Title: Adopting a common nursing practice model across a recently merged multi-site hospital: the impact on nurse well being, organizational climate and quality of patient care.

i) Research Themes: Our Project funding submission is related to *Research Theme 3.2, Nursing Leadership, Organization and Policy*, in particular the sub-theme related to the impact of restructuring on merged institutions with respect to leadership models, workforce health and well being. A recent policy synthesis has identified problems with the nurse practice environment as being a key contributor to nurse health and job satisfaction Baumann, O'Brien-Pallas, et al. (2001). The policy synthesis has also suggested that the nurse practice environment may be a major contributor to quality of patient care. Results from the Ontario site of a large international survey on nurse practice and patient outcomes suggest that changes in the nurse practice environment resulting from hospital restructuring may have had a negative effect on several important indicators of nurse well being, including burnout and job satisfaction. However, this was a one-time cross-sectional survey, which like most other research on this topic, suffers from the inability to draw firm evidence-based conclusions regarding the impact of restructuring. Indeed, there is a paucity of prospective research in this area, thus well-designed longitudinal studies are required to properly inform policy initiatives on the issue. We therefore propose to take advantage of a unique "natural experiment" whereby three hospitals that have recently been merged under a centralized reporting structure will now all be adopting a new professional practice model for provision of nursing care. As this will have a direct impact on the way in which nurses will perform their daily roles, we propose a longitudinal evaluation of the adoption of this new common practice model, with special emphasis being paid to its potential impact on nurse well-being, organizational climate and the quality of patient care.

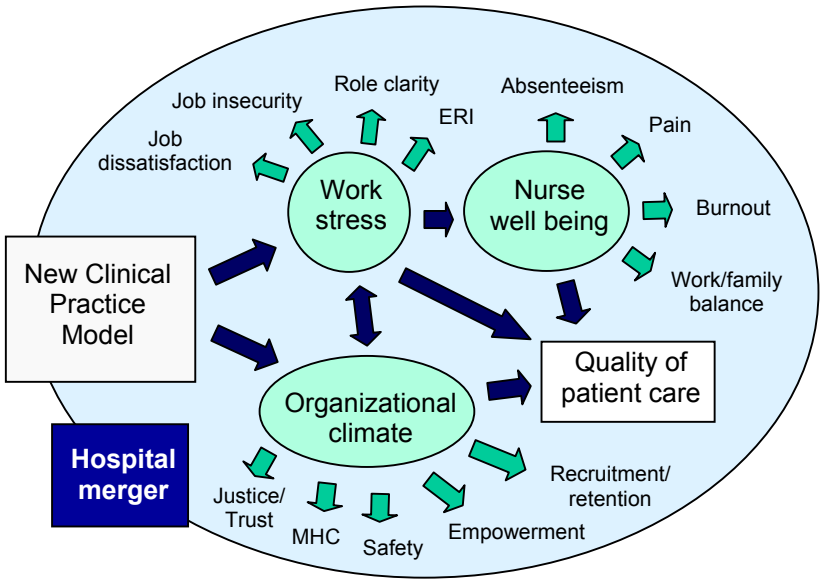

Figure 1. A conceptual framework for assessing the impact of introducing a new model of nursing care (ERI = effort-reward imbalance; MHC = Magnet hospital characteristics – control, autonomy, nurse-MD relations).

ii) Research Objectives: The main purpose of this study is to determine the multilevel impact of adopting a new, common clinical practice model for nursing care across three recently merged campuses of The Ottawa Hospital (TOH). The conceptual model driving our study is shown in Figure 1. It is hypothesized that the implementation of the new model will have direct impact at three different levels in the organization: individuals; units and (former) hospitals. Three main research questions will be addressed in this study:

1) What are the effects of introducing a new model for nursing care on nurse work stress and nurse well being?

2) What are the effects of introducing the new nursing care model on organizational climate, at both the unit and hospital (site) levels?
3) What are the effects of introducing the new nursing care model on quality of patient care?

iii) Research Background: The Ottawa Hospital was created in April 1998 from the merger of The Ottawa Civic Hospital and the affiliated University of Ottawa Heart Institute, The General Hospital and The Riverside Hospital. Nursing care for patients of the newly merged TOH is currently carried out through various models of nursing care delivery, including total patient care, primary nursing, team nursing, functional nursing and case management. Each model brings with it different ways of communicating and decision-making. Consequently, the nursing TOH leadership group (comprised of Clinical Directors, Clinical Managers, Nurse Educators and Nursing Coordinators) identified the need to agree on and implement a single system-wide model of nursing care, a decision supported by clinical nurses through their Corporate Nursing Clinical Practice Committee. A standard model of nursing care would help facilitate the integration of nurses in their workplace, help to create an overall corporate culture easily recognizable by all providers of care, facilitate mobility between clinical areas, articulate nursing values, and facilitate collaboration with other health professionals.

The newly developed professional practice model includes characteristics valued by clinician and supported in the literature, as summarized in a set of guiding principles. The consensus around direct care includes the concept of autonomy and accountability for a selected group of patients, full scope of practice, team spirit, specific delegation of activities to appropriate category of personnel. The consensus around the support systems required to facilitate quality practice includes guiding principles related to educational support, clinical expertise and organizational day-to-day support. Decision-aid tools have been developed to guide the implementation of the model, including a staff mix tool, a span of control tool for clinical mangers and span of coverage tool for nursing educators. Nurses at TOH developed the new nursing care model through an extensive literature review, consultation and analysis. Membership of the Model Work Group consisted of clinical nurses representing the models of nursing care on the four sites, clinical managers, nurse educators and advanced practice nurses, as well as a public representative and a University of Ottawa School of Nursing representative. A key recommendation from the model building process was to develop a research protocol to document the impact of the new nursing care delivery model on nurse well being, organizational climate and nurse-sensitive patient outcomes. The main purpose of our study therefore is to carefully evaluate the change process so that other organizations might benefit from the pioneering work being carried out at TOH. The presence of multiple models and the need for standardization is not unique to TOH, given the extent of hospital restructuring across Canada, which makes the methods and results of our study widely applicable beyond TOH.

iv) Research Methods: It is recognized that nursing is one member of the health care team and that effective multidisciplinary collaboration is required on this project. All partners of nursing care may experience changes as a result of the introduction of the new model, and as such, they will be involved in the finalization of the implementation and evaluation plan. We intend to conduct three surveys over a period of 36 months - one at baseline, before implementation of the new care model; the others 12 and 24 months later. A total of 3600 nurses work at TOH. We anticipate that 1200 will be needed for the baseline survey to ensure at least 1000 subjects with

pre and post-intervention data due to expected loss-to-follow-up of about 20%. The survey will include measures to address the indicators for each of the main areas identified in Figure 1 – i.e. work stress, nurse well being, organizational climate and quality of patient care. Organizational change may be better accepted when the changes are made in ways that individuals view to be procedurally fair. The development of TOH nursing care model incorporated strong efforts in this direction (e.g., representation of all groups). It is important to know how effective this process was, thus we will evaluate individual nurses' perceptions of the procedural justice of the process and the impact these perceptions have on their acceptance of the new model of nursing care. In the present study we focus on two kinds of climate: hospital safety climate, i.e. shared perceptions among nurses concerning safety policies, procedures, and practices; and quality climate, i.e. shared perceptions among nurses concerning organizational policies, procedures and practices that regulate and set standards for the quality of patient care. Based on previous research, we expect significant within-hospital and between-hospital climate variance, e.g. significant differences between departments in the same hospital in terms of emphasis of the quality of patient care, which are statistically nested in organization-level differences between hospitals regarding the same issue. We intend to use also hierarchical linear modeling (HLM) techniques in order to analyze cross-level effects (Zohar, 2000). Administrative data will be used to collect time trends for absenteeism, injury, program costs, and turnover. We will use confidential unique identifiers on the self-reported surveys so we can link them over the three time points. The potential for establishing a prospective cohort will be explored with the objective of continued follow-up over time to determine long-term consequences from the organizational changes introduced. Twenty qualitative interviews will be conducted at each time point, evenly split between nurses and other people directly involved in nursing care, including physicians, in order to better assess the context for the survey and to determine the impact of the intervention on non-nurses. Three years of project support are being sought, with background work for the study expected to take 6 months, an additional 24 months required for the data collection phase and the final 6 months for analysis and write-up. A 3-year longitudinal design is required since organizational change of this scale also has the potential to create short-term deteriorations in the indicators under study, a situation that could seriously confound the conclusions drawn from the intervention. Neither a short-term longitudinal study nor a cross-sectional survey would be able to adjust for such confounding.

v) The Research Team: The multi-disciplinary study team will be under the supervision of the *Principal investigator*, Dr. Michael Kerr. Kerr is an epidemiologist, and a Scientist in the Workplace Studies section at the Institute for Work & Health (IWH) in Toronto. He is also a co-investigator in the Nursing Effectiveness, Utilization and Outcomes Research Unit (NRU) at the University of Toronto, and an adjunct professor in the School of Nursing at the University of Western Ontario. His current research includes a number of studies on the work environment and health of nurses. *Co-Investigators* include: Dr. Ginette Lemire-Rodger, the Chief Nursing Officer for the Ottawa Hospital and the President of the Canadian Nurses Association; Dr. Gail Hepburn, an organizational psychologist in the Workplace Studies section at IWH; Dr. Heather Laschinger, a Professor in the School of Nursing at the University of Western Ontario and member of the Expert Panel on Nurse-sensitive Outcomes; and Dr. Linda-Lee O'Brien-Pallas, a Professor in the Faculty of Nursing at the University Toronto, and Co-Director of the NRU. *Active Decision Makers* on the team include Dr. Ginette Lemire-Rodger; and Dr. Gale Murray, of the Change Foundation and the Ontario Hospital Association. The *Organizational Climate*

Consultant will be Dr. Dov Zohar, a leading international expert on measuring organizational climate, particularly as it relates to quality and safety climates and mergers.

vi) Partners and Co-sponsors: The key supporters of this study will guide and direct the activities of the research team, assist with data analysis and interpretation of the findings. This will be in the form of a Study Steering Group that will include representatives from the Model of Nursing Care Work Group at TOH, who developed the new model, as well as other relevant members from within TOH. Co-sponsors are anticipated to include TOH, the CHSRF Nursing Research Fund, the Ontario Ministry of Health and Long-term Care, and the Change Foundation.

vii) Communication Plan: A key feature of the communication plan in this study will be the process used to feedback information to the membership of TOH community. We will work with a local study steering committee to develop a communication strategy that will ensure timely and clear presentation of process and findings. Based on our research experience this is a crucial part of any successful workplace intervention. As our processes and findings will have utility outside of TOH, we will also develop a dissemination strategy for the study in collaboration with provincial and national nursing partners, such as the Canadian Nursing Association and the Ontario Nurses Association. We will also work with the Change Foundation to explore the feasibility of using the *"Change Exchange"* research transfer mechanism available on their website as a key dissemination tool. The findings will also be presented at health service, health association and nursing conferences, and submitted to peer reviewed journals targeting health policy makers, health care administrators and the nursing community.

viii) Budget: The total 3-year budget has been estimated to be $328,000. As shown below, the majority of the budget will go towards personnel costs (full-time project coordinator, research assistants, biostatisticians, and consultants). The rest is accounted for primarily by the cost of data collection at three points in time, with additional qualitative interviews to complement the main survey data. *"In Kind"* support will be provided by the Ottawa Hospital, the Universities of Toronto and Western Ontario and IWH. As with our current CHSRF grant, IWH will act as the administrative and financial base for the project.

	Year 1	**Year 2**	**Year 3**	**Total**
Project Coordinator (1.0 FTE incl benefits)	$50,000	$50,000	$50,000	$150,000
Research/Admin Assist (0.5 FTE incl benefits)	$15,000	$15,000	$15,000	$45,000
Statistician (10%, 20%, 20% FTE incl benefits)	$5,000	$10,000	$10,000	$25,000
Computer and software	$5,000	-	-	$5,000
Survey and data handling costs	$15,000	$15,000	$15,000	$45,000
Education materials and internet resources	-	-	$10,000	$10,000
Consultants (organizational climate)	$10,000	$10,000	$10,000	$30,000
Travel for dissemination of results	-	-	$3,000	$3,000
Travel for project meetings and data discussions	$5,000	$5,000	$5,000	$15,000
Totals:	**$105,000**	**$105,000**	**$118,000**	**$328,000**

References:

1. Baumann, A., O'Brien-Pallas, L. et al. (2001) Commitment and Care: The benefits of a healthy workplace for nurses, their patients and the system. CHSRF. Ottawa.
2. Zohar, D. (2000). A group-level model of safety climate: Testing the effect of group climate on micro-accidents in manufacturing jobs. Journal of Applied Psychology, 85, 587-596.