work

environments and employees and engage the professional bodies/unions in the planning process.

A key factor in successful implementation of change strategies is recognizing and acknowledging that each health care provider group has its own ethos. It is critical that each group's readiness for, and acceptance of, change is evaluated before change is implemented. An important consideration is that human and organizational behaviors are most resistant to transformations. Involvement of health care providers prior to, during, and after health care restructuring together with open and transparent sharing of information throughout the change process are necessary to buffer any negative impact of reforms.

7.3.2.2 Senior Leadership and Managers of Institutions

Health care managers must work in partnership with all levels of providers to identify and implement interventions to improve organizational culture and renew trustful employment relationships in the aftermath of reform. Greater autonomy, appreciation, recognition and opportunities for professional development, adequate resources, improved lines of communication, and co-worker and supervisor support are all critical for enhancing the organizational culture. It is recognized that the identification, development, implementation and evaluation of such interventions will require time, effort and resources. Nonetheless, it is essential that in a system continuously undergoing

change, organizational leadership have policies and interventions in place that are responsive to employee needs.

Integral to the success of such interventions is the provision of adequate human and physical resources to address the most challenging aspects of health care providers' organizational culture (climate, control over practice, collaborative relationships). In addition, there must be a visible and accessible presence of visionary managers. This was a major challenge post-regionalization with 40% to 50% reductions in management and support staff in all regions of the province.

Empirical support for the proposed models of organizational commitment and intent to stay has serious implications for all levels of management. Management must direct more attention to developing and implementing strategies to enhance culture (emotional climate, practice issues and collaborative relations), trust in employers and job satisfaction. The role of organizational culture is integral given its direct effect on organizational commitment, and its indirect effects through trust and job satisfaction on both commitment and intent to stay. Provincial initiatives to improve the emotional climate of the workplace and collaborative relations may achieve improvements in health care provider' attitudes and behaviours, which may translate into enhanced organizational commitment and subsequent improvement in productivity.

During times of restructuring and downsizing, senior managers are pre-occupied with cost reductions, efficiency, productivity, etc. as opposed to health care providers' work environment or outcomes. Regional health boards and individual organizations need to partner with employees, professional associations and unions to make the necessary work environment changes. Rebuilding trust between the employer and employee and enhancing commitment in the organization must be a senior management priority.

There are also a number of specific policy implications for senior leadership and managers of the regional health boards that emerge from the study findings focusing on provider and patient perceptions of health care quality. Policy formulations must focus on a collaborative interdisciplinary approach to the delivery of health care. At a national level there is a drive to promote interdisciplinary collaboration to ensure the delivery of quality and effective care.³⁰⁻³³ The reports suggest that there is limited insight on how to make these teams work. Although the structure and/or composition of the teams may be relatively straightforward, the process of getting the teams to work collaboratively may prove to be more of a challenge. Interdisciplinary collaboration requires teamwork. A synthesis of existing evidence regarding effective teams in health care and what is being done to promote effective teamwork in Canada and elsewhere was completed in 2006. A report commissioned by the Canadian Health Services Research Foundation suggests that teamwork and team composition may be positively linked to quality and safety.³⁰ The requirements of collaborative team work include strong leadership, role clarity, trust, respect, and feelings of being valued.

Hospital administrators require more empirical evidence linking providers' perceptions of diminished quality of care to actual patient outcomes (e.g., adverse effects, medical errors) prior to the formulation and implementation of any health policies directed at this issue. Therefore, continuous surveillance of patients' and providers' perceptions is imperative in order to explore the potential linkage of professional practice to patient outcomes.

Researchers have also suggested that a multi-level approach to change is necessary to maximize the probability of success of quality improvement initiatives.³⁴ The four levels of change include: the individual, the group or team, the overall organization, and the larger system or environment in which the individual organizations are embedded.

Further, quality improvement initiatives must pay greater attention to issues of leadership at all levels, culture that supports learning throughout the care process, team or micro-system development, and information technology for both continuous quality improvement and external accountability.³⁴

7.3.2.3 Public

The onus is also on the public to become engaged and ensure that the government holds true to its commitment to create healthy workplaces. Clearly, it is in the public's best interest to have satisfied, committed providers that work in positive, healthy workplaces.

The need for an immediate improvement to the workplace environment of health care providers in the acute care setting can be supported through the current research findings.

It could be argued that as patients become more well-informed about balanced report cards, outcomes and complication rates, more direct questions should be posed related to their perceived level of and satisfaction with the quality of clinical care (e.g., received the correct medication, correct diagnosis and/or treatment). Methods such as those developed to encourage consumer feedback (telephone hotline, patient satisfaction questionnaires, external program advisory committees, focus groups, and processes for patient complaints through a Patient Relations Officer) in the St. John's region should be considered.

7.3.3 Micro Level Implications (Individual Health Care Providers and Professional Associations and Unions)

7.3.3.1 Individual Health Care Providers

The findings of the current studies can provide individual health care providers with more insight not only into key factors influencing their work, but also ways in which they could assume some responsibility for improving the work environment (e.g., providing support to co-workers, initiating contact with managers to facilitate organizational changes). Individual health care providers must assume part of the responsibility for

improving their professional autonomy by engaging in workplace committees, encouraging colleagues to speak out about managerial and organizational decisions negatively influencing the practice environment, and by providing feedback to managers about practice issues or concerns.

7.3.3.2 *Professional Associations and Unions*

The findings of the current studies are also useful for professional associations and labor unions. The findings provide empirical support for the negative impact of change on all participating health care provider groups' perceptions of the emotional climate, practice issues and collaborative relations. Professional associations and unions play a prominent role in the health care system. Moving health human resources issues to the health policy level and making positive changes can be daunting challenges for individual health care provider groups. During the course of this research it was evident that adversarial labour-management relations were present as reflected in the number of labour strikes.

Associations and unions can play a useful role as negotiators for improvements in aspects of the organizational culture (emotional climate, control over practice, collaborative relations) and in the identification of solutions or strategies to initiate change through labor-management relations and through the collective-bargaining process. Professional associations/unions must move toward rebuilding and restoring trust with management.

The primary goal of a recent initiative developed by the Association of Registered Nurses of Newfoundland and Labrador and the College of Licensed Practical Nurses of Newfoundland and Labrador is to improve the work lives of nurses across the province by addressing issues such as workload, nursing leadership, control over practice and work life, professional development, organizational support, and communications and collaboration. The Quality Professional Practice Environment Program is designed to assist nurses and their employers to create and maintain workplaces that support high quality nursing services and value the personal well-being of nurses.³⁵

It is somewhat perplexing that in the province with the highest number of RNs and LPNs per population, prolonged negative perceptions of organizational culture, low levels of trust, job satisfaction, and organizational commitment, ambivalence towards remaining with current employer, and negative perceptions of health care quality prevailed. Importantly, absenteeism in NL health occupations was and continues to be notably higher than that of the national average for health occupations.³⁶⁻³⁷ The leaders of the different professional associations and unions can take the commonalities in the findings of the studies and work collaboratively in an effort to create a strong, unified voice on issues related to aspects of organizational culture, trust, job satisfaction, commitment to the organization, and perceived health care quality.

7.4 Recommendations for Future Research

The findings of this research support the negative impact of reforms on aspects of organizational culture, perceived health care quality, work attitudes, and intent to stay. Although the available data on acute care nurses' perceptions of the impact of health care reform spans over a decade, the database for other health care providers is limited to two time periods (during and shortly following restructuring). While the repeated measures design used in studies one and two provide meaningful data on the direction and strength of the changes in provider perceptions' of the impact of reform over time, the understanding of the longer-term impact of system changes on all provider groups is warranted. Ongoing research is required to evaluate the impact of future restructuring and/or cost containment initiatives on all provider groups.

The current studies' findings also provide partial support for the conceptual framework guiding this doctoral research. The findings support the important effects of organizational culture (emotional climate, practice issues, collaborative relations) on work attitudes (trust and job satisfaction), organizational commitment, intent to stay and perceived health care quality. Nevertheless, model testing with cross-sectional data is limiting. Interpretations of the logic of the conceptual model will be strengthened by using longitudinal data and relying on nested modeling analyses to determine if there are clustering effects at the work unit, organizational, and/or regional level. In addition, more research is required to gain a better understanding of the links between aspects of

organizational culture (emotional climate, practice issues, collaborative relations), trust in employer, job satisfaction, organizational commitment, and intent to stay in other groups of health care providers. Although the registered nurses group was used as an exemplar for this doctoral research, there has been ongoing analysis of clinical management and physician groups from the larger program of research.

The studies' findings provided insightful data on the predictive power for registered nurses of organizational factors and work-related attitudes for intermediate outcomes (trust in employer, job satisfaction) and final outcomes (organizational commitment, intent to stay, perceived health care quality). However, the individual variables and variable sets explained only 50% of the variance in perceived health care quality and organizational commitment, and only one third in intent to stay. Future research, with a broader set of organizational culture and work-related factors, would help employers and managers identify the most effective employee retention initiatives and allow for a more thorough investigation of the conceptual model.

Employees' perceptions of the work environment and reactions to organizational change have important implications for health status, job performance, productivity, and sick leave usage, as well as ultimately for organizational outcomes (e.g., service quality, efficiency, costs). The major gap not investigated in this doctoral research focuses on the link between aspects of organizational culture (emotional climate, practice issues, collaborative relations), trust in employer, job satisfaction, perceived health care quality,

organizational commitment, intent to stay, and actual health care provider (e.g., turnover, sick leave, number of grievances, health, productivity) and patient outcomes (e.g., mortality, adverse events). The work would require the use of integrative conceptual frameworks, research designs and statistical methods that are capable of considering all of the factors outlined in an expanded version of the conceptual model used to guide this doctoral research.

The role played by personal and situational factors in shaping attitudes and behaviors can be better elucidated using qualitative research methodologies in future studies.

Qualitative studies would provide a more in-depth understanding of acute care providers' perceptions of the impact of health care reforms and their work-related attitudes, behavioral intentions and perceptions of health care quality. As well, qualitative research data could provide some answers to questions arising from the quantitative data (e.g., Despite downsizing of management personnel, why were managers more positive than all other provider groups? Why were there minimal improvements in perceptions of the emotional climate, practice issues, and collaborative relations in a region that embraced a program-based management approach to the organization and delivery of care?).

Finally, and perhaps most importantly, the mounting empirical evidence supporting the impact of health system reform on health care providers in general, and registered nurses in particular, warrants the need for immediate interventional studies. Arguably, this health human resources issue has been exhaustively investigated. The time has come to

act on the evidence that supports the importance of culture in the current study and elsewhere and to think “out of the box” and identify more creative interventions aimed at addressing this and other very challenging health-human resource issues. Since registered nurses continue to provide the bulk of direct care within the NL health care system, it appears reasonable to implement an intervention with this group as a starting point. Targeting organizational culture factors (emotional climate, practice-issues, and collaborative relations) utilizing randomized controlled trials and/or prospective cohort studies would be extremely valuable for planning effective strategies to reduce perceptions of mistrust, to enhance job satisfaction and organizational commitment, to reduce thoughts about leaving current employers, and to improve perceptions of health care quality. If successful, the intervention (or a modified provider specific version, if necessary) could be extended to other health care providers and possibly other health care sectors.

It has been suggested that the implications of regionalization for improving Canadian healthcare management and delivery, and ultimately, the health of Canada’s populations, have yet to be adequately assessed and reported.³⁸ In NL, health care reform/restructuring has continued to stay on the political agenda. Despite the lack of empirical support for the effectiveness of regionalization, the provincial government initiated a policy of re-regionalization, which resulted in the retraction of the fourteen Regional Health Boards to four Regional Integrated Health Authorities in April 2005. Although the importance of evaluating the latest round of integration was acknowledged and generally supported, to

date no such evaluation has occurred. It is imperative that applied health researchers continue to partner with policy makers and decision makers to evaluate the impact of this latest reform strategy (re-regionalization) and/or additional restructuring initiatives and its impact on health human resources.

7.5 Conclusions

My doctoral work provided me with a rich opportunity to focus on a multidisciplinary approach to the examination of the impact of health system reform in the acute care setting. The research provided me with an opportunity to investigate the health care provider groups as individual silos, in addition to allowing me to compare findings across the provider groups.

Provider groups across all regions of the province perceived such work pressures as limited control over practice and participation in decision-making, poor organizational climates, and conflict with management and other disciplines. Although ratings of the emotional climate of the workplace and work relations showed marginal gains over time, they remained in the low range. In addition, despite being reasonably satisfied with their jobs, most staff groups who had low organizational commitment, were distrustful of employers, and were uncertain about staying with current employers. The similarity in providers' perceptions and reactions in St. John's and other regions during restructuring, with noted improvements in some cases for St. John's, suggests that measures (publicly presented strategic plan for aggregation, implementation of program-based management,

tacit support from all stakeholders, a decision not to downsize the front-line workforce) implemented to buffer the impact of hospital closure and aggregation in the St. John's region may have been effective. There needs to be a significant investment in fostering aspects of the organizational culture of health care providers across all regions, with an aim of rebuilding trustful relationships and improving job satisfaction and organizational commitment, which should ultimately lead to greater intent to stay and more positive perceptions of health care quality over the long-term.

In considering how results of the three studies comprising this dissertation are used for policy-making purposes, it is important to appreciate that they will move us closer to gaining greater insight into the impact of health system change in the acute care setting on a number of health care provider groups' perceptions of the importance of health care reform, work conditions (emotional climate, practice issues, collaborative relations, quality of care, safety, standards of care), work attitudes (trust in employer, job satisfaction, organizational commitment), and turnover intentions. More specifically, the identification of common significant predictors (e.g., aspects of organizational culture) of organizational commitment, turnover intentions and perceived health care quality in registered nurses, makes it more feasible to target specific interventions.

There is undoubtedly a compelling need for more and better data on a considerable number of health organization and delivery of care issues, but particularly for health human resources (e.g., interventions aimed at promoting healthy workplaces) and the

options available to address them. The studies' findings provide useful comparison for previous and future research, as well as direction for health system stakeholders in the area of health human resources policies and care delivery strategies, and applied health research.

Valuable lessons can be learned from the province's policy to regionalize its health services and restructure its health care system in the early 1990s. It is important that we take the lessons learned from the past so that future health system change efforts build on prior success and avoid previous errors. Steady increases in real costs surpassing the growth in the financial capacity of the NL government and dispirited staff continue to surface as major forces that will presumably influence the direction of health care policy in the province.

7.6 Knowledge Transfer Activities

To promote the engagement of key stakeholders in the health care system there was widespread and ongoing dissemination of findings throughout the course of this doctoral research to the co-sponsors, institutional health boards, professional associations/unions, health care providers, teams of management personnel, and the public. In addition, the findings were disseminated at three regional forums held across the province, thus providing opportunities for as many stakeholder representatives as possible to be privy to the research findings. Finally, five papers were written as part of this dissertation. Three

have been published, one has been accepted for publication, and one has been submitted for peer-review). The results provide useful comparative data for stakeholders responsible for developing human resources policies (workforce and workplace) and care delivery strategies aimed at the delivery of high quality care.

References

1. Way C, Gregory D, Davis J, Baker N, LeFort S, Barrett B, Parfrey P. The Impact of organizational culture on clinical managers' organizational commitment and turnover intentions. *J Nurs Admin* 2007; **37** (5): 235-242.
2. Lewis S, Kouri D. Regionalization: Making sense of the Canadian experience. *Healthcare Papers* 2004; **5** (1): 12-31.
3. Shannon V, French S. The impact of a re-engineered world of health care in Canada on nursing and patient outcomes. *Nursing Inquiry* 2005; **12** (3): 231-239.
4. Davis JA, Savage G, Stewart RT. Organizational downsizing: A review of literature for planning and research. *Journal of Healthcare Management* 2003; **48** (3): 181-199.
5. Aiken LH, Clarke SP, Sloane DM. (2000). Hospital restructuring: does it adversely affect care and outcomes? *J Nurs Admin* 2000; **30**(10): 457-465.
6. Shamian J, Lightstone EL. Hospital restructuring initiatives in Canada. *Med Care*. 1997; **35** (suppl 10): OS62-OS69.
7. Leatt P, Baker GR, Halverson PK, Aird C. Downsizing, re-engineering, and restructuring: Long-term implications for healthcare organizations. *Frontiers of Health Services Management* 1997; **13** (4):3-37.
8. Baumann A, O'Brien-Pallas L, Deber R, Donner G, Semogas D, Silverman B. Downsizing in the hospital system: a restructuring process. *Healthcare Management Forum* 1996; **9**(4): 5-23.

9. Cummings G, Estabrooks CA. The effects of hospital restructuring that included layoffs on individual nurses who remained employed: A systematic review of impact. *International Journal of Sociology and Social Policy* 2003; **23** (8/9): 8-53.
10. Burke RJ. Health care restructuring in Canada. *International Journal of Sociology and Social Policy* 2003; **23**(8/9): 1-7.
11. Standing Senate Committee on Social Affairs, Science & Technology. *The health of Canadians: The Federal role. Final report on the state of the health care system in Canada. Volume Six: Recommendations for reform.* October, 2002. (Chair: The Honourable Michael J.L. Kirby).
<http://www.olca.com/Library/ACF1C4D.pdf>.
12. Commission on the Future of Health Care in Canada. *Building on values: The future of health care in Canada.* November, 2002.
http://www.hc.gc.ca/english/pdf/care/romanow_e.pdf
13. *A Framework for Reform (Mazankowski Report).* Report of the Premier's Advisory Council on Health, Edmonton Alberta, December 2001.
14. Canadian Policy Research Networks, Inc. (CPRN). *Human resource planning in Canada: Physician and nursing workforce issues.* October, 2002.
<http://www.cprn.com/cprn.html>
15. Canadian Nursing Advisory Committee (CNAC). *Our health, our future: Creating quality workplaces for Canadian nurses.* Final report of the Canadian Nursing Advisory Committee on Health Human Resources. 2002.

16. Gagnon D, Ménard M on behalf of the Listening for Directions Partners.
Listening for Direction I: A national Consultation on Health Services and Policy Issues. Ottawa: Canadian Health Services Research Foundation. 2001.
www.chsrf.ca
17. Dault M, Lomas J, Barer M on behalf of the Listening for Directions Partners.
Listening for Direction II: A national Consultation on Health Services and Policy Issues for 2004-2007. Ottawa: Canadian Health Services Research Foundation.
2004. www.chsrf.ca
18. Baumann A, O'Brien-Pallas L, Armstrong-Stassen M, *et al.* *Commitment and care: The benefits of a healthy workplace for nurses, their patients and the system. A policy synthesis.* Ottawa, Ontario: Canadian Health Services Research Foundation, 2001.
19. Lowe GS, Schellenberg G. What's a good job? The importance of employment relationships. Canadian Policy Research Networks Inc. Study No. W/05. Ottawa, ON: Canadian Policy Research Networks Inc, 2001.
20. Koehoorn M, Lowe GS, Rondeau KV, Schellenberg G, Wagar TH. Creating high-quality health care workplaces. A background paper for Canadian Policy Research Networks' National Roundtable. Ottawa, ON: Canadian Policy Networks Inc. (CPRN) (CPRN Discussion paper No.W/14), 2002.
21. Health Canada. 2003. First Ministers' Accord on Health Care Renewal. http://hcs.gc.ca/hcs-sss/delivery-prestation/fptcollab/2003accord/index_e.html
22. Health Canada. 2004. *A 10-Year Plan to Strengthen Health Care.* Ottawa: Author.

23. *Reporting to the People of Newfoundland and Labrador: First Minister's Accord 2005. Implementation Report 2005*. Retrieved at <http://www.health.gov.nl.ca/health/publications/pdf/files/FMM%20report.pdf>
24. *Caring for Medicare: Sustaining a Quality System*. The Commission on Medicare, Regina, Saskatchewan, April 2001.
25. Institute of Medicine. 2001. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, D.C.: National Academy of Sciences.
26. CM 4818. 2000. *The NHS Plan*. London: HMSO.
27. Health Council of Canada. 2006. *Health Care Renewal in Canada: Clearing the road to quality*. Toronto: Author.
28. Alberta Quality Matrix for Health. Health Quality Network.
http://www.hqca.ca/templates/HQCA5/pdf/Matrix_User_Guide.pdf
29. *Canada Health Act*, 1984.
30. Oandasan I, Baker GR, Barker K, Bosco C, D'Amour D, Jones L, Kimpton S, Lemieux-Charles L, Nasmith L, San Martin Rodriguez L, Tepper J, Way D. *Teamwork in Healthcare: Promoting Effective Teamwork in Healthcare in Canada*. Ottawa: Canadian Health Services Research Foundation, 2006.
31. Health Council of Canada. 2005. *Healthcare Renewal in Canada: Accelerating Change*. Toronto: Author.
32. Health Council of Canada. 2005. *Modernizing the Management of Health Human Resources in Canada: Identifying Areas for Accelerated Change. Report from a National Summit*. Toronto: Author.

33. Enhancing Interdisciplinary Collaboration in Primary Health Care in Canada. 2005. <http://www.eicp-acis.ca/en/resources/pdfs/Enhancing-Interdisciplinary-Collaboration-in-Primary-Health-Care-in-Canada.pdf>
34. Ferlie EB, Shortell SM. Improving the Quality of Health Care in the United Kingdom and the United States: A framework for change. *The Milbank Quarterly*, 79 (2), 2001.
35. *Quality Professional Practice Programs in Facilities Across Province! Safety Shift*. Health & Safety News for Health Care. Healthy Workplace Initiative 2006; 2 (1): 2.
36. Canadian Institute for Health Information. 2001. Canada's Health Care Providers. Ottawa: CIHI. Retrieved from www.cihi.ca
37. Canada's Health Care Providers. 2005 Chartbook. Canadian Institute for Health Information. Retrieved from www.cihi.ca/HCP_Chartbook05_e.pdf
38. New Models for the New Healthcare. *Healthcare Papers* 2004; 5(1).

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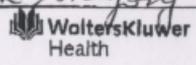
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Appendix B
Employee Attitude Survey

You Will Only Be Heard If You Respond!

Nursing Colleague:

Since 1995 registered nurses have participated at different times (i.e., 1996, 1999, 2000, and 2002) in research studies examining the impact of health care reform in acute care facilities under institutional and integrated boards. The findings have been widely disseminated at local, national and international levels. With another phase of restructuring announced, we would like to gather additional data on nurses= perceptions of the impact of reform to date before implementation of any future initiatives.

ARNNL registration numbers are recorded on the questionnaires for the purpose of including the same people in a future survey. **There is no way for the investigators to match registration numbers with personal identifiers (i.e., names or addresses).** All identifying information has been retained by the ARNNL to ensure confidentiality of responses.

We hope that you will take this opportunity to express your views.

Enclosed is an envelope (postage pre-paid) for you to return the questionnaire. Thank you for taking the time to help us with this project.

The deadline reply date is February 25, 2005.

Enclosure

Part I: General Information

The information that you provide in this section will be helpful in determining how representative the sample is in terms of the nursing workforce. It will also facilitate comparisons across areas of practice and within and among regions. Please **ONLY CIRCLE ONE RESPONSE** for Questions 1 thru 9.

PLEASE DO NOT
WRITE IN THIS
SECTION.

CODE

1. Position Held:

- (1) Administrator
- (2) Educator
- (3) Researcher
- (4) Staff/Clinician

(5) Other (please specify) _____

2. Predominant Clinical Area (e.g., Medicine, Surgery, Cardiology, etc.):

3. Total **Years Experience** in Health Care:

4. Total **Years with Current Employer (Board)**:

5. Total **Years in Current Position**:

6. Nature of Employment:

- (1) Full-Time (permanent)
- (2) Full-Time (temporary)
- (3) Part-Time (permanent)
- (4) Part-Time (temporary)
- (5) Casual
- (6) Not Employed

7. Region of Workplace:

(1) Health Care Corporation of St. John=s

(2) Avalon

(3) Peninsulas

(4) Central East

(5) Central West

(6) Western

(7) Grenfell

(7) Labrador

8. Educational Background: (Circle one only, i.e, highest level)

(1) Diploma/Certificate

(2) Baccalaureate

(3) Masters

(4) Doctorate

(5) Other (please specify) _____

9. Gender:

(1) Male

(2) Female

10. Age in years: _____

Part II: Organizational Commitment

In this section of the questionnaire we are interested in how you would rate your commitment to your present employer. It is important that you respond to all items. Please **circle the number** that best describes your present position.

Use the following scale to rate your degree of agreement/disagreement with each statement:

	1	2	3	4	5	6	7
	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Disagree or Agree	Slightly Agree	Moderately Agree	Strongly Agree
				Strongly Disagree			Strongly Agree
11. I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.	1	2	3	4	5	6	7
12. I talk up this organization to my friends as a great organization to work for.	1	2	3	4	5	6	7
13. I would accept almost any type of job assignment in order to keep working for this organization.	1	2	3	4	5	6	7
14. I find that my values and the organization's values are very similar.	1	2	3	4	5	6	7
15. I am proud to tell others that I am part of this organization.	1	2	3	4	5	6	7
16. This organization really inspires the very best in me in the way of job performance.	1	2	3	4	5	6	7
17. I am extremely glad that I chose this organization to work for over others I was considering at the time I joined.	1	2	3	4	5	6	7
18. I really care about the fate of this organization.	1	2	3	4	5	6	7
19. For me this is the best of all possible organizations for which to work.	1	2	3	4	5	6	7

Part III: Trust In Employer/Intentions

Use the following scales to rate how you feel about your organization. Again it is important that you respond to all items. Please **circle the number** that best captures your position.

20. Overall, then, **how well** has your organization fulfilled the commitments that were made to you when you were hired?

1	2	3	4	5
Very Poorly Fulfilled	Poorly Fulfilled	Neutral	Fulfilled	Very Well Fulfilled

21. Overall, then, **how often** has your employer failed to meet the commitments that were made to you when you were hired?

1	2	3	4	5
Very Infrequently	Infrequently	Neutral	Frequently	Very Frequently

22. Considering all of your job factors together, how does the amount of rewards that you actually receive from your organization **compare** to the amount of rewards that your organization promised you?

1	2	3	4	5
Much Less Than Promised	Less Than Promised	About the Same As Promised	More Than Promised	Much More Than Promised

23. Overall, how does the amount of rewards (both financial and non-financial) you receive from your organization **compare** to the amount that you think it should provide? The amount my organization supplies is:

1	2	3	4	5
Much Less Than It Should	Less Than It Should	About As Much As It Should	More Than It Should	Much More Than It Should

24. Considering the impact of downsizing/restructuring on the health care system, how likely is it that you will stay with your current employer?

1	2	3	4	5
Very Unlikely	Unlikely	Unsure	Likely	Very Likely

25. I would consider leaving my present position if another employment opportunity presented itself?
- | | | | | |
|------------------|----------|--------|--------|----------------|
| 1 | 2 | 3 | 4 | 5 |
| Very
Unlikely | Unlikely | Unsure | Likely | Very
Likely |
26. How often have you put any serious effort into searching for a new job (e.g. checking newspapers or ads, making calls, sending resumes, etc.)?
- | | | | | |
|----------------------|--------------|---------|------------|--------------------|
| 1 | 2 | 3 | 4 | 5 |
| Very
Infrequently | Infrequently | Neutral | Frequently | Very
Frequently |

Part IV: Satisfaction

In this section of the questionnaire we are interested in your overall satisfaction with your job as well as select areas related to managerial restructuring within your organization. Again it is important that you respond to all items. Please **circle the number** that best describes your present position.

Use the following scale to rate your degree of agreement/disagreement with each statement:

1	2	3	4	5	6	7
Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree

General Satisfaction

- | | | | | | | | |
|--|----------------------|---|---|---|---|---|-------------------|
| | Strongly
Disagree | | | | | | Strongly
Agree |
| 27. Generally speaking, I am very satisfied with this job. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28. I am generally satisfied with the kind of work I do in this job. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29. Most people in this job are very satisfied with the job. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Use the following scale to rate your degree of agreement/disagreement with each statement:

	1	2	3	4	5	6
	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
				Strongly Disagree		Strongly Agree
Collaborative Relations						
31. I am generally satisfied with the visibility and accessibility of management personnel since restructuring.	1	2	3	4	5	6
32. I am generally satisfied with the degree to which management seeks input on professional care standards.	1	2	3	4	5	6
33. I am generally satisfied with the amount of information/in-service provided to help prepare me for changes related to restructuring (e.g. job responsibilities, transfer of functions, etc.)	1	2	3	4	5	6
34. I am generally satisfied with the interdisciplinary approach to patient/client care in my organization.	1	2	3	4	5	6
35. I am generally satisfied with the amount of time spent dealing with interdisciplinary conflicts.	1	2	3	4	5	6

Part V: Health Care Reform

In this section of the questionnaire we are interested in knowing how you view the changes that have occurred in the health care system. The content of the statements include overall impressions about the impact of health care reforms, as well as some specifics with regard to quality and safety concerns, workplace conditions, and professional issues. It is important that you respond to all items. Please circle the number that best describes your present position.

Use the following scale to rate your degree of agreement/disagreement with each statement:

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

	1	2	3	4	5	6
				Strongly Disagree		Strongly Agree
37. I understand the importance of downsizing and restructuring the health care system in this province.						
38. Health care reforms have not placed sufficient emphasis on maintaining quality care standards.	1	2	3	4	5	6
39. Patients/clients have reasonable access to health care services despite downsizing and managerial restructuring efforts.	1	2	3	4	5	6
40. The movement towards community based care is a positive step in helping facilitate greater patient/client accountability and responsibility.	1	2	3	4	5	6
41. Changes in the health care system have given health care providers the opportunity to gain greater control over their practice.	1	2	3	4	5	6
42. Supplies/resources are often not adequate to ensure patient/client comfort.	1	2	3	4	5	6
43. Despite personnel reductions, it is still possible to meet patients=/clients= basic care needs.	1	2	3	4	5	6

1 2 3 4 5 6

	1	2	3	4	5	6
	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
				Strongly Disagree		Strongly Agree
44. Because of overwhelming workload demands, it is often necessary to lower care standards.	1	2	3	4	5	6
45. I am confident that patients/clients and family members receive adequate teaching and counselling in preparation for discharge.	1	2	3	4	5	6
46. Due to increasing acuity levels, it is not possible to adequately assess or meet patients=/clients= emotional/psychosocial needs.	1	2	3	4	5	6
47. I am confident that in my agency procedures are being performed in a safe and competent manner.	1	2	3	4	5	6
48. Because of inadequate inservice education on new policies/procedures, I believe patients/clients are being placed at risk.	1	2	3	4	5	6
49. Patients/clients are more susceptible to potential harm from delays or errors due to increased demands and stressors in the work place.	1	2	3	4	5	6
50. Most of the time we have the necessary physical resources (e.g. equipment, supplies, facilities) to provide safe care.	1	2	3	4	5	6
51. Most of the time we have the necessary human resources (i.e. nurses, physicians, allied health professionals, and support staff) to provide safe care.	1	2	3	4	5	6
52. Adequate health care resources are not always available in the community for patients/clients upon discharge.	1	2	3	4	5	6

	1	2	3	4	5	6
	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
				Strongly Disagree		Strongly Agree
53. At my workplace, staff meet regularly with management to discuss workplace concerns.	1	2	3	4	5	6
54. At my workplace, staff meet regularly with management to identify ways to resolve problems and build on strengths.	1	2	3	4	5	6
55. At my workplace, opportunities are provided to keep current with latest developments through reading and attending workshops, inservices, and teleconference sessions.	1	2	3	4	5	6
56. Because I feel powerless to change things where I work, it is difficult to be motivated to act as an advocate for patients/clients.	1	2	3	4	5	6
57. Due to increased acuity and shortened lengths of stay, it is not always possible to meet professional care standards.	1	2	3	4	5	6
58. As a consequence of recent changes in the health care system, I can appreciate the challenges facing my profession.	1	2	3	4	5	6
59. As a consequence of recent changes in the health care system, I feel empowered to be an active participant in affirming an important future role for my profession.	1	2	3	4	5	6
60. Because I work in a supportive environment, I am able to give that >extra= effort when my job demands it.	1	2	3	4	5	6
61. Due to the heavy workload in my workplace, I feel really frustrated with the reduced level of care that is provided.	1	2	3	4	5	6

	1	2	3	4	5	6
	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
				Strongly Disagree		Strongly Agree
62. Although I strive to give/ensure consistent and competent care, I rarely receive appreciation or recognition for what I do.	1	2	3	4	5	6
63. Increased demands and stress in the workplace have led to unpleasant working relationships with co-workers and other health care providers.	1	2	3	4	5	6
64. In the aftermath of restructuring efforts, I find that my time management skills have become more important.	1	2	3	4	5	6
65. Increased demands and stress in the workplace have engendered a sense of disillusionment and low morale.	1	2	3	4	5	6
66. Since restructuring of the health care system, I find my job more satisfying and challenging.	1	2	3	4	5	6

January 12, 2005

Appendix C

Knowledge Transfer Activities

Knowledge transfer

A major focus of the program of research and my subsequent doctoral research was the timely dissemination of the respective studies findings and transfer of knowledge to the key stakeholders, decision-makers and policy makers to assist in research informed policy making. The results were disseminated to the intended audiences through the use of direct written (executive summaries and reports) and verbal communication with the Department of Health & Community Services, Regional Health Boards, and professional organizations, as well as through video-teleconferences. The dissemination process also included regional forums comprised of representatives and stakeholders (health care system managers and senior administrators, senior executive government representatives and health policy makers, physicians and employees, professional associations and unions) to debate the methods, and discuss possible knowledge utilization that might arise as a result of the respective studies' findings. A number of media interviews were also conducted by the senior investigators throughout the larger program of research. Finally, traditional academic methods (publication in the form of a journal supplement and presentations at national and international conferences) were also utilized as a medium for knowledge transfer. Dissemination activities continued throughout the course of my doctoral studies. A detailed overview of the knowledge transfer activities related specifically to health care providers over the course of the program of research and during my doctoral research follows.

PUBLISHED REFEREED PAPERS

Kent, G., Power, L., **Gregory, D.**, Barrett, B.J., MacCallum, G.C., Stone, E., & Parfrey, P.S. (2004). The Need for Coronary Artery Bypass Grafting in Newfoundland and Labrador: The Impact of Increased Demand. *Can J Cardiol* 2004; 20 (4): 399-404.

ABSTRACTS

Gregory DM. (2004, September). Acute Care Restructuring in Newfoundland and Labrador, Canada: Impact of Hospital Aggregation on Health Provider Outcomes. Reforming Health Systems: Analysis and Evidence. 6th International Conference: Strategic Issues in Health Care Management. St. Andrew's University, Scotland. [Paper Presentation].

Twells, L, Doyle M, **Gregory, D**, Barrett B, Parfrey, P. Acute Care Restructuring in Newfoundland and Labrador, Canada: The History and Impact on Costs. (2004, September). Reforming Health Systems: Analysis and Evidence. 6th International Conference: Strategic Issues in Health Care Management. St. Andrew's University, Scotland. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.

Curtis, BM, Barrett, BJ, Batstone A, **Gregory, D**, & Parfrey P. (2003, November). Impact of ongoing assurance and continuous quality improvements in nephrology. American Society of Nephrology, San Diego, California.

Curtis, BM, Barrett, BJ, Batstone A, **Gregory, D**, & Parfrey P. (2003, May). Impact of ongoing assurance and continuous quality improvements in nephrology. Canadian Society of Nephrology, St. John's, NL.

PEER-REVIEWED RESEARCH REPORTS

Barrett B, **Gregory D**, Way C, Kent G, McDonald J, Batstone A, Doyle M, Curtis B, Twells L, Negrijn C, Jelinski S, Kraft S, O'Reilly DO, Smith S, Parfrey PS. (March, 2003). *The Impact of Restructuring on Acute Care Hospitals in Newfoundland*. A report submitted to the Canadian Health Services Research Foundation, Ottawa, ON.

NON-PEERED REVIEWED RESEARCH REPORTS SUBMITTED TO THE CANADIAN HEALTH SERVICES RESEARCH FOUNDATION (2001) (abbreviated version)

Gregory DM, Negrijn C, Way C, Parfrey P. (September, 2001). A comparison of patient's perceptions of their hospital stay in two regions in Newfoundland and Labrador.

Gregory DM, Negrijn C, Parfrey P. (June, 2001). Patient's perceptions of acute care hospitals in Newfoundland and Labrador. Final Report Avalon Health Care Institutions Board.

Gregory, DM, Negrijn C, Way C, Parfrey P. (January, 2001). Newfoundland and Labrador's Chief Executive Officer's and Board Members' perceptions of regionalization and program based management.

RESEARCH REPORTS OR REPORTS PRODUCED FOR GOVERNMENT (2000-2004)

1. **Gregory, D.M., Way, C., Dodd, C., Audas, R., & Parfrey, P.** (November, 2004). *Employees Perceptions of Factors Influencing Absence from Work: Health Care Corporation of St. John's.* A report submitted to the Health Care Corporation of St. John's, St. John's, NL, Canada. Funded by the Newfoundland and Labrador Centre for Applied Health Research.
2. **Gregory, D.M., Way, C., & Parfrey, P.** (April 2003). *Patient's Perceptions of their Hospital Stay: A longitudinal study of two health regions in Newfoundland and Labrador.* A report submitted to the Department of Health and Community Services, St. John's, NL, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.

3. **Gregory, D.M.,** Way, C., Barrett, B., & Parfrey, P. (December 2002). Health Care Restructuring in the Acute Care Sector: Implications for Physicians' Attitudes. A report submitted to the Newfoundland and Labrador Medical Association, St. John's, NL, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.
4. **Gregory, D.M.,** Way, C., Barrett, B., & Parfrey, P. (November 2002). Health Care Restructuring in the Acute Care Sector: Implications for Registered Nurses' Attitudes. A report submitted to the Association of Registered Nurses of Newfoundland and Labrador, St. John's, NL, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.
5. **Gregory, D.M.,** Way, C., Barrett, B., & Parfrey, P. (November 2002). Health Care Restructuring in the Acute Care Sector: Implications for Management Personnel Attitudes. A report submitted to the Department of Health and Community Services, Government of Newfoundland and Labrador, St. John's, NL, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.

6. **Gregory, D.M.,** Way, C., Barrett, B., & Parfrey, P. (November 2002). Health Care Restructuring in the Acute Care Sector: Implications for Lab/X-ray Workers' Attitudes. A report submitted to the Newfoundland and Labrador Association of Public Employees, St. John's, NL, Canada. Funded by the Canadian Health Services Research Foundation, the Health care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.
7. **Gregory, D.M.,** Way, C., Barrett, B., & Parfrey, P. (November 2002). Health Care Restructuring in the Acute Care Sector: Implications for Allied Health Professionals' Attitudes. A report submitted to the Association of Allied Health Professionals, St. John's, NL, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.
8. **Gregory, D.M.,** Way, C., Barrett, B., & Parfrey, P. (September 2002). Health Care Restructuring in the Acute Care Sector: Implications for Hospital Support Workers' Attitudes. A report submitted to the Newfoundland and Labrador Association of Public Employees, St. John's, NL, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.

9. **Gregory, D.M.,** Way, C., Barrett, B., & Parfrey, P. (September 2002). Health Care Restructuring in the Acute Care Sector: Implications for Licensed Practical Nurses' Attitudes. A report submitted to the Council of Licensed Practical Nurses, St. John's, NL, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.
10. **Gregory, D.M.,** Negrijn, C., Way, C., & Parfrey, P. (September, 2001). *A Comparison of Patient's Perceptions of their Hospital Stay in Two Regions in Newfoundland and Labrador.* A report submitted to the Canadian Health Services Research Foundation, Ottawa, Ontario, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.
11. **Gregory, D.M.,** Negrijn, C., & Parfrey, P. (June, 2001). Patient's Perceptions of Acute care Hospitals in Newfoundland and Labrador. Final Report Avalon Health care Institutions Board. A report submitted to the Canadian Health Services Research Foundation, Ottawa, Ontario, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.

12. **Gregory, D.M.,** Negrijn, C., Way, C., & Parfrey, P. (January, 2001). Newfoundland and Labrador's Chief Executive Officer's and Board Members' Perceptions of Regionalization and Program Based Management. A report submitted to the Canadian Health Services Research Foundation, Ottawa, Ontario, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.
13. Way, C., Baker, N., Chubbs, D., Davis, J., **Gregory, D.M.,** Barrett, B., & Parfrey, P. (January, 2001). The Impact of Health Care Reforms on Registered Nurses: A report submitted to the Canadian Health Services Research Foundation, Ottawa, Ontario, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.
14. **Gregory, D.M.,** Way, C., Barrett, B., & Parfrey, P. (January, 2001). The Impact of Health Care Reforms: Physicians Perceptions. A report submitted to the Canadian Health Services Research Foundation, Ottawa, Ontario, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.
15. **Gregory, D.M.,** Negrijn, C., Budgell, J., Kent, G., Browne, L., Parsons, N., Way, C., Smith, S., & Parfrey, P. (December, 2000). Patient's Perceptions of

Acute Care Hospitals in Newfoundland and Labrador. Summary of Findings: Health Care Corporation of St. John's. A report submitted to the Canadian Health Services Research Foundation, Ottawa, Ontario, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.

16. **Gregory, D.M.**, Negrijn, C., Budgell, J., Browne, L., Way, C., & Parfrey, P. (November, 2000). Patient's Perceptions of Acute Care Hospitals in Newfoundland and Labrador. Final Report Central Newfoundland Regional Health Centre. A report submitted to the Canadian Health Services Research Foundation, Ottawa, Ontario, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.
17. Way, C., Davis, J., **Gregory, D.M.**, Barrett, B., & Parfrey, P. (November, 2000). The Impact of Health Care Reforms on Management Personnel. A report submitted to the Canadian Health Services Research Foundation, Ottawa, Ontario, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.
18. Way, C., **Gregory, D.M.**, Pond, M., Barrett, B., & Parfrey, P. (October, 2000). The Impact of Health Care Reforms on Licensed Practical Nurses in

the Acute Care Setting. A report submitted to the Canadian Health Services Research Foundation, Ottawa, Ontario, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.

19. Way, C., Pond, M., **Gregory, D.M.**, Barrett, B., & Parfrey, P. (October, 2000). The Impact of Health Care Reforms on Allied Health Professionals. A report submitted to the Canadian Health Services Research Foundation, Ottawa, Ontario, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.
20. **Gregory, D.M.**, Negrijn, C., Budgell, J., Browne, L., Way, C., & Parfrey, P. (October, 2000). Patient's Perceptions of Acute Care Hospitals in Newfoundland and Labrador. Summary of Preliminary Findings: Central Newfoundland Regional Health Centre. A report submitted to the Canadian Health Services Research Foundation, Ottawa, Ontario, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.
21. **Gregory, D.M.**, Way, C., Barrett, B., & Parfrey, P. (October, 2000). The Impact of Health Care Reforms on Support Staff in the Acute Care Setting. A report submitted to the Canadian Health Services Research Foundation,

Ottawa, Ontario, Canada. Funded by the Canadian Health Services Research Foundation, the Health Care Corporation of St. John's, Department of Health and Community Services, Government of Newfoundland and Labrador.

PRESENTATIONS (ORAL AND POSTER) (1999-2005)

Gregory DM. (2005, June). Acute Care Restructuring in Newfoundland and Labrador, Canada. - The Next Phase of Reform and Evaluation. Health Systems Changes Workshop. Newfoundland and Labrador Center for Applied Health Research. Deputy Minister of Health, CEOs of the four Regional Integrated Health Authorities, senior executive managers, policy makers, decision-makers, invited speakers, and representatives of provincial professional associations/unions, Airport Inn, St. John's, NL. [Oral Presentation].

Gregory DM. (2005, June). Employees' perceptions of factors influencing absence from work: Health Care Corporation of St. John's. Senior Management, Medicine Program, Health Sciences Centre, St. John's, NL. [Oral Presentation].

Gregory DM. (2005, March). Employees' perceptions of factors influencing absence from work: Health Care Corporation of St. John's. Executive Management, Senior management, Representatives From the NLNU, AAHP, Management Support Group, Management Personnel, Main Auditorium, Health Sciences Centre, St. John's, NL. [Paper Presentation].

Gregory DM. (2005, February). Employees' perceptions of factors influencing absence from work: Health Care Corporation of St. John's. Employee Wellness Advisory Committee, Health Care Corporation of St. John's Corporate Offices, St. John's, NL. [Paper Presentation].

Gregory DM. (2004, December). Acute Care Restructuring in Newfoundland and Labrador, Canada: Peninsulas Health Care Corporation, All Management Meeting, Clarenville, NL. [Paper Presentation].

Gregory DM. (2004, December). Acute Care Restructuring in Newfoundland and Labrador, Canada: Faculty of Medicine, Health Policy 6288. Course Facilitator – Dr. Doreen Neville, St. John's, NL. [Paper Presentation].

Gregory DM. (2004, October). Acute Care Restructuring in Newfoundland and Labrador, Canada: Impact of Hospital Aggregation on Health Provider Outcomes. Annual Clinical Epidemiology Day, Department of Health and Community Services, Government of Newfoundland and Labrador, St. John's, NL. [Oral Presentation].

Gregory DM. (2004, October). Acute Care Restructuring in Newfoundland and Labrador, Canada: Impact of Hospital Aggregation on Health Provider Outcomes.

Faculty of Medicine-Scientific Days. Faculty of Medicine, Memorial University of Newfoundland, St. John's, NL. [Paper Presentation].

Gregory DM. (2004, September). Acute Care Restructuring in Newfoundland and Labrador, Canada: Impact of Hospital Aggregation on Health Provider Outcomes. Reforming Health Systems: Analysis and Evidence. 6th International Conference: Strategic Issues in Health Care Management. St. Andrew's University, Scotland. [Paper Presentation].

Gregory DM. (2004, June). Employees Perceptions of Factors Influencing Absence from Work (Preliminary Findings): Health Care Corporation of St. John's. St. John's, NL. [Paper Presentation].

Gregory DM. (2004, February). An Evaluation of Acute Care Restructuring in Newfoundland. Canadian Centre for Analysis of Regionalization and Health. Vancouver, British Columbia. [Paper Presentation].

Curtis, BM, Barrett, BJ, Batstone A, **Gregory, D,** & Parfrey P. (2003, November). Impact of ongoing assurance and continuous quality improvements in nephrology. American Society of Nephrology, San Diego, California. [Poster presentation].

Curtis, BM, Barrett, BJ, Batstone A, **Gregory, D**, & Parfrey P. (2003, May).
Impact of ongoing assurance and continuous quality improvements in nephrology.
Canadian Society of Nephrology, St. John's, NL. [Poster presentation].

Gregory DM, Parfrey, P. (2003, June). The Impact of Restructuring on Acute
Care Hospitals. Central West Regional Health Board, Grand Falls-Windsor, NL.
[Paper Presentation].

Gregory DM, Parfrey, P. (2003, June). The Impact of Restructuring on Acute
Care Hospitals. Western Memorial Regional Health Board, Corner Brook, NL.
[Paper Presentation].

Gregory DM, Barrett B., Parfrey, P. (2003, June). The Impact of Restructuring
on Acute Care Hospitals. Grand Rounds, Faculty of Medicine, Memorial
University of Newfoundland, St. John's, NL. [Paper Presentation].

Parfrey, P. (May, 2003). Evaluation of Acute Care Hospital Restructuring in
Newfoundland and Labrador: Implications for the Future. Dietitians of Canada
Conference – Destination-2015. St. John's, NL. [Oral Presentation].

Parfrey, P. (March, 2003). Evaluation of Acute Care Hospital Restructuring in
Newfoundland and Labrador: Findings related to the overall three year program

of research. A presentation to the Board of Directors, Health Care Corporation of St. John's, St. John's, NL. [Oral Presentation].

Parfrey, P. (February, 2003). Health Care Restructuring in the Acute Care Setting: Final Report. A presentation to the Department of Health and Community Services, Government of Newfoundland and Labrador, St. John's, NL. [Oral Presentation].

Gregory DM. (2003, February). The Impact of Restructuring on in Acute Care Hospitals-Quality of Care- Community Acquired Pneumonia and Stroke Chart Audits. Regional Forum. Delta Hotel, St. John's, NL. [Oral Presentation].

Gregory DM. (2003, February). The Impact of Restructuring on in Acute Care Hospitals-Patient Satisfaction. Regional Forum. Delta Hotel, St. John's, NL. [Oral Presentation].

Gregory DM. (2003, February). The Impact of Restructuring on in Acute Care Hospitals-Quality of Care from the Perspective of Health Care Providers. Regional Forum. Delta Hotel, St. John's, NL. [Presentation].

Gregory DM. & Way, C. (2003, February). The Impact of Restructuring on in Acute Care Hospitals-Implications for Health Care Providers. Regional Forum. Delta Hotel, St. John's, NL. [Presentation].

Gregory DM. (2002, November). Factors Influencing Turnover and Absence from Work at the HCCSJ: A Proposed Study. Newfoundland and Labrador Association of Public and Private Employees, NAPE Office, St. John's, NL. [Presentation].

Gregory DM. (2002, November). Factors Influencing Turnover and Absence from Work at the HCCSJ: A Proposed Study. Newfoundland and Labrador Nurses' Union (NLNU), NLNU Boardroom, St. John's, NL. [Presentation].

Gregory DM. (2002, November). Factors Influencing Turnover and Absence from Work at the HCCSJ: A Proposed Study. Association of Allied Health Professionals (AAHP), AAHP Boardroom, St. John's, NL. [Presentation].

Gregory DM. (2002, February). Absenteeism: A Proposed Study. Health Care Corporation of St. John's Employee Wellness Committee, St. John's, NL. [Presentation].

Way, C. & **Gregory DM.** (2001, March). The Impact of Health Care Reforms on Nurses' Attitudes. Association of Registered Nurses of Newfoundland and Labrador, St. John's, NF. [Teleconference Presentation].

Barrett, B. (2000, November). The Impact of Restructuring on Acute Care Hospitals in Newfoundland and Labrador. A presentation to the Association of Registered Nurses of Newfoundland and Labrador Advisory Committee on Nursing Administration. St. John's, NF. [Oral Presentation].

Smith, S. (2000, November). Patient Satisfaction: Health Care Corporation of St. John's. A presentation to the Corporate Quality Initiatives Team of the Health Care Corporation of St. John's. St. John's, NL. [Oral Presentation].

Parfrey, P. (2000, October). The Impact of Restructuring on Acute Care Hospitals in Newfoundland and Labrador. Health Boards Association Conference. St. John's, NL. [Oral Presentation].

Way, C. (2000, October). The Impact of Health Care Reforms on Allied Health Professionals. Annual General Meeting of the Association of Allied Health Professionals, St. John's, NF. [Oral Presentation].

Gregory, D. & Parfrey, P.S. (2000, October). The Impact of Health Care Reforms on Hospital Support Staff. A presentation to the President and representatives of

the Newfoundland and Labrador Association of Public and Private Employees, senior management of the Health Care Corporation of St. John's and the Department of Health and Community Services, Government of Newfoundland and Labrador. St. John's, NF. [Oral Presentation].

Gregory DM. (2000, September). Health Care Restructuring: Implications for Employees. 17th International Conference of the International Society for Quality in Health Care. Dublin, Ireland. [Poster Presentation].

Way, C. & Parfrey, P.S. (2000, June). Employee Attitudes: Licensed Practical Nurses. A presentation to the Executive Director of the Council of Licensed Practical Nurses, regional health boards, senior management, licensed practical nurses, Department of Health and Community Services. St. John's, NF. [Teleconference Presentation].

Gregory DM. (2000, June). A Review of the Impact of Restructuring on Acute Care Hospitals. A presentation to senior management of the Central West Health Board, Grand Falls, NF. [Oral Presentation].

Way, C. & **Gregory DM.** (2000, May). The Impact of Health Care Reforms on Nurses' Attitudes. Annual General Meeting of the Association of Registered Nurses of Newfoundland and Labrador, St. John's, NF. [Oral Presentation].

Way, C. & Barrett, B. (2000, May). The Impact of Health Care Reforms on Employee Attitudes: Allied Health Professionals. A presentation to the executive of the Association of Allied Health Professionals. St. John's, NF. [Presentation].

Parfrey, P.S., Barrett B., **Gregory, D.**, Way, C., McDonald, J., Kent, G., Doyle, M. Batstone, A. (2000, March). Annual Meeting – Dissemination of Findings and status report of all projects funded by the Department of Health and Community Services. A presentation to the Deputy Minister, Assistant Deputy Ministers, Finance/Policy and Planning Divisions, Prescription Drug Program. [Oral Presentations]

Way, C. & **Gregory DM.** (2000, May). The Impact of Health Care Reforms on Nurses' Attitudes. St. John's, NF. [Presentation].

Gregory DM. (2000, March). The Impact of Restructuring on Acute Care Hospitals in Newfoundland and Labrador. Department of Health and Community Services, Government of Newfoundland and Labrador, St. John's, NF. [Presentation].

Way, C. (1999, December). Employee Attitudes: Registered Nurses. A presentation to the Association of Registered Nurses of Newfoundland and

Labrador Advisory Committee on Nursing Administration. St. John's, NF. [Oral Presentation].

Way, C. & Parfrey, P.S. (1999, November). Employee Attitudes: Registered Nurses. A presentation to the regional health boards, senior management, registered nurses, Association of Registered Nurses of Newfoundland and Labrador, Department of Health and Community Services. St. John's, NF. [Video-teleconference Presentation].

Gregory DM. (1999, March). The Impact of Restructuring on Acute Care Hospitals in Newfoundland and Labrador. Department of Health and Community Services, Government of Newfoundland and Labrador, St. John's, NF. [Presentation]

Appendix D

Acute care restructuring in Newfoundland and Labrador: the history and impact on expenditure

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Objectives: To document the history of regionalization and its effects on the Newfoundland and Labrador acute care health system, and to describe changes in acute care expenditure in the St. John's region where hospital redesign, closure and aggregation occurred in relation to other regions not exposed to aggregation.

Methods. Interviews were conducted with senior health officials. Transcripts and other reports were reviewed. Financial data were abstracted from audited general ledger statements received from the Ministry of Health.

Results: Regionalization achieved its objectives of hospital aggregation in St. John's. The average number of full-time equivalent employees increased slightly by 2% (5304 - 5416).

In some regions, integration of services was delayed because of conflict and resistance to change. There was some disparity between the Provincial Government's objectives for cost control and the CEOs' perceptions of economies of scale. Between 1995/96 and 2002/03, total expenditures for the St. John's region and the other five regional hospitals increased by 46% and 54%, respectively; total personal income of the population and government revenues increased by only 18% and 16%, respectively.

Conclusions: Regionalization in Newfoundland and Labrador facilitated aggregation of hospitals, but did not control the number of front-line workers and, consequently, total acute care expenditure. Expenditure increased significantly between 1995 and 2002, at a rate which exceeded the increase in government revenues. The government's ability to pay for acute care will not be achieved unless employee costs are controlled or provincial income increases.

Introduction

Through the 1990s, the health care system in Newfoundland and Labrador (NL), Canada, experienced substantial reform,¹ driven by escalating hospital costs, provincial fiscal limitations, and the challenges of delivering care to a small population in a vast geographic area.² Regionalization transferred the level of power and authority from multiple hospital boards responsible to the Department of Health to a substantially smaller number of regional health boards.³⁻⁵

The primary goals of regionalization were the containment of increasing costs of hospital care, increased efficiencies and effectiveness, integrated care, and the provision of a system that was more responsive to the needs of the local population.^{4,5}

Institutional, community and integrated regional health boards (appointed and accountable to the Minister of Health and Community Services) were given direct responsibility for the provision and delivery of health services in their regions. These boards were created at a time when the total provincial population was 567,442 according to the NL Economics and Statistics Branch. The St. John's regional board referred to as Health Care Corporation St. John's (HCCSJ), served a predominantly urban population of 193,355, was originally responsible for nine acute care facilities, and also provided tertiary care for the province. Its mandate included aggregation of hospitals, a longstanding and highly charged political issue. The other regional boards served a

predominantly rural population, and were not exposed to the problems associated with aggregation of hospitals.

The objectives of this article are: to document the history of regionalization and its effects on the NL acute care health system; to describe expenditure changes in both the St. John's region where hospital redesign, closure and aggregation occurred, and in other regions not exposed to aggregation, and to analyze the government's capacity to pay for acute health care during the study period. In subsequent papers, more data are provided that will further support policy conclusions in this paper. We provide the historical context of health system reform, during and after regionalization of the health system, both inside and outside St. John's. We discuss the disparity between the intended and perceived objectives of regionalization between the provincial government and the Chief Executive Officers (CEOs) of the regions. In addition, we describe annual expenditures of the HCCSJ and five rural hospitals, from 1995/96 to 2002/03. As a measure of the Government of NL's continued ability to fund acute care services, changes in these hospital expenditures are compared with changes in NL's nominal and real gross domestic product (GDP), total personal income and total provincial government operating revenues over this time period.

Methods

Interviews were conducted by the lead investigator (PSP) with several former deputy ministers of health (the most senior officials in the Provincial Ministry of Health) who were involved in restructuring, and the CEOs of the newly formed health boards. Each interview was conducted face-to-face, individually, and lasted for several hours. The interviews were taped and subsequently transcribed. Researchers reviewed the transcripts and organized the responses by themes. Other documents (e.g., annual reports, ministry documents, newspaper articles, published articles, and working papers) were reviewed to document changes in the province's health care system. Financial data for the Health Care Corporation of St. John's were abstracted from audited general ledger statements. The Department of Health and Community Services provided similar condensed financial information for the other regions. Changes in acute care delivery in St. John's and in regions outside the capital region were documented and analysed. Gross Domestic Product (GDP), total personal income and total provincial government revenues were obtained from the Department of Finance, Economics and Statistics Branch.

History

Provincial

The process of health care restructuring started in the early 1980s when the NL Government sponsored a *Royal Commission on Hospital and Nursing Home Costs*.⁶ This

commission put forward over 200 recommendations that supported hospital closures and the amalgamation of services across the province. Although major reform did not occur during this period, the province did experience minor changes with the closure of cottage hospitals throughout rural NL and the transformation of many of these hospitals into health clinics.⁷ In 1990, a national *Health Ministers Conference* focused on the potential for regionalization to help deal with escalating hospital costs. This discussion took place in the context of federal cutbacks to health care and social services' funding, a reduction of Federal Transfer Payments from the federal government to the provinces, and escalating acute care costs driven by new technologies, drugs and patient demand. It was in this climate that restructuring of the health system in Newfoundland was initiated.

In 1992, the provincial government commissioned a report to review the number of hospital boards in Newfoundland and to provide recommendations on how regionalization should unfold. The report, released in 1993, supported the reduction in boards from approximately 60 to six or seven, each with specific responsibility for defined geographical areas⁸ (geographical rather than functional regionalization) (Figure.1). The report supported the establishment of institutional health boards (hospital services, long-term care, and rehabilitation services), community health boards and integrated boards (acute, long-term and community care). The stated objectives of regionalization in this report included: improving service quality; effective and efficient use of scarce human and fiscal resources; economies of scale; enhancing co-ordination of

acute and long-term care; and providing the opportunity for publicly appointed trustees to provide meaningful input into regional boards.

The report commissioned by the NL government was one of several that had been published in Canada in the previous 20 years, recommending regionalization of provincial health systems.^{6, 9, 10} The key recommendations outlined in the report were accepted. Regionalization of the health system was announced in 1993 and completed in 1996. The final product was the establishment of the 14 regional boards: six institutional boards; four community health boards; two integrated boards; one nursing home board; and one provincial cancer treatment and research foundation based in St. John's (Table 1). The institutional boards were responsible for hospital and long-term residential care for people 65 years and older, and persons suffering from chronic debilitating diseases (except in St. John's, where a separate nursing home board was established). Community health boards were mandated to coordinate the organization, management and delivery of community-based services and to provide health promotion, protection services, home care, home support, continuing care, mental health and addiction services, as well as child welfare, family rehabilitation and youth correction services. Regional integrated boards in the north and in Labrador provided both institutional, and health and community services. In St. John's, both the Health Care Corporation and the Cancer Treatment and Research Foundation were given a tertiary care mandate for the entire province.

Table 1
Type of Regional Health Board in NL following restructuring

Type of Board /services provided	Name of board	Population served (2003 numbers)
Institutions Boards	Health Care Corporation St. John's (acute referral centre for province)	193,355
	Avalon Institutions Board	50,748
	Peninsulas Healthcare Board	51,256
	Central East Health Care Institutions Board	41,012
	Central West Health Care Corporation	60,370
	Western Health Care Corporation	82,372
Health & Community Services Boards	Health & Community Services St. John's	183,992
	Health & Community Services Eastern	111,368
	Health & Community Services Central	101,382
	Health & Community Services Western	82,372
Integrated Regional Health Services <ul style="list-style-type: none"> ▪ Institutions, community and long-term care 	Grenfell Regional Health Services	15,893
	Health Labrador Corporation	24,557
Long-term care board	St. John's Nursing Home Board	40 % of nursing home beds 1050 long-term care beds in St. John's area
Provincial Tertiary Cancer Care	Cancer Treatment and Research Foundation	Province-wide

Source: NL Provincial Government: Economics and Statistics Branch

<http://www.economics.gov.nf.ca/population/byage-HIB.asp>

<http://www.economics.gov.nf.ca/population/byage-HCS.asp>

Health Care Corporation of St. John's

In the early 1980s, the provincial government issued a mandate to the *St. John's Hospital Council* to plan the restructuring of the hospitals in the St. John's region. The option accepted by the Minister included closing the paediatric hospital and rehabilitation unit, building a new children's hospital combined with a rehabilitation unit at the existing

main adult hospital site, as well as closing one of three adult hospitals. In St. John's, nine acute care facilities were consolidated in 1995 under the Health Care Corporation of St. John's, the largest region in terms of population in the province (196,000 in 2000- 38% of total provincial population). Administration of institutional long-term care was kept separate, unlike in regions outside St. John's.

The HCCSJ developed and applied a strategic plan focused on organizational, clinical and site integration. Efforts were made to communicate the plan objectives to staff, unions, and the public. Organizational administrative functions were integrated in the first year. In 1996, program management across all the HCCSJ's hospitals was introduced to facilitate integration of clinical services across sites in anticipation of site closures (see the paper by Davis in this issue, which outlines the change strategies used to implement the strategic plan).¹¹

Consolidation of institutions within the HCCSJ resulted in a 50% reduction in all levels of management and in support staff. The adult acute care site closed in June 2000 and the children's hospital moved to its new site in 2001, by which time acute care had been reduced from nine to six sites. Between 1995 and 2002 in St. John's, the average number of full-time equivalent employees did not decrease as might have been expected, but actually increased slightly by 2% (5304 - 5416).¹²⁻¹⁸ The number of acute care beds decreased from 940 in 1995 to 786 in 2002, a reduction by 13% from 4.7 beds per 1000 population to 4.1 per 1000 population (Table 2).

Table 2

Population and bed numbers in 1995 and 2002, in the St. John's and other regions of NL

Region	1995			2002			% change
	Population*	# Beds**	Rate/1000 population	Population*	# Beds**	Rate/1000 Population	
St. John's	198,027	940	4.7	193,067	786	4.1	-2.5%
Other regions	369,927	953	2.6	325,652	815	2.5	-12%
Total	567,954	1893	3.7	518,719	1601	3.2	

Sources: * Provincial Government: Economics and Statistics Branch,

** Department of Health & Community Services

Outside St. John's

In the regions outside of St. John's, administrative consolidation of several acute and long-term care facilities and isolated clinics occurred (1994 - Central East Board; 1995 - Avalon, Central West and Western Boards, 1996 - Peninsulas Board). In each case this was associated with a major reduction of 40-50% in management staff (personal communication). Different organizational structures and management styles were adopted, generally involving some centralization of management and integration across facilities. In some cases, multidisciplinary teams were formed to deliver programs and services. Integration of clinical services did not always follow, partly as a result of

geographic challenges. The number of acute care beds was reduced from 953 to 815; however, the number per 1000 population remained stable due to a decrease in the population. In 1995, there were 2.6 beds per 1000 population and by 2002 this number had decreased by only 4% to 2.5 beds per 1000 population (Table 2).

Intra-regional political differences affected regional planning and implementation efforts in the Western region. The new regional model sparked controversy between health care providers, senior management, regional board members and community groups over the location, allocation and integration of services. This conflict has resulted in a high turnover of CEOs. Between 1995 and 2001, the Western Regional Health Board appointed four CEOs to its Board. None of the four completed their full term of service (four years). In the fall of 2001, the Western Regional Health Board requested a study to review the reasons for the high turnover of CEOs in its region. A report entitled '*Study of Retention of Chief Executive Officers: Reasons and Recommendation*' was conducted by a former Regional CEO in October 2001.¹⁹ The findings suggested that many of the region's problems were related to: conflicting messages and lack of funding on the part of the province; failure of the regional board to deal with inappropriate provincial and municipal interference; the lack of buy-in to a regional model by local physicians; and politicians fostering their own agendas using the health care system.

In the Peninsulas Board region, public resistance to the restructuring process occurred during the first three to four years. In 1997, the corporation proposed a relocation of long-term care beds within the region, which was met with strong political and community opposition. Consequently, the number of acute care and long-term care beds in the Bonavista area has remained unchanged from 1995 to 2002. In this region, resistance also occurred in Burin because of conflict between local physicians and the Peninsulas Health Care Corporation. The absence of senior administrative personnel in Burin and the fact that a small group of physicians and community groups resisted the concept of a regional health board led to opposition of regionalization. As a result of this conflict, the Minister of Health commissioned a review in 1999, resulting in a report entitled *'Issues of Contention between Burin Area Physicians and Administration'*.²⁰ As a result of the recommendations of this report a Vice-President of Operations was appointed in Burin, resulting in a strengthened administrative link between the different sites.

Both the interview transcripts and these independent reports suggested that these conflicts could have been avoided had there been better planning and communication between the Provincial Ministry, the Regional Boards and the management staff. The remaining boards were successful in integrating some services.

Wage Increases

In 1999, public sector workers were given a 7% across-the-board increase in wages. However this did not decrease provincial labour unrest. A provincial nurses' strike occurred in 1999, during which nurses were legislated back to work. At this time, the nurses underwent an occupational review and were awarded an additional 8.5% increase in wages. An eight-day illegal provincial strike by lab X-ray workers occurred in 2000, resulting in an additional 8% increase in wages. A two-week strike by hospital support workers occurred in 2001 resulting in an additional payment of 6% increase in wages.

Results

Perspectives of key stakeholders

Although the objectives of regionalization were stated in the 1993 report to government, there was no explicit Provincial strategic plan in place to ensure the communication of the objectives to the newly established Regional Health Boards or an implementation plan to help ensure the realization of the objectives. As a result, there was a disparity between the intended objectives of the payer (government) and the perceived objectives of the CEOs of the Regional Boards.

The common objectives of restructuring identified through interviews with system managers included: economies of scale in management and support areas, but not in clinical areas; integration of services within regions; reduction of political influence on decision-making with a decrease in protectionism; and an increased regional perspective

with decentralized governance. However, the Provincial Department of Health believed that regionalization would help contain costs in the acute care sector. This would only be possible with a concerted effort to decrease the cost drivers in the system, namely, employee and bed numbers and future increases in public sector wages. Outside St. John's, bed numbers decreased by 138, but the population also decreased, thus maintaining the beds per 1000 population at a similar rate. Bed numbers decreased in St. John's by 13%, but employee full time equivalents increased by 2%.

Although CEOs agreed economies of scale were an objective of regionalization, they also stated in the interviews that they were to be achieved by reductions in management and support staff and not in clinical areas. There was never an intention to cut front-line workers. The interviews also suggested that amalgamation of services was particularly successful in St. John's, facilitated by the *a priori* direction of government to aggregate hospitals, and by the early development and communication of a strategic plan by the new regional board to aggregate hospitals. However, communication of the objectives of regionalization was inadequate in some other regions. The absence of a strategic plan for specific boards, in addition to poor communication, resulted in the political rejection of amalgamation in some of the regions. Although integration of services has occurred to some degree (acute and long-term care) in a number of regions, opportunities for further integration exist, by decreasing the number of institutional boards, by amalgamating boards within regions, and by decreasing the number of regions.

Changes in expenditure on acute care

Total expenditures for the HCCSJ increased from \$285.9 million in 1995/96 to \$416.4 million in 2002/03. A similar pattern was seen in the other study regions, where combined expenditures were \$101.2 million in 1995/96 and \$155.7 million in 2002/03 (Table 3). The majority of the increases were experienced in the latter years. The rate of increase in total acute care expenditures inside St. John's (46%) was less than the rate of increase outside St. John's (54%) (Table 3). Approximately 75% of hospital expenditures were allocated to human resources, with nurses and hospital support workers representing 70% of human resource expenditures. The remainder of the expenditures included medical/surgical supplies (6.2%), drugs (3.3%) and other supplies (16.6%). While these commodities are procured externally by the Health Board Association, there are limited cost reductions to be achieved. Consequently, since human resource expenditures account for such a significant proportion of overall expenditures, changes in human resource efficiency greatly influence cost. It was noted, that after restructuring, management costs decreased by 31% in St. John's. However, the costs for front-line workers increased substantially in all regions (Table 4).

The growth in health care costs of the HCCSJ was lower than in other areas of NL, partly attributable to its lower costs of management and non-clinical support services.

Table 3

Comparison of Changes in Acute Care Expenditures & Selected Economic Indicators for Newfoundland & Labrador from 1995/96 to 2002/03

Variable	1995/96 \$M	2002/03 \$M	% Change
Acute Care Expenditures			
Total Expenditure (HCCSJ)	285.9	416.4	+45.7%
Total Compensation (HCCSJ)	216.3	307.4	+42.2%
Total Expenditure (5 Regional Hospitals)	101.2	155.7	+53.9%
Total Compensation (5 Regional Hospitals)	77.0	118.6	+54.1%
Real Gross Domestic Product*	10,913.0	14,432.0	+32.2%
Total Personal Income*	10,130.0	11,985.0	+18.3%
Total Provincial Government Revenues	3,365.0	3,907.0	+16.1%

Sources: HCCSJ; Department of Health and Community Services, Economics & Statistics Branch, Government of Newfoundland & Labrador

*Data provided by calendar versus fiscal year

Table 4

Compensation Costs by Health Care Provider Group in
Five Regional Hospitals and Health Care Corporation of St. John's for 1995/96 and
2002/03

Total Compensation Costs by Health Care Provider Group		1995/96 \$M'	2002/03 \$M	% Change
Nurses	5 Regional Hospitals	21.6	36.5	69.5%
	HCCSJ	67.0	115.0	71.6%
Management	5 Regional Hospitals	9.3	9.3	-0.1%
	HCCSJ	27.8	19.1	-31.1%
Hospital Support	5 Regional Hospitals	24.4	36.3	48.8%
	HCCSJ	75.9	97.7	28.7%
Lab/X-ray	5 Rural Hospitals	6.3	10.9	71.4%
	HCCSJ	13.2	20.9	59.0%
Allied Health	5 Rural Hospitals	3.6	5.9	63.3%
	HCCSJ	11.5	23.7	106.6%
Non-union non-management	5 Regional Hospitals	1.5	1.7	16.7%
	HCCSJ	2.1	2.4	18.6%
Total of above provider groups	5 Regional Hospitals	66.7	100.6	50.8%
	HCCSJ	197.4	278.9	41.3%

Sources: HCCSJ; Department of Health and Community Services, Government of Newfoundland & Labrador

Increases in government revenues

Regionalization and aggregation of hospitals were perceived by the Government of NL as interventions to control the growth in acute care costs. However, the growth in these costs exceeded the rate of growth of provincial revenues. Although GDP, the most

frequently used macroeconomic indicator, increased substantially over the period (Table 3), this may not have been the most relevant indicator of the Government of NL's ability to pay for health care: much of the income from goods and services production did not increase the provincial government's revenues, because it was offset by reduction in federal transfers. Strong GDP growth in recent years was the result of increases in offshore oil production. However, due to the federal-provincial equalization agreement (in which federal transfers are made to increase the province's revenues to the Canadian norm), increased offshore oil production resulted in reduced equalization payments from the federal government to the provincial treasury, offsetting its GDP growth. Therefore, the more relevant indicators of government's ability to pay for health care costs include total provincial government revenues and total personal income. From 1995/96 to 2002/03, total expenditures for the HCCSJ and the combined five regional hospitals increased by 46% and 54%, respectively. Whereas provincial real GDP increased by 32% over this period. However, total personal income increased by only 18% from 1995 to 2002. Correspondingly, total provincial government revenues (including transfer payments) from the federal government only increased by 16% (Table 3). Therefore, strong GDP growth did not result in improved budgetary strength, and the growth in acute care costs was not matched by comparable growth in the government's ability to pay.

Discussion

Health care spending in Canada comprises a significant proportion of total expenditures of the federal, provincial and territorial governments. For example, in 2004, combined government expenditures on health care in Canada were forecast to be \$130 billion. Of this amount, spending on hospitals was projected to be \$38.9 billion of total spending.²¹ Public expenditures on hospital services as a percentage of total health care spending have been declining in recent years; however, they continue to represent approximately one-third of total health spending. The relative decline has been primarily attributed to improvements in technology that have permitted increased ambulatory care. However, per capita spending on hospital services varies significantly amongst the provinces. For example, in 2000/01, provincial per capita hospital spending ranged from Can\$773 to Can\$1,124. NL was at the highest end of the scale (Can\$1,124) per capita while Saskatchewan had the lowest spending per capita (Can\$773).²²

Provincial governments have implemented a variety of interventions in an effort to contain costs and improve efficiency in the acute care sector. At the macro-level, these have included: regionalization of services; closing hospitals; and, changing the manner in which hospitals are funded in favour of case-mix funding.²³ At the micro level, additional efficiency interventions include: the use of a report card for determining hospital efficiency indicators;^{23, 24} reducing beds; replacing high-cost acute care with community care; reducing variations in the rates of major surgical activities, and undertaking minor clinical procedures in an outpatient versus inpatient setting.²³

In the early 1990s in NL, the driving forces for change within the health system were fiscal constraint and escalating hospital costs. It was believed that regionalization of the governance of the system would lead to cost containment and improved efficiency through increased integration of care, economies of scale, and greater responsiveness to the needs of the local population. However, across all boards there appeared to be a disconnect between the cost-containment objectives of restructuring and the perceptions of economies of scale held by regional CEOs who stated that restructuring would produce a reduction in management and some support staff, but not in front-line workers. In the St. John's region, regionalization provided the structure through which strategic planning, communication of these plans and strong leadership facilitated the successful aggregation of hospitals. Strong leadership was the key to successful amalgamation of hospitals, and has been reported as a key element in the success of integrating health care delivery.²⁵ However, despite successful aggregation, the key objective of cost containment was not achieved. The rate of increase in acute care costs in NL was substantially higher than increases in the government's capacity to pay, as measured by total revenues. Although the number of beds per 1000 population in NL (3.2) is less than the Canadian average (4.0), NL has double the number of hospitals, six versus three 100,000.^{22, 26}

NL has a small population, a vast geography and major fiscal concerns, including a large provincial debt, annual budgetary deficits and health care costs that are increasing at an annual rate higher than the increases in provincial revenues. Present-day regional,

provincial and national acute care policy-makers must tackle issues such as the location of services, number of institutions and, most importantly, the number of front-line staff, in order to contain costs. At the regional level, restructuring decisions will be influenced by the rate of wage increases, government revenues including federal transfers and by the economic importance of a hospital to its community. While there is limited empirical evidence⁴ on the effect of regionalization on acute care costs, it has been reported that the growth in total spending on acute care in Canada was 44% between 1995 and 2003.

Conclusions

Since regionalization of health care boards was initiated, acute care expenditures at the HCCSJ and the combined five regional sites have increased significantly over the study period and in particular during the latter years. The rate at which these expenditures have increased across the province far exceeds the increases in provincial government revenues. This is explained by public sector wage increases over this period and no decrease in full-time equivalent employees. There was no provincial strategic plan to inform and guide the newly established health boards on the rationale and objectives that restructuring and regionalization were meant to achieve. Economies of scale envisaged by regional CEOs were insufficient to control costs, as provincial and national policy-makers had hoped. Regionalization and aggregation of hospitals was successful in St. John's due in part to a mandate from the provincial government to aggregate hospitals, early strategic planning, public communication, execution of plans, strong leadership and commitment from the board. However, the same success did not materialize in some

regions outside St. John's, where the transition was impeded by both management difficulties and protectionism. Opportunities exist for further integration and amalgamation of services to promote an improved continuum of patient care in all regions. However, based on this evaluation of regionalization further integration of boards and aggregation of institutions alone will not contain costs, unless specific interventions are targeted at the major cost drivers within the system, in particular the number of hospitals and cost of front-line employees.

References

1. Kouri D, Chessie K, Lewis S. *Regionalization: Where Has All the Power Gone?* Canadian Centre for Analysis of Regionalization and Health, December 2002
http://www.regionalization.org/Survey_02.pdf
2. Parfrey P, Barrett B, Gregory D. Restructuring acute care hospitals in Newfoundland and Labrador. *J Health Serv Res Policy* 2005; **10**(Suppl 2): 1-3.
3. The Canadian Medical Association. The language of health system reform. *Report of the Working Group on Regionalization and Decentralization*. The Canadian Medical Association, 1993.
4. Church J, Barker P. Regionalization of Health Services in Canada: A critical perspective. *Int J Health Serv*. 1998; **28**: 467-486.
5. Lomas J, Woods J, Veenstra G. Devolving authority for health care in Canada's provinces: 1. An Introduction to the issues. *Can Med Assoc J*. 1997; **156** (3):371-377.
6. Government of Newfoundland and Labrador. *Report of the Royal Commission on Hospital and Nursing Home Costs*. 1984.
7. Carrothers L, Macdonald S, Horne J et al. *Regionalization and Health Care Policy in Canada: a National Survey and Manitoba Case Study*. Winnipeg: Department of Community Health Sciences, Faculty of Medicine, University of Manitoba 1991
8. Dobbin LC. *Report on the Reduction of Hospital Boards*. St. John's, Newfoundland. February, 1993.

9. Canada. Task Force Reports on the Cost of Health Services in Canada, Volumes I, II, and III. Ottawa: Queen's Printer, 1969.
10. Department of National Health and Welfare. Canada, Regionalization of health services in Canada- a Survey of Development. *Working Paper*. Ottawa: Department of National Health and Welfare, February, 1974.
11. Davis EM. The Health Care Corporation of St. John's: the first five years of regionalization and restructuring. *J Health Serv Res Policy* 2005; **10**(Suppl 2): 68-70.
12. Dawes C. *Report of the Annual Benchmarking Survey*. Toronto, Ontario: Human Resources Benchmarking Network, 1996.
13. Dawes C. *Report of the Annual Benchmarking Survey*. Toronto, Ontario: Human Resources Benchmarking Network, 1997.
14. Dawes C. *Report of the Annual Benchmarking Survey*. Toronto, Ontario: Human Resources Benchmarking Network, 1998.
15. Dawes C. *Report of the Annual Benchmarking Survey*. Toronto, Ontario: Human Resources Benchmarking Network, 1999.
16. Dawes C. *Report of the Annual Benchmarking Survey*. Toronto, Ontario: Human Resources Benchmarking Network, 2000.
17. Dawes C. *Report of the Annual Benchmarking Survey*. Toronto, Ontario: Human Resources Benchmarking Network, 2001.
18. Dawes C. *Report of the Annual Benchmarking Survey*. Toronto, Ontario: Human Resources Benchmarking Network, 2002.

19. Davis E. *Study of Retention of Chief Executive Officers: Reasons and Recommendations*. October 2001 A study for the Board of the Western Health Care Corporation <http://www.healthwest.nf.ca/CEO%20Retention%20Study.pdf>
20. May A. *Report to the Minister of Health and Community Services on Issues of Contention Between Burin Area Physicians and Administration*. Peninsulas Health Care Corporation 1999.
<http://www.gov.nf.ca/releases/1999/health/mayreport.htm>
21. Canadian Institute for Health Information. *Health Expenditure by Use of Funds, by Year, by Source of Finance in Canada 1975-2004*. Canadian Institute for Health Information. 25 April 25 2005; <http://qstat.cihi.ca>
22. Canadian Institute for Health Information. *The Financial Management of Acute care in Canada. A Review of Funding, Performance Monitoring and Reporting Practices*. Canadian Institute for Health Information. March 2001.
23. Kirby M J. The Health of Canadians – The Federal Role. *First Report on the state of the health care system in Canada. Volume six: Recommendations for Reform*. October 2002.
24. Shanahan M, Loyd M, Roos NP et al. A Comparative Study of the Costliness of Manitoba Hospitals. *Med Care*. 1999;37:JS101-JS122.
25. Shortell SM, Gillies RR, Anderson DA, Erikson KM, Mitchell JB. Integrating Health Care Delivery. *Health Forum J*. 2000; 43(6):35-39.
26. Barer ML, Morgan ST, Evans RG. Strangulation or Rationalization? Costs and Access in Canadian Hospitals. *Longwoods Rev*; 1(4), 2003.

