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**Organizational Factors Influencing the Modification of Policies and Procedures:
Towards the Implementation of Best Practices**

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**ORGANIZATIONAL FACTORS INFLUENCING
THE MODIFICATION OF POLICIES AND PROCEDURES:
TOWARDS THE IMPLEMENTATION OF BEST PRACTICES**

By

Isabelle St-Pierre

**Thesis submitted to the
School of Graduate Studies and Research
in partial fulfillment of the requirements for
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Abstract

Background: Several theoretical models now suggest the need to promote an organizational approach to practice change for nursing. In addition, studies have found that nurses use written policies and procedures as a source of information more frequently than research articles. Therefore, the review and development of policies and procedures as part of clinical guideline implementation is one strategy to facilitate the integration of the best available research results into nursing practice.

Objectives: To examine organizational factors that influence revisions and modifications to policies and procedures in health care agencies that participated in a pilot implementation and evaluation of six clinical practice guidelines developed by the Registered Nurses Association of Ontario. To describe the nature and extent of changes to policies and procedures from the perspective of nursing administrators, clinical resource nurses and nursing staff.

Design: Using a cross-sectional post only design, a secondary analysis was conducted on data collected from 11 Ontario health care agencies six months after guideline implementation. A random sample of 316 nurses from 23 participating units completed a mailed in questionnaire (response rates ranged from 46% to 94% by agency). In addition, 104 nurses, nurse administrators and clinical resource nurses completed a telephone semi-structured interview (response rates ranged from 62% to 100% by agency). Statistical analysis of quantitative data included bivariate analysis using chi-square tests and *t*-tests. As well, content analysis was conducted on qualitative data.

Results: All 11 participating agencies reported changes to their policies, procedures, and/or other internal documents as a result of guideline implementation. However, only

eight out of the 11 agencies had 75% or more of the surveyed nursing staff agreeing that policies and procedures were modified to reflect the guidelines. There was a positive statistically significant relationship ($p < 0.0001$) in perceived levels of organizational support and nursing staff' perceptions of modification to policies and procedures to reflect the new guidelines. No statistically significant relationships were found between the nurses' perception of modification of policies and procedures and the type of agency – acute versus others ($p = 0.149$), the agency designation as teaching versus non teaching ($p = 0.876$) or the nurses' perceived levels of organizational stability ($p = 0.163$).

Conclusion: Organizational support in the form of perceived support by top management, sufficient time and training to learn how to use the clinical guideline, adequate number of qualified staff and sufficient equipment and supplies to implement the clinical guideline is important and can influence nurses' awareness of evidence-based modification of policies and procedures. Further research is needed to compare nurses' actual practice with current policies and procedures. In addition, research is needed to determine whether organizations that modified or internalized their policies and procedures sustained the implementation of the clinical guidelines recommendations better over time.

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CHAPTER ONE: PROBLEM

Clinical guidelines are systematically developed statements to assist practitioner decisions about appropriate health care for specific clinical circumstances (Field & Lohr, 1990). The guidelines are usually developed by a panel of experts including researchers, administrators and clinicians who review the research evidence and come to a consensus about specific recommendations for practice. Ciliska, Pinelli, DiCenso and Cullum (2001) suggest that since guidelines are generally developed with clinical practice in mind, they summarize the research findings or evidence for nurses for direct application to practice.

The implementation of clinical guidelines is intended to reduce undesirable variations in practice and promote higher quality care and better health outcomes (Thomas, McColl, Cullum, Rousseau, & Soutter, 1999). Despite the need for such statements, the implementation of clinical guidelines remains a challenge for clinicians and managers (Davies, 2002; Funk, Champagne, Wiese, & Tornquist, 1991b; Griffin & Edwards, 2002; Retsas, 2000). A major barrier to the implementation of clinical guidelines in nursing practice lies in the model of nurses' employment. Generally, nurses are employed by health care facilities and work in teams. They are not independent practitioners as physicians are, and they are not at liberty to freely change their practice without the support of the organization (Foxcroft & Cole, 2003). Most nurses perceive that they do not have the power or authority to change their practice (Funk et al., 1991b). As a result, implementation strategies that aim to change individual nursing practice without the formal endorsement of the organization will likely be unsuccessful.

As a result, both the individual practitioner and the organization are important players when implementing research findings into practice such as clinical guidelines (Brett, 1987; Ciliska, Pinelli, DiCenso, & Cullum, 2001; Horsley, Crane, Crabtree, & Wood, 1983; Hunt, 1996; Kitson, Ahmed, Harvey, Seers, & Thompson, 1996; MacGuire, 1990; Rogers, 2003; Royle, Blythe, Ciliska, & Ing, 2000). A recent integrative literature review of 20 studies by Estabrooks, Floyd, Scott-Findlay, O'Leary and Gushta (2003) showed nurses' attitudes and individual beliefs to influence research utilization. However, other individual determinants such as involvement in research activities, information seeking, education, professional characteristics and socio-economic factors did not appear to influence the use of research. These findings are important. They reinforce the need to not only look at the individual nurse but also to carefully look at organizational strategies that facilitate the implementation of research findings, including clinical guidelines, into practice.

One of the organizational strategies to facilitate the integration of clinical guideline recommendations into the organizational process for nursing practice is the review and modification of policies and procedures. Policies and procedures are documents that have legal ramifications. As a condition of employment, nurses must follow organizational policies and procedures. Health care organizations are required to have policies and procedures and to develop and review such documents on a regular basis. Most health care organizations have policy and procedure committees in place. The topic of the policy or procedure will determine who will be involved with the development and/or review of the documents. Some individuals will be called upon based on their expertise, for example someone from infection control or a clinical nurse

specialist in a particular area may be sitting on the policy and procedure committee for a specific policy or procedure. Policy and procedure committees also include a middle manager (e.g. Head Nurse) and, if possible, nursing staff. Once developed, policies and procedures need to be approved by senior management.

Policies are written statements that establish an organization's position on a particular issue and are usually set by higher level management while procedures describe the step-by-step specific activities to be carried out and are often departmental in nature (Amann, 2001). Written procedures can provide a framework to support consistent nursing practice by describing who may provide a particular nursing service (McCabe, 1998). For example, procedures generally indicate the job classification (e.g. Registered Nurse, Registered Practical Nurse) or the competency required to provide the necessary care (e.g. a Registered Nurse with special certification). An absence of formal policies and procedures can result in a lack of uniformity of practice (Harrow, Foster, & Greenwood, 2001).

Policies and procedures also have many additional purposes. They can be a valuable tool upon which nurses can base their practice, while providing them with written documentation to support their decisions when they are questioned by members of a multidisciplinary team (Manias & Street, 2000). As well, policies and procedures can help nurses change their practice based on sound professional judgment, without fear of violating medical authority (Harrow et al., 2001).

In the mental health field, a promising new study of 322 clinical and case manager service providers and 51 program managers (response rate 96%) showed that the presence of written policies as part of internal program initiatives appeared to predispose

providers to be more open to new practices (Aarons, 2004). The data were collected using an evidence based practice assessment questionnaire developed by the author. The subscale had 18 items grouped in four dimensions of attitudes toward adoption of evidence based practice (EBP) including: 1) likelihood of adopting EBP given the requirement to do so; 2) appeal of the EBP; 3) openness to new practices; and 4) perceived divergence of usual practice with research-based developed interventions.

Despite the need for up-to-date evidence-based policies and procedure to guide nursing practice, the translation of clinical guidelines into policy and practice does not always occur (Cabana et al., 1999; Grol, 2001). Health-care decisions continue to be based primarily on experience and opinion, with little consideration given to the available research evidence (Dobbins, Ciliska, Cockerill, Barnsley, & DiCenso, 2002). As a result, policies and procedures may be based on tradition or customary practice (Duff, Kitson, Seers, & Humphris, 1996). As well, the usefulness of policies and procedures is diminished when contents are outdated (Amann, 2001).

Summary

The development and modification of policies and procedures is one strategy to facilitate the implementation of clinical guidelines in health care organizations. Changes to policies and procedures to ensure that the information they contain is up-to-date and based on the best research evidence can help bridge the gap between research findings and practice. There is a paucity of studies on the use of policies and procedures as a tool to implement clinical guidelines.

Purpose of the Study

In 1999, the Registered Nurses Association of Ontario launched a multi-year project to develop, pilot the implementation, evaluate and disseminate clinical guidelines for nurses in response to a recommendation by the Ontario Nursing Task Force. The nursing best practice guideline project continues to be funded by the Ontario Ministry of Health and Long-Term Care.

The Registered Nurses Association of Ontario clinical guidelines are based on the best available evidence and are revised every three years. The term *cycle* is used to refer to the process of guideline development, pilot implementation, evaluation and dissemination for a group or cluster of topics. Between 1999 and December 2003, 17 clinical guidelines grouped in three cycles were developed, implemented and evaluated.

This study is a secondary analysis of data collected as part of the cycle three evaluation. The purpose of this secondary analysis is to explore the organizational factors that influence policy and/or procedure development and modification in the context of implementing clinical guidelines.

The specific research objectives of the secondary analysis are as follows:

1. To describe the nature and extent of changes to policies and procedures from the perspectives of nursing administrators, clinical resource nurses and nursing staff.
2. To examine organizational factors influencing the development and modification of policies and procedures in organizations that have participated in a pilot project related to implementation and evaluation of clinical guidelines developed by the Registered Nurses Association of Ontario.

Relevance of the study

Health care agencies are vicariously responsible for the actions of their employees, who are expected to follow organizational policies and procedures. However, to be a valued source of information, policies and procedures should be evidence-based (Fellows, Miller, Frederickson, Bly, & Felt, 2000). The Canadian Council on Health Services Accreditation (2002) requires, under criterion number 13 of the Leadership and Partnerships Standard, that health care agencies use research findings and information from best practices to improve their efficiency. Policies and procedures that incorporate current clinical guideline recommendations would facilitate guideline implementation and help bridge the gap between published research results and actual clinical practice. It is therefore important to look at organizational factors that might influence the development and/or modification of policies and procedures.

Organization of the thesis

Subsequent to this chapter, the thesis is presented in four chapters. Chapter 2 offers a critical review of the literature. First, various strategies used to implement clinical practice guidelines are reviewed. Next the use of policies and procedures as an organizational strategy to implement clinical guidelines is explored. Finally, factors in the organizational environment that may influence the development and review of policies and procedures are examined. A conceptual framework for the current study is proposed with operational definitions. Chapter 3 describes the study methods. Chapter 4 presents the results. Chapter 5 includes an interpretation of the main research findings and a revised conceptual framework. The strengths and limitations of the study are

presented. The implications and recommendations for practice, education, research and administration are also discussed.

CHAPTER TWO: LITERATURE REVIEW

While performing the literature review, it became clear that there was little in the current literature addressing the relationship of the organizational environment and the development and/or revision of policies and procedures in the context of clinical guidelines implementation. As a result, this chapter is divided into three topics: (a) implementation of clinical guidelines (b) policies and procedures to guide nursing practice; and (c) factors in the organizational environment, including organizational demographics, organizational support and organizational stability, that may influence the development and review of policies and procedures. The conceptual framework and a definition of the study variables are presented in the last two sections of this chapter.

The literature search covered publications in English, from the early 1980s to 2004; and included books, reports and journal articles. Although the author is fluent in both English and French, the search did not reveal any French materials. Bibliographic databases searched for journal articles included Current Contents, EMBASE, The Cochrane Library, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline, and Sociofile (social planning, policy and development database). Additional search strategies included the identification of relevant references from each article retrieved. Text words used for the search are presented in Appendix A.

Implementation of clinical guidelines

A number of implementation strategies have been used by agencies to encourage health care practitioners to adopt the practices recommended by any given guideline. Examples of these strategies include producing educational materials, holding educational meetings, launching local consensus processes, making educational outreach

visits, enlisting local opinion leaders, holding patient-mediated interventions, carrying out audits, soliciting feedback, issuing reminders and developing marketing campaigns (Davies, 2002; Davis & Taylor-Vaisey, 1997; Dobbins, Ciliska, & Mitchell, 1998; Graham, Harrison, Logan, & McCleary, 2003; Oxman, Thomson, Davis, & Haynes, 1995; Stetler, 2003). It is generally agreed that multi-faceted approaches, or various combinations of single interventions, are more effective in enhancing the adoption of research findings (Carter et al., 1995; Grol, 2001; Lomas & Haynes, 1988; Moulding, Silagy, & Weller, 1999; NHS Center for Reviews and Dissemination, 1999; Stetler, 2003; Grol, 2001) However, there is insufficient research evidence to say with confidence which specific dissemination or implementation strategies are likely to work best in a particular context (Graham et al., 2003; Grimshaw et al., 2004)

The choice of a dissemination and implementation strategy

Numerous systematic reviews have been conducted over the last 10 years to describe the effectiveness of various clinical guideline dissemination and implementation strategies. However, most of the studies looked at physicians' practice behavior. Since nurses and the work they perform are very different from physicians, there is a need to study clinical guideline implementation strategies specific to nurses.

Authors seem to agree that active dissemination and implementation strategies may be more effective than passive strategies in bringing about change (Thomas et al., 1999). Active interventions refer to the direct involvement of the practitioners. Examples of active dissemination and implementation strategies include educational outreach visits, involvement of local opinion leaders, multifaceted interventions and interactive educational meetings. Passive dissemination strategies that appear to have

little effect include conferences and mailing of unsolicited material (Bero et al., 1998; Davis, Thomson, Oxman, & Haynes, 1995; Oxman et al., 1995).

A recent systematic review by leading experts in the field found that many respondents only used educational materials and short lunchtime educational meetings as strategies for clinical guideline dissemination. These two strategies appeared feasible within the current resources of the respondents (Grimshaw et al., 2004). Grimshaw and colleagues concluded that because of limited resources, decision makers need to prioritize which guidelines they wish to disseminate and implement in their organization.

Policies and procedures as a strategy to implement clinical guidelines

Several models are now used in promoting an organizational approach to practice change. For example, in his book entitled *Diffusion of Innovations*, Rogers (2003) states that if the organization has not adopted the innovation, it will be very difficult for an individual to do so on his own. The book includes a full chapter about the diffusion of innovations in organizations and proposes a five-stage model of the innovation process in an organization. The third stage of the model is where the new idea is adapted and tailored to correspond to the organization's requirements. According to Rogers, this internalization process is required because innovations almost never fit perfectly in the organization in which they are implemented. As well, the redefining/restructuring stage can allow the participants to perceive the new idea as being theirs. Ensuring that clinical guideline recommendations are included in organizational policies and procedures is an example of organizational redefining/restructuring.

Other models have specifically identified policies and procedures as a strategy to incorporate research findings into practice. The updated version of Stetler's model

(2001) for research utilization within the context of evidence-based practice consists of five phases. The fourth phase (translation/application) focuses on ways to implement research recommendations and includes changes in policy, procedure, protocol, algorithm and program components as strategies to incorporate research findings and facilitate change in practice. In a more recent article, Stetler (2003) presented an organizational framework for evidence-based practice comprising three organizational elements. The third element – “infrastructure to support and maintain an evidence-based culture and related activities” includes the integration of evidence based practice into formal documents such as policies as well as changes to clinical procedures as ways to use evidence to understand, guide and enhance nursing practice.

Although some models have included policies and procedures as a strategy to incorporate research findings into practice, there have been few studies that actually looked at policies and procedures as an organizational strategy to implement research-based nursing clinical guidelines. However, many authors have suggested that institutions base their policies, procedures, protocols, standards of care and critical pathways on research findings (Stonestreet & Lamb-Havard, 1994; Van Koot & Laverty, 1992; VandenBosch, Cooch, & Treston-Aurand, 1997) and link their research utilization activities to quality management programs (Rutledge & Donaldson, 1995) as a way to facilitate the dissemination and implementation of research.

According to Horsley, Crane, Crabtree and Wood (1983), organizations must be committed to the process associated with research use in order for research utilization to have an impact on nursing practice. Committed organizations have enduring mechanisms such as standing committee(s) for the development of policies and procedures; and

substantive resources such as personnel, equipment, time and funds. Horsley et al. suggested that because most organizations do not build mechanisms to promote ongoing use of new practices, the use of many well-planned and implemented innovations tends to decrease over time. Therefore, the development or modification of policies and procedures might be a useful strategy for sustaining practice change.

The challenges

In this era of rapid change, attempting to integrate clinical guidelines into organizational policies and procedures might prove to be a challenge because of the large number of guidelines available, which make it difficult to decide which one to implement as well as the many steps associated with organizational policy development and review.

Policies and procedures to guide nursing practice

As there is limited knowledge about the use of policies and procedures as an organizational strategy to implement clinical guidelines, there is a need to look at the current use of policies and procedures in nursing practice.

Nurses' perception of organizational policies

A number of studies found that the nurses' perception of an organizational policy, and not the existence of an actual policy, may correlate with the nurse adopting a new behavior. In 1987 Brett studied 216 nurses in positions with direct patient care responsibilities and found that the nurses' perceptions of the existence of organizational policy strongly correlated with the nurse's self-reporting that they had adopted the innovation ($r = .626, p < .001$). However, Brett found no relationship between nurses' perceptions of policy and the hospitals' actual policy ($r = .09, p > .05$) or between the number of policies a hospital reported having and the nurses' innovation adoption score

($r = .23, p > .05$). Interestingly, Brett was not able to determine whether perceptions about policies influenced the use of an innovation or whether it was use of the innovation that influenced perceptions about the existence of policy. Therefore, further research is needed to better understand nurses' attitudes and perceptions about policies.

Similarly, Coyle and Sokop (1990) ($N = 113$, response rate 56%) found that nurses' perception of a hospital policy was significantly related to the nurses' level of persuasion about, and subsequent use of, the nursing practice (10 Pearson correlations met or exceeded $r = .50$). Fourteen nursing practices were assessed including: intra-muscular injection, catheter removal, urine testing, oral temperatures, intra-venous site changes and tube feeding. The extent of the adoption of the practice was measured using a five stage scoring methods (unaware, aware, persuaded, use sometimes and use always). The average adoption score for the study indicated that the average nursing practice was at the persuasion stage. Of interest, nineteen percent of the nurses taking part in that study cited using hospital policy and procedure manuals as a source for knowledge. Other sources of knowledge included the professional nursing literature followed by conferences and in-services and by observation of others using the practice.

Nurses' awareness of organizational policies

The literature indicates that nurses are often not aware of written policies and procedures. In a subsequent study ($N = 216$), Brett (1989) found no significant relationship between institutionally adopted policies and nurses' awareness of the policies. Similarly, a study by Seymour (2002) ($N = 30$ nurses and 12 anesthetists) found that only 30% of nurses were aware of the "nil by mouth" hospital policy compared with 75% of the anesthetists. Seymour concluded that the hospital policy regarding pre-

operative fluid restrictions was not reflected in clinical practice of nurses, which continued to be based on tradition.

While these research findings draw attention to the fact that hospital policies may not be used to guide nursing practice, the reasons are unclear. Although it could be argued that it is the individual nurse's responsibility to familiarize him or herself with organizational policies and procedures; the responsibility is also an organizational one. Further research is needed to better understand how organizations are promoting the use of their policies and procedures as well as communicating changes made to policies and procedures.

Policies and procedures as a source of knowledge

Interestingly, practising according to organizational policies and procedures appears to be related to the nurses' knowledge and conscientiousness. A study by Alley (2001) involving 91 nurses providing direct patient care (response rate 98%) suggests that the more knowledge nurses have on specific topics, the more accountable they perceive themselves to be. As part of her study, Alley found a significant positive correlation ($r = 0.245$, $df = 84$, $p < 0.05$) between the nurses' self-reported knowledge of the pain management policy and the nurses' ability to assist patients with pain management. There was also a significant positive correlation ($r = 0.278$, $df = 85$, $p < 0.05$) between nurses' self-reported knowledge of policy and nurses' perceived accountability for pain management activities.

The literature is also showing that policies and procedures are often used by nurses as a source of knowledge. In a recent U.K. study ($N = 330$, response rate 45%) to identify the extent to which nurses drew upon various sources of knowledge to inform

their practice, Gerrish and Clayton found that nurses used policy and procedure manuals and audit reports more often than research articles. Of 18 sources of knowledge used to inform the nurses' practice, "information I get from policy and procedure manuals" ranked sixth. The study also found that nurses favored experiential knowledge acquired through contact with patients, peers and medical staff compared to formal knowledge from textbooks and journals (Gerrish & Clayton, 2004) .

Similar results were found in a Canadian cross-sectional study ($N = 600$, response rate 40%) by Estabrooks (1999b). She found that the most frequently used sources of practice knowledge were experiential, followed by what was learned in nursing school, followed by conferences and in-service training. Of 16 sources of practice knowledge, the fifth most frequently used was a policy and procedure manual followed by information from peers and physicians. Nursing research journals ranked fifteenth. Estabrooks study identified traditional scientific journals as an ineffective way to disseminate research findings.

These findings are important because they show that nurses prefer using colleagues or direct observation rather than scientific journals for gaining knowledge. The findings also indicate that reports, audits and policy and procedure manuals are documents of choice for nurses seeking new knowledge. The reason for these preferred choices might be that such documents are often readily accessible to nurses and easy to understand. As well, most policies and procedures are directed towards activities taking place in the nurses own setting, making such documents very relevant.

The literature reveals that nurses rarely use research articles as a source of knowledge for reasons that include an aversion to quantitative data such as statistics, the

articles being written at a literary level that is difficult to understand and the lack of clinical credibility of academic researchers (McCaughan, Thompson, Cullum, Sheldon, & Thompson, 2002). Since policy and procedure manuals are often used as a source of knowledge by nurses, these findings also stress the importance of ensuring that policies and procedures are evidence-based, relevant and current, as well as easily accessible by nurses.

The influence of the organizational environment

The literature has found that the work environment can influence the implementation of research findings, including clinical guidelines (Davies, 2002; Estabrooks, 2003; van derWeide & Smits, 2004). In 2003, Foxcroft and Cole conducted a Cochrane systematic review that focused on organizational infrastructures to promote evidence based nursing practice. Organizational infrastructure was defined as “the underlying foundation or basic framework through which clinical care is delivered and supported” (Foxcroft et al., 2003, p.3). While they found that none of the appraised studies (n= 7) were sufficiently rigorous to be included in their review, they did acknowledge the importance of the organizational infrastructure to promote the use of research findings. Interestingly, organizational policies were cited as an example of organizational infrastructures.

Following a systematic review of 61 articles to recommend effective strategies for the implementation of clinical practice guidelines, Davis and Taylor-Vaisey (1997) found that the characteristics of the practice setting such as aspects of workload, relevant health care team members, mix of patient and funding mechanisms, influenced the adoption of clinical practice guidelines. Other variables included the qualities of the guidelines, the

characteristics of the health care professional, the incentives (legal and financial), the regulation (by accreditation or licensing bodies) and the patient. Similarly, the characteristics of the environment including the type of setting in which the change in practice occurred and the number of employment agencies represented by the learners, were identified to be a factor influencing change in practice by Waddell (1991) in a meta-analysis of 34 studies to determine the effects of continuing education on nursing practice. Other variables identified by Waddell included learner characteristics, nature of change in practice and characteristics of the continuing education activity.

The physical environment was important to four hospitals when implementing evidence-based nursing practice in maternity care in a recent focused ethnography study by Angus, Hodnett and O'Brien-Pallas (2003). They found that implementation of a new idea was influenced as much by the context (i.e. fiscal cutbacks, changes to staffing and management) as well as by the individuals who will practice accordingly. In a paper entitled *Dissemination and Use of Research Evidence for Policy and Practice by Nurses: A Model of Development and Implementation Strategies*, Dobbins, Ciliska and Mitchell (1998) also stated that organizational characteristics and environmental factors have been shown to influence the diffusion of research findings. Examples of organizational characteristics include size, complexity, available resources, administrative intensity, culture, internal and external communication channels and decision-making processes. Environmental factors include reporting relationships between senior management teams and the board, regulations and legislation, financial resources, peer pressure, competition between institutions to attract specialized professionals. Other studies have also supported the belief that the organizational context in which nurses work can have an

important influence on the way they are able to utilize research findings in the delivery of care (Closs & Cheater, 1994; Davies, 2002; Funk, Champagne, Wiese, & Tornquist, 1991a; Funk et al., 1991b; Hunt, 1981). If the integration of research and practice is addressed at an organizational level, for example by having evidence based policies and procedures, nurses may be more likely to practice according to the best evidence available.

Following a review of the literature, a feasibility check was conducted to ensure that data would be available for a secondary analysis to address the research objectives. Subsequent to the feasibility check, three constructs about the organizational environment were selected for study. These include organizational demographics, organizational support and organizational stability.

Organizational demographics

While individual participants' demographic information is commonly included in most studies, few studies, especially in the nursing literature, actually include variables to describe the organizational demographics. The most common organizational demographic variables studied are hospital size, type of agency, teaching activity and location. For this study, organizational demographics are defined as specific organizational attributes. The type of agency (acute care, community care, rehabilitation and chronic care) and the agency designation (teaching or non-teaching) will be the attributes considered.

There are mixed reports on the effect of organizational size on the adoption of research findings. Some authors (Rogers, 2003) found a relationship between size and adoption of research findings while others (Brett, 1987; Brett, 1989) found no such

relationship. Since many large hospitals are also teaching hospitals located in urban centers, it becomes difficult to differentiate whether it is the size, the teaching designation, the location or a combination of factors which affect the adoption of research findings. Large, urban institutions have been found to often possess the most resources, research capacity and access to research expertise, while smaller sites were more rural and had fewer resources of all kinds (Royle et al., 2000). In a study associating hospital resource allocation with length of stay, Needham et al. (2003) concluded that inadequate adjustment for patient factor may have resulted in a negative or nil association in prior literature between teaching and non-teaching designation and length of stay.

Some authors have also referred, in their discussion papers, to organizational demographics as organizational determinants (Estabrooks, 1999a) or organizational characteristics (Dobbins et al., 2002) without actually studying the variables or providing specific data.

Organizational support

Many nursing studies have looked at organizational support in the context of research utilization. However, no studies were found which specifically looked at organizational support for the development and modification of policies and procedures in the context of nursing clinical guideline implementation. For this study, organizational support is defined as “the extent to which management at all levels and others with influence in the organization are prepared to enable changes in the systems related to clinical practice” (Bajnok & Scott, 2002, p.40).

As described by Estabrooks (2003) organizational support can be provided by many people including administrators, nursing leaders, peers, physicians and other health care professionals and administrative support staff. As part of a descriptive longitudinal study, Hatcher & Tranmer (1997) have suggested several ways that management and educational personnel can communicate support for research utilization, such as having clear research expectations incorporated in job descriptions, educational leave to attend research conferences, policies and procedures supported by research based practice and the creation of research groups and/or committees. The study included 37 Nursing Advisory Committee members and 137 registered nursing staff working in an Ontario teaching hospital (overall response rate 44%) and described variables related to research utilization in nursing.

In an Australian study designed to review the policy and procedure documentation that drives nursing practice for postoperative observation and to determine who contributes to policy development (n = 37 hospitals), Zeitz (2002) found that several different people provided input into the development and modification of policies and procedures. For example, the process for policy/procedure development or review was most often *initiated* by clinical staff (n=11), managers (n=7) and following consultation with other hospitals (n=6) and people that frequently *contributed to the process* of developing or revising a policy/procedure included staff (n=10), medical input - where required (n=9), interim committee (n=5), manager (n=4) and quality improvement committee (n=3). As well, policies/procedures were often *endorsed* either by patient care focussed committee or practice standards group (n=17), nursing executive committee (n=7), executive committee/board of directors (n=4) and department/unit or clinical

manager (n=3). These findings confirm the need to have both management and nursing staff involved with policy and procedure development.

Organizational support for the use of research

As there is limited knowledge about the role of organizational support in the context of review and modification to policies and procedures, there is a need to look at the current role played by organizational support in the implementation of research findings, including guideline recommendations in nursing practice.

A study conducted by McCaughan (2002) in three large acute care hospitals in England (n=108) found that a perceived lack of organizational support in the form of restricted access to information and unsupportive colleagues were important organizational and cultural barriers for research use. The study used a mixed methods (quantitative and qualitative) approach to examine the barriers nurses felt prevented them from using research in clinical practice. The importance of organizational support was also evident in a recent study of 400 nurses (response rate 50%) working in a large tertiary teaching hospital in Melbourne, Australia conducted by Retsas (2000). Retsas identified organizational support to use research and support from others to use research as factors that can influence the ability of nurses to base their practice on research evidence. Items found under “organizational support to use research” included nurses not feeling they had enough authority to change practice, nurses feeling isolated from colleagues with whom to discuss research findings, insufficient time on the job to read research, inadequate facilities for implementation and insufficient time on the job to implement new ideas. Example of items found under “support from others to use

research” included administration will not allow implementation; physicians will not cooperate with implementation and other staff are not supportive of implementation.

Champagne, Tornquist and Funk (1997), in a study looking at barriers to using research (n = 1989, response rate 40%), identified top three barriers to research utilization: insufficient time, lack of support from administration and lack of support from physicians. These barriers are all related to support. Another classic study by Funk, Champagne, Wiese and Tornquist (1991b) also found several barriers to the utilization of research related to lack of organizational support. Examples of barriers associated with lack of organizational support included administration not allowing implementation, lack of support from physicians, lack of support from other staff, insufficient time to read research, insufficient time on the job to implement new ideas, lack of authority to make changes and inadequate facilities for implementation. Similar results were reported by Champion and Leach (1989) who undertook a correlational study of 59 nurses (response rate 59%) from a community hospital in the southwestern United States. They concluded that the use of research was influenced by key administrative people, including the unit director ($r = 0.35, p < 0.004$), chairperson ($r = 0.32, p < 0.02$) and director of nursing ($r = 0.44, p < 0.001$). The study measured the degree to which a person’s administrative leaders and professional colleagues encouraged the use of research to identify variables related to the use of research in the clinical setting. The literature draws attention to the fact that organizational support for research use is important and can take many forms. Further research is needed to understand whether organizational support will also influence the development and modification of policies and procedures.

According to Hill (2003), nurses' contribution at all levels of management has been found to be key to the development and successful implementation of policy and change.

Perceived organizational support and organizational commitment

Studies conducted in the field of psychology found a relationship between employees' perceived organizational support and their emotional commitment to the organization (Fuller, Barnett, Hester, & Relyea, 2003; Rhoades & Eisenberger, 2002; Rhoades, Eisenberger, & Armeli, 2001). On the basis of the reciprocity norm, people are more likely to be committed to their organization when they feel that their organization is committed to them (Fuller et al., 2003). Employees who perceive organizational support have been shown to be more involved in the organization's activities and are more willing to pursue the organization's goals and to help the organization achieve its objectives (Rhoades et al., 2001). Therefore, it is hypothesized that if employees perceive that the organization supports and values the development and/or modification of policies and procedures to reflect research findings such as clinical guideline recommendations, employees will be more willing to attempt to practice according to these evidence-based policies and procedures.

Summary

Many studies are confirming the importance of organizational support to promote research use and clinical guideline implementation. However, only one study by Hatcher and Tranmer (1997) specifically highlighted the fact that support for research utilization could be conveyed by way of policies and procedures. Therefore, there is a need for further research to better understand how organizational support can influence the review and modification of policies and procedures.

Organizational stability

For this study, the construct of organizational stability is defined as the ability of an organization to retain a stable workforce and experience financial constancy. Having adequate staffing and the necessary equipment is important for optimal nursing practice. The current short-term funding formula in Ontario makes it a challenge for most health care organizations to do long-term planning. As illustrated by the Ontario Hospital Association (2004), the ability of Ontario Hospitals to plan ahead for services and resource requirements is limited by the fact that hospitals do not know in advance their annual funding amounts. As a result, a hospital may choose to incur a short-term operational deficit while expecting to receive sufficient funds at a future date. Meanwhile, health care organizations that experience deficits may be reluctant to hire nurses into permanent full-time positions or to purchase new equipment.

Funding has an impact on patient outcomes as demonstrated by Needham et al. (2003) in a study of 162 acute care Ontario hospitals (response rate 95%). These authors concluded that hospitals did not achieve a balance between spending variables such as nursing, ambulatory care, administration and support, and diagnostics and therapeutics, had significantly longer lengths of stay. For example, if too much of the hospital budget is spent on administrative support, the resulting shortage in nursing care could prolong length of stay. On the other hand, if too much of the budget is spend on nurses, the lack of administrative support was thought to also increase the length of stay. As well, the overall pattern of resource allocation of the hospital is also significantly associated with the length of stay (reduced regression model had an r^2 of 0.45).

In order to be able to deliver the best care possible to achieve the best patient outcomes, health care organizations need to be committed to research use even if it means investing in human resources or new equipment. As stated by Estabrooks “if optimal practice environments result in improved patient outcomes, and if using research is really an important dimension of quality patient care, then research use, or, in today’s jargon, evidence-based practice, will be an important feature of an optimal practice environment” (Estabrooks, 2003, p. 54).

Summary

Many authors now agree that the integration of research into practice is both an individual and an organizational process. Recent literature has included organizational policies and procedures as an organizational strategy to integrate research into practice. Since policies and procedures are often used by nurses as a source of practice knowledge, there is a need for such documents to be evidence-based, current and easily accessible.

On the other hand, the literature shows that many nurses are not aware of organizational policies and that a gap exists between written organizational policies and procedures and actual nursing practice. The extent and reasons for this gap are not well understood. Possible explanations include the possibly outdated content of organizational policies and procedures which make them irrelevant for use or the fact that the organization may not use proper channels of communication when promoting new or revised organizational policies and procedures.

Studies have found that organizational support is directly related to research use by nurses. A lack of organizational support will usually act as a barrier to the use of research findings in practice, while strong organizational support will facilitate the

implementation of research findings. One way for health care agencies to support research use is by ensuring that their policies and procedures remain up-to-date and based on the best available evidence such as clinical guidelines.

There were very few studies conducted on the topic of organizational stability and the use of research evidence or on the relationship between specific organizational demographic characteristics and the implementation of research findings. Therefore there is a need to study such relationships because they have the potential to help us better understand organizational determinants that have the potential to influence the implementation of research findings, such as clinical guidelines in practice.

Conceptual framework

A conceptual framework representing the influence of the organizational environment on the development and review of policies and procedures in the context of clinical guidelines implementation could not be found in the literature. Therefore, such a framework was developed and is presented in Figure 2-1. The framework, depicted by two circles, allows a schematic representation of the research variables. The centre of the diagram represents the review and modification of policies and procedures as an organizational strategy to facilitate the implementation of clinical guidelines and is directly influenced by the organizational environment (second circle). The framework represents the development and/or modification of organizational policies and procedures as the dependent variable, while the organizational environment is conceptualized as the independent variable.

For the purpose of this study, the organizational environment is defined by three main variables: organizational support, organizational stability and organizational

demographics. The selected variables are derived from the literature. This study will attempt to determine the organizational factors influencing the development and modification of policies and procedures in the context of clinical guideline implementation.

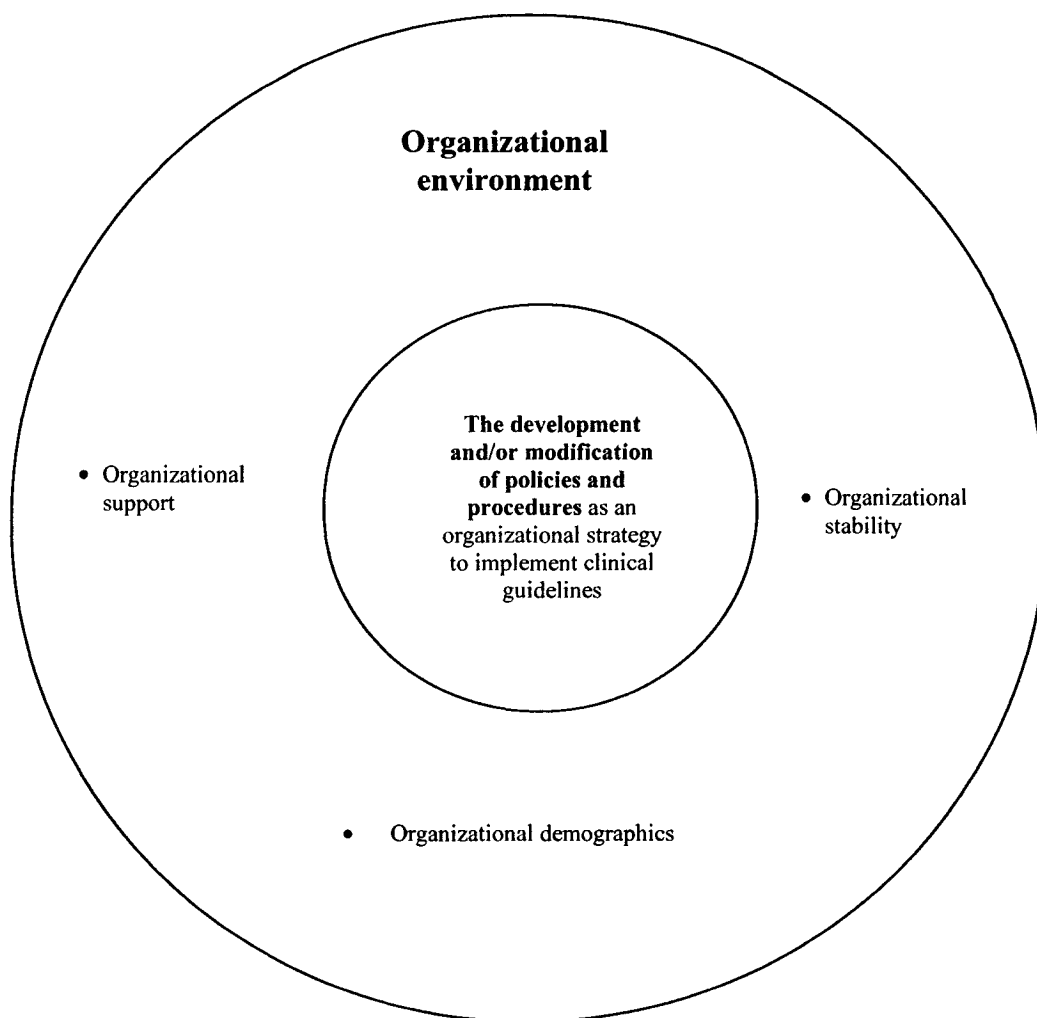


Figure 2-1: Conceptual framework

Hypotheses

Four hypotheses were generated for the secondary data analysis.

1. Nurses employed in acute care agencies are more likely to report modifications to organizational policies and procedures than nurses who work in other types of health care agencies (including community care, chronic care and rehabilitation agencies).
2. Nurses employed in agencies with a teaching designation are more likely to report modifications to organizational policies and procedures than nurses who work in non teaching health care agencies.
3. Nurses who report a high level of organizational support are more likely to report modifications to organizational policies and procedures than nurses who report a low level of organizational support.
4. Nurses who report a high level of organizational stability are more likely to report modifications to organizational policies and procedures than nurses who report a low level of organizational stability.

Operational definitions

Organizational Demographics	Specific organizational attributes of the agency such as agency type (acute care, community care, rehabilitation and chronic care) and agency designation (teaching or non-teaching).
Organizational Stability	The ability of an organization to retain a stable workforce and experience financial stability.
Organizational Support	“The extent to which management at all levels and others with influence in the organization are prepared to enable changes in the system related to clinical practice” (Bajnok et al., 2002, p. 40).
Policy	Statement that establishes an organization’s position on a particular issue. A policy statement generally includes one or more of the following: a description of WHAT, WHEN, WHO or WHERE actions which are to occur in a particular situation. Policies are usually set by higher level management (Amann, 2001; Campbell, 1998; Paige, 2003).
Procedure	Description of HOW a specific activity is to be carried out (action oriented). Outlines the concrete steps people are expected to take and the sequence in which to perform those steps. Helps ensure that all staff members are using a standard approach. Procedures are often departmental in nature rather than organizational. Procedure committees are often mixed committee including both management and front line staff (Amann, 2001; Campbell, 1998; Paige, 2003).

CHAPTER THREE: METHODS

The current thesis is a secondary analysis of data collected as part of the research study entitled Evaluation of the Dissemination and Utilization of Best Practice Guidelines by Registered Nurses Association of Ontario (Edwards et al., 2003b).

This chapter is divided into two sections: a review of the methods used in the primary study and a discussion of the methods used for the secondary data analysis. Methodological aspects of the design, sample, data collection, data analysis and ethical consideration of this research are presented.

The Evaluation of the Dissemination and Utilization of Best Practice Guidelines by Registered Nurses in Ontario

The study was conducted from January 2002 to December 2003 as part of cycle three of the Registered Nurses Association of Ontario Best Practice Guidelines project. The third cycle involved six clinical guidelines:

- Adult Asthma Care Guidelines for Nurses: Promoting Control of Asthma;
- Assessment and Management of Venous Leg Ulcers;
- Breastfeeding Best Practice Guidelines for Nurses;
- Integrating Smoking Cessation into Daily Nursing Practice;
- Reducing Foot Complications for People with Diabetes;
- Screening for Delirium, Dementia and Depression in Older Adults.

Each guideline includes a summary table of all of the recommendations. The recommendations are categorized into three sections including: practice recommendations which are intended for the nurse and nursing practice; education recommendations which focus on competencies required for practice; and organization

and policy recommendations which are intended for the organizational setting or work environment.

The goal of the primary study was to assess the pilot implementation of clinical guidelines with Registered Nurses as well as to examine the value and usefulness of the clinical guideline recommendations. The specific research objectives were as follows:

- “To document the process of best practice guideline implementation across project sites from the perspectives of clinical resource nurses, nursing staff and nursing administrators;
- To determine the effectiveness of the project on changes in nursing practice and selected clinical outcomes;
- To determine perceived utility and value of the clinical practice guidelines by clinical resource nurses, nursing staff and administrators;
- To examine factors which influence the implementation of best practice guidelines”
(Edwards et al., 2003a, p. 6).

Both principal investigators of the study (Edwards, Davies) were from the University of Ottawa. The evaluation team co-investigators were from McMaster University (Dobbins, Ploeg, and Skelly) and the Office of Nursing Policy at Health Canada (Griffin).

Research design

The main study had a pre-post design which is presented in Table 3-1.

Table 3-1: *Timing and method of data collection (pre-post design)*

Pre-implementation (baseline – one month prior to implementation)	Mid-implementation (three months into implementation)	Post-implementation (six months after implementation)
Nursing staff quantitative questionnaires	Educational session evaluation by nursing staff	Organizational demographic survey
Patient chart audits	Clinical resource nurse mid- point interviews	Nursing staff quantitative questionnaires
Patient interviews		Clinical resource nurse quantitative questionnaires
		Patient chart audits
		Patient interviews
		Clinical resource nurse final interviews
		Administrator interviews
		Nursing staff interviews

To assess clinical guideline implementation, the evaluation team used generic as well as clinical guideline specific indicators. Generic indicators included the following: “a) ratings of workshops where best practice guidelines were introduced to nurses; b) assessment of the utility and worth of the best practice guidelines; and c) ratings of factors influencing implementation (organizational culture, organizational structure, organizational stability, educational and support processes for guideline implementation)” (Edwards et al., 2001, p. 4).

Setting

As part of the study, 11 health care agencies received funding from the Registered Nurses Association of Ontario to implement clinical guidelines in their organization. To

be selected, agencies had to respond to a request for proposal (RFP) from the Registered Nurses Association of Ontario (RNAO). Selection was based on review of proposals according to pre-selected criteria and was made by RNAO staff, guideline panel members and evaluation team members. The RNAO provided funding (between \$60,000 and \$65,000) for each Best Practice Guideline pilot implementation. In kind support was also required from the agency applying to take part in the project. The agency or cluster of sites decided, as a team, on how to distribute the money. The money was mainly used to employ a clinical resource nurse to facilitate the implementation.

Sample

Nursing staff (Registered Nurses, licensed practical nurses and health care aids) completed 414 quantitative pre-implementation questionnaires (response rate 72.5%) and 316 post-implementation questionnaires (response rate 64.9%). Nursing staff were approached as per the introductory letter in Appendix B. The inclusion criteria for nursing staff were: “Registered Nurses; Licensed Practical Nurses; or health care aides; assigned to work on one of the units/wards/departments where best practice guidelines are being applied (eligible unit), not expected to go on maternity leave or to take an extended leave of absence from her clinical unit or from the agency during the six month study period” (Edwards et al., 2003a, p. 11). In addition, 10 clinical resource nurses completed post-implementation quantitative questionnaires. These nurses usually had a master’s degree. They were staff members of the institutions but were seconded to act as a resource person for the implementation of the clinical guidelines. Their main functions were to develop and provide educational programs to nursing staff as well as to lead and manage the project within a multi disciplinary team. The size of the agency as well as the

number of sites and/or units involved with the project helped determine the number of clinical resource nurses involved. The final number of these nurses was decided by the participating organization and ranged from one to four for each clinical guideline topic. Qualitative interviews were conducted with 104 participants (response rate 90%), including nursing administrators, clinical resource nurses and nursing staff. A clinical resource nurse from each agency completed an organizational demographic survey.

Sample size

The sample size for the quantitative questionnaires was calculated by the research team using the 17 clinical guidelines and was done as follows: “Initially we estimated a sample size of 340 (20 nurses per agency x 17 best practice guidelines). With power set at .90 and Z alpha set at .05 (2-tailed), this sample size is adequate to detect an effect size of .20 or greater for changes in nursing practice and clinical outcomes. We estimated a response rate of approximately 75%”(Edwards et al., 2003a, p. 14). Therefore a sample of 459 nursing staff (27 nursing staff per agency x 17 agencies) was originally planned.

A guide was created to direct sample selection (see table 3.2). Registered Nurses, Registered Practical Nurses, health care aides and other health care providers were invited to participate in the study. Each agency had different ratios.

Since the majority (94%) of participants were Registered Nurses and Registered Practical Nurses and in order to lighten the text, Registered Nurses, Registered Practical Nurses, health care aides and other health care providers will be referred to as “nursing staff” for the remainder of this study.

Table 3-2: *Sampling guide*

	If possible, sample will consist of 15 full time RN* and 5 part time RN* as well as 5 full time RPN** and 5 part time RPN**
RN* sample	⇒ if less than 15 full time RN* then supplement with part time RN*
RN* sample	⇒ if less than 20 full time or part time RN* then supplement with RPN**
RPN** sample	⇒ if less than 10 RPN** then supplement with health care aides
RPN** sample	⇒ if less than 10 RPN** or health care aides but more than 20 RN* supplement with RN*, initially using full time then using part time
	⇒ if less than 30 health care workers in agency involved with BPG implementation
	⇒ all eligible health care workers invited to participate (Edwards et al., 2003a).
*RN = Registered Nurse **RPN = Registered Practical Nurse	

The research team estimated that saturation for the qualitative interviews would occur after two or three interviews with nursing staff per unit and one or two interviews with administrators within each participating agencies. The estimated total was 120 interviews.

Sampling frame for nursing staff quantitative questionnaires

Once an agency was selected to take part in the Registered Nurses Association of Ontario Best Practice Guidelines project, the clinical resource nurse assigned to that agency or site collected a list of potential participants from which to draw the study sample, taking into account the inclusion criteria. The potential participants were listed alphabetically in three categories: Registered Nurses, Registered Practical Nurses and “other” health care providers. Each potential participant was assigned an identification number. The numbers were then sent to the evaluation team, who randomly selected the study participants. Once the selection was completed, the list of identification numbers

was returned to the clinical resource nurse who distributed an information sheet and questionnaire to every chosen participant. Participants were asked to complete the questionnaires and to return them directly to the evaluation team. If they chose not to participate in the study, they were still asked to return the blank questionnaire to the evaluation team. To improve response rates, a second, and at times a third, questionnaire was mailed out to non-respondents, at monthly intervals.

Sampling frame for qualitative interviews

The clinical resource nurses at each agency or site identified two or three nursing staff and two or three administrators who were involved with the implementation of the clinical guidelines and who would agree to participate in a 20-minute taped telephone interview with a member of the evaluation team. The clinical resource nurses were advised to identify individuals who had a positive experience with the implementation of the clinical guidelines as well as those who had a less favorable experience. Potential participants were then contacted by research assistants, who explained the purpose of the interview. If they agreed to participate, the research assistant sent them consent forms and information sheets. Interviews were conducted by research assistants and were audio-taped with the verbal consent of each participant. The taped interviews were then transcribed. The interviews took place approximately six months after the initiation of the pilot implementation of the clinical guidelines. While some participants might have completed both the quantitative questionnaire and the qualitative interview, the research team would not be aware of such an occurrence, making it impossible to match the data from the two sources.

Data collection

Participants in the study were sent a pre-implementation and a post implementation questionnaire. If they completed the pre-implementation questionnaire, they were sent the short version of the post-implementation questionnaire. If they did not complete the pre-implementation questionnaire, they were sent the long version of the post-implementation questionnaire which included the demographic characteristics included in the pre-implementation questionnaire.

The post-implementation questionnaires included several scales to measure various aspects of clinical guideline implementation. The questionnaire included sections on participant demographics, the characteristics of the innovation, the perceived worth of the clinical guideline, assessment and clinical management of the topic of the clinical guideline, organizational structure, referral to outside services, educational and supportive processes, organizational stability and organizational support, as well as questions about the national certification program offered by the Canadian Nurses Association.

Quantitative data cleaning

Data were entered and analyzed using SPSS 10.0 for Windows. Data entry accuracy was assessed by checking for out-of-range values and examining skip patterns. Double entry was done on approximately 20% of the data to ensure accuracy. Data accuracy was assessed at 99%.

Data coding/recoding

Prior to data analysis, several variables were recoded and/or computed. It was necessary to recode the data when a limited number of answers were available for certain

variables.

Missing Data

If 50% or less of the items on a scale were missing, only the missing values were replaced by an imputed mean. If more than 50% of the answers on a scale were missing, all the responses to that scale for that individual were coded as missing.

Ethical considerations

Ethics approval for the study was obtained from the University of Ottawa Health and Social Sciences Ethics Committee in September 2000. Following standard procedures, ethics approval was renewed in 2001, 2002 and 2003. The most recent ethics approval is included in Appendix C.

The current study: secondary data analysis

A secondary analysis of data from the primary study described the nature and extent of changes to policies and procedures and examined organizational factors influencing the development and modification of policies and procedures in organizations that have participated in a pilot implementation and evaluation of clinical guidelines developed by the Registered Nurses Association of Ontario. Secondary analysis permits further analysis of data already collected without additional recruitment and time commitments from participants, which decreases the burden on them (Szabo & Strang, 1997). As well, secondary analysis allows for maximal use of data that are often very expensive to collect (Clarke & Cossette, 2000).

Research design

A cross-sectional post-only design was selected for the secondary data analysis. A mixed-method approach was used with triangulation of data sources, including quantitative questionnaires from nursing staff as well as qualitative interviews with nursing administrators, clinical resource nurses and nursing staff. There are now convincing examples in the literature showing the benefits of combining quantitative and qualitative data sources in secondary analysis (Dixon-Woods, Agarwal, Young, Jones, & Sutton, 2004), including generating knowledge that would otherwise be unachievable without the integration of both quantitative and qualitative data into a single study (Polit & Hungler, 1999). Also, data triangulation reveals the varied dimensions of a phenomenon while helping to create a more accurate description (Streubert Speziale & Carpenter, 2003, p. 300).

Setting

A total of 23 units in 11 agencies participated in the pilot implementation of the Registered Nurses Association of Ontario cycle three Best Practice Guidelines project. Some agencies were large institutions with several sites while others were smaller organizations.

Sample - Cycle Three

Only data from cycle three of the Registered Nurses Association of Ontario Best Practice Guideline study was used for this secondary analysis. A total of 316 post-implementation questionnaires and 104 post-implementation interviews were reviewed for the secondary data analysis. Response rates are included in Table 3-3.

Table 3-3: *Response rates for quantitative questionnaires and qualitative interviews*

Agency	Total staff post-questionnaires sent	Post- Response Rate N (%)	Total CRN*, staff and administrators approached for interviews	Interviews Response Rate N (%)
A	51	38 (74.5%)	CRN: 2 Staff: 8 Admin.: 4	CRN: 2 (100%) Staff: 5 (62.5%) Admin.: 4 (100%)
B	51	43 (84.3%)	CRN: 1 Staff: 6 Admin.: 2	CRN: 1 (100%) Staff: 6 (100%) Admin.: 2 (100%)
C	17	16 (94%)	Staff: 2 Admin.: 2	Staff: 2 (100%) Admin.: 2 (100%)
D	56	29 (51.8%)	CRN: 1 Staff: 9 Admin.: 5	CRN: 1 (100%) Staff: 7 (77.8%) Admin.: 5 (100%)
E	29	25 (86.2%)	CRN: 1 Staff: 4 Admin.: 1	CRN: 1 (100%) Staff: 4 (100%) Admin.: 1 (100%)
F	79	47 (60%)	CRN: 3 Staff: 6 Admin.: 3	CRN: 3 (100%) Staff: 5 (83%) Admin.: 3 (100%)
G	46	21 (45.7%)	CRN: 4 Staff: 6 Admin.: 3	CRN: 4 (100%) Staff: 4 (66.7%) Admin.: 3 (100%)
H	23	21 (91.3%)	CRN: 1 Staff: 2 Admin.: 2	CRN: 1 (100%) Staff: 2 (100%) Admin.: 2 (100%)
I	78	46 (59%)	CRN: 8 Staff: 13 Admin.: 5	CRN: 7 (87.5%) Staff: 9 (69.2%) Admin.: 4 (80%)
J	21	13 (61.9%)	CRN: 1 Staff: 2 Admin.: 2	CRN: 1 (100%) Staff: 2 (100%) Admin.: 2 (100%)
K	36	17 (47.2%)	CRN: 1 Staff: 4 Admin.: 5	CRN: 1 (100%) Staff: 4 (100%) Admin.: 4 (80%)
Total	11	487	316 (64.9%) CRN: 23 Staff: 62 Admin.: 34	CRN: 22 (95.7%) Staff: 50 (80.6%) Admin.: 32 (94%)

*Some clinical resource nurses were assigned to more than one site or agency.

Data collection tools

Instrument to look at policies and procedures

The evaluation team for the primary study selected the Perceived Characteristics of Innovation scale by Moore and Bebbasat (1991) to measure how participants felt about new innovations. They also added two statements about policies and procedures to the

scale. Participants were asked to rate on a four-point Likert scale (1=strongly disagree, 4=strongly agree) the extent to which they agreed or disagreed with specific statements. This secondary data analysis only looked at the two new items added by the research team. The two new items asked participants to assess the extent to which the clinical guideline introduced as part of the Registered Nurses Association of Ontario project fit with standard unit policies and procedures and whether unit and/or agency policies and procedures had been modified to reflect the guideline. Cronbach's alpha for the two items was 0.73. According to Fain (2004), an alpha coefficient of 0.80 is an acceptable level of reliability for a well-developed psychosocial measurement instrument, while an alpha coefficient of 0.70 is considered acceptable for a new instrument.

Instrument to measure organizational support

The instrument to measure organizational support included five items and was adapted from the support/resistance sub-scale of the Implementation Attitude Questionnaire developed by Schultz and Slevin (1975). The instrument measured the extent to which nursing staff perceived organizational support during the implementation of the clinical guidelines. Respondents were asked to rate on a four-point Likert scale the extent to which they agreed or disagreed with specific statements, such as "top management has supported staff to implement the Registered Nurses Association of Ontario Best Practice Guidelines". The Cronbach alpha for the organizational support tool was 0.85 (Edwards et al., 2004).

Instrument to measure organizational stability

The organizational stability instrument included seven items. Respondents were asked to rate on a five-point Likert scale (1=strongly disagree, 5=strongly agree) the

extent to which organizational changes, such as financial pressures, staff cuts, staff turnover and absenteeism, had taken place in their organization in the previous six months. Using factor analysis, the seven items were then grouped into two factors, the first pertaining to the concept of staffing and the second to finances. The Cronbach's alpha for the organizational stability tool was 0.81; more specifically it was 0.79 for factor 1 and 0.69 for factor 2 (Edwards et al., 2004, p. 16).

These three instruments are reproduced in Appendix E. The selected questions from these scales are framed to be easily identified. In addition, a list of the selected questions from the semi-structured interviews with administrators, nursing staff and clinical resource nurses is provided in appendix F. The final data collection tool comprised two questions from the organizational demographics survey, the first about designation as a teaching facility, and the second about the total number of Registered Nurses and Registered Practical Nurses. A copy of the organizational demographics survey is included in Appendix G.

Organizational Demographics

For the purpose of this study, the variable "organizational demographics" includes two sub-variables: agency type (acute care, community care, rehabilitation, chronic care) and agency designation (teaching or non-teaching).

Data coding/recoding

As described in the data analysis section, several variables were recoded and/or computed prior to the detailed analysis. Data from individual units were grouped and recoded to provide an organizational perspective. Finally, about one percent of the data

were recoded as missing because the answers participants provided were not an option on the Likert scale.

Missing data

The quality of the data set is also a concern with secondary analysis (Clarke et al., 2000). However, the data set used in this secondary analysis was thoroughly verified and cleaned by the main study research team, which included the author working as a Research Assistant.

Overall, the quantitative questionnaires had little missing data. There were no missing data for the two organizational demographic variables (type of agency and agency designation). Interestingly, participants appeared to have been more reluctant to answer questions on the organizational stability scale than on the organizational support scale. On average, there was 8% of missing data for the organizational support scale compared to 11% for the organizational stability scale. Due to the fact that there was no option on both Likert scales for “don’t know,” about one percent of the participants provided answers that were not part of the scale. A decision was made to recode the variables that were not part of the Likert scale as “missing”. This increased the percentage of missing data to 9% for the organizational support scale and to 13% for the organizational stability scale. According to Clarke and Cossette (2000) less than 15% of missing data for a variable is considered acceptable. Intriguingly, a specific statement – “infusion of new money into organization” - on the organizational stability scale had 19% missing data.

Data analysis

Data from the quantitative questionnaires answered by nursing staff were analyzed using SPSS 11.0 for Windows. To describe the nature and extent of changes to policies and procedures (first research objective), the four-point Likert scale for the statement “unit and/or agency policies/procedures have been modified to reflect the Registered Nurses Association of Ontario Best Practice Guideline” was collapsed into nominal dichotomous measures (disagree (1-2), agree (3-4)), and frequency distributions were generated for each agency.

As well, data obtained from answers to specific questions in the qualitative interviews were reviewed. Codes (yes, no and don't know) were created to describe whether there were changes to policies and procedures for each organization during guideline implementation. Miles and Huberman (1994) refer to this type of analysis as quantizing, the first level of qualitative-quantitative linkage. Discrepancies in the data, such as two administrators working on the same unit providing contradictory answers to the same question or participants answering “no” that policies and procedures had not been revised, but “yes” that they had been modified, were reviewed with the thesis advisor. Both the advisor and the author of the secondary data analysis agreed on answers. In addition, for each of the six clinical guidelines, a matrix was developed using quotes from the transcripts of all interviews of administrators and clinical resource nurses. The quotes were then grouped by agency (11) and reviewed. The quotes best representing the reality of the organization were selected to further describe the nature of the changes within each agency. The coding process and selection of quotes was reviewed with the thesis supervisor.

Data from both the qualitative interviews and the quantitative questionnaires were also used to examine organizational factors influencing the development and modification of policies and procedures (second research objective). The author did a content analysis of the transcripts of the qualitative interviews, looking for information pertaining to organizational support and organizational stability. Again, for each clinical guideline, a matrix was developed using quotes from every participant from all the interviews with administrators, clinical resource nurses and nursing staff transcripts. The quotes were then grouped by agency ($n = 11$) and reviewed. The quotes best representing the reality of the organization were selected to describe factors in the organizational environment having the potential to influence the development and modification of policies and procedures. Two tables, one pertaining to staffing, equipment and workload, the other pertaining to organizational issues and staff turnover, were created to summarize the content of the transcripts for every agency. Both tables are presented in appendix I and J respectively.

Additionally, quantitative results from both the organizational support scale and the organizational stability scale were compiled into basic frequencies, including means and standard deviations (*SD*). A summary of the numerical data gathered was then compared to the results of the content analysis of the qualitative data to provide a more complete understanding and description of the organizational environment for each agency and to ensure greater validity. Miles and Huberman (1994) describe this process as linkage between distinct data types.

The possible relationship between the review and/or modification of policies and procedures and the organizational support and organizational stability was examined by

comparing the mean score of nursing staff who disagreed that there were modification of policies and procedures with the mean score of nursing staff who agreed that there were modification to policies and procedures for both the organizational support scale and the organizational stability. These comparisons were done using an independent student *t*-test. A more detailed analysis of the possible relationship between modification of policies and procedures and organizational demographics, organizational support and organizational stability variables were performed using chi-squares analysis. To facilitate the analysis, the four-point Likert scale used in the organizational support instrument was collapsed into nominal dichotomous measures (disagree (1-2), agree (3-4)) while the five-point Likert scale used in the organizational stability instrument was collapsed into a three item ordinal measure (not at all (1-2), somewhat (3), to a large extent (4-5)).

Finally, a contrast case study was constructed. The agency with the most documented organizational challenges while implementing the clinical guidelines (e.g. perceived lack of support, staff cuts, and high staff absenteeism) was contrasted with the agency with the least organizational challenges. The purpose of the contrast case study was to explore the possible relationship between organizational challenges and the review and/or modification of policies and procedures. Conclusions and interpretations were drawn from the displayed data.

Ethical considerations

The Health Sciences and Science Research Ethics Board of the University of Ottawa approved the secondary data analysis (see certificate in Appendix H). The purpose of the secondary data analysis is consistent with the purpose of the primary research, so the participants' original consent still applies. The secondary data analysis

did not involve contacting any of the participants from the Registered Nurses Association of Ontario Best Practice Guideline project. The participant and agency names were not available in the dataset, thus maintaining anonymity.

CHAPTER FOUR: RESULTS

This chapter provides results of the secondary analysis regarding the nature and extent of policy changes as well as organizational factors influencing policy revision. To answer the two thesis questions, the quantitative data is presented followed by the qualitative data. The purpose of the qualitative data is to help describe or explain the quantitative results.

First, selected organizational demographic characteristics of the 11 agencies are presented. Next, the nature and extent of the changes to policies and procedures are described from the perspective of nursing administrators, clinical resource nurses and nursing staff. Subsequently, organizational factors influencing revisions to policies and procedures are examined. Finally, the relationships between organizational demographics, organizational support, organizational stability and the modification of policies and procedures are presented.

Organizational Demographics

As shown in Table 4-1, only four of the 11 agencies had a teaching designation, while six were acute care facilities.

Table 4-1: *Selected organizational demographics variables*

Agency	Designation	Type
A	Non-teaching	Acute care
B	Non-teaching	Acute care
C	Non-teaching	Community care
D	Non-teaching	Acute care
E	Non-teaching	Community care
F*	Teaching	Acute Care
G	Teaching	Rehabilitation
H	Teaching	Acute Care
I**	Teaching	Acute Care
J	Non-teaching	Chronic care
K	Non-teaching	Community care

* Agency F is a recently amalgamated agency and implemented the guidelines over two large and distinct sites.

** Agency I is also a recently amalgamated agency and implemented the guidelines over four large and distinct sites.

A total of 23 units, distributed across 11 agencies, took part in cycle three of the Best Practice Guideline project. About half the units (12 out of 23) employed both Registered Nurses and Registered Practical Nurses. Approximately 62% of the Registered Nurses worked full-time but the percentage ranged from as low as 27% in agency J to as high as 100% in agency C. Approximately 41% of the Registered Practical Nurses worked full-time. Of the 23 units, nine did not employ any Registered Practical Nurses. However, two units in agency G did not complete the organizational demographics survey. A detailed table presenting proportions of full-time and part-time Registered Nurses and Registered Practical Nurses for each unit is included in appendix H.

Description of the nature and extent of the changes to policies and procedures

Research objective 1: To describe the nature and extent of changes to policies and procedures from the perspective of nursing administrators, clinical resource nurses and nursing staff.

Quantitative questionnaires

Ten out of the 11 agencies had 75% or more of their surveyed nursing staff agreeing that unit policies and procedures had fit well with the clinical guidelines. As displayed in Table 4-2, the majority of nursing staff also perceived that unit and/or agency policies and procedures were modified to reflect the clinical guidelines. Out of the 11 organizations, eight had 75% or more of the surveyed nursing staff agreeing that unit and/or agency policies and procedures have been modified to reflect the guidelines.

Table 4-2 – *Nursing staff' perceptions of agency modification to policies and procedures to reflect guideline recommendations*

Agency	Modification to policies and procedures*		
	Disagree (1-2) N (%)	Agree (3-4) N (%)	Number of Responses N
A N=38	7 (19%)	30 (81%)	37
B N=43	6 (15%)	35 (85%)	41
C N=16	3 (23%)	10 (77%)	13
D N=29	18 (75%)	6 (25%)	24
E N=25	6 (25%)	18 (75%)	24
F N=47	13 (33%)	26 (67%)	39
G N=21	4 (22%)	14 (78%)	18
H N=21	4 (20%)	16 (80%)	20
I N=46	12 (28%)	31 (72%)	43
J N=13	1 (10%)	9 (90%)	10
K N=17	3 (19%)	13 (81%)	16
Total N=316	77 (27%)	208 (73%)	285

*Based on a four-point Likert scale (1=strongly disagree, 4=strongly agree)

Qualitative interviews

Content analysis of the qualitative transcripts confirmed findings from the questionnaires. Generally, administrators, clinical resource nurses and nursing staff perceived that unit policies and procedures fit totally or partially with clinical guideline recommendations before guideline implementation. Some agencies (four out of eleven) changed their documents and/or forms in preparation for the project.

[The BPG did not fit totally with the policies and procedures], we changed some in preparation for this project. We changed some forms... some protocols We ... did that as part of the project, but prior to that, things didn't fit at all. [Administrator]

Yes it did fit because ... we ended up changing the flow sheets and the assessment sheets to make it fit with what was already being done. We ... looked at a patient pathway ... following the patient through the process and tried to tailor that. So yes that was a good fit. [Clinical resource nurse]

A specialty unit within agency B perceived that the clinical guideline recommendations were not adapted to the reality of the unit.

There are a lot of the policies and procedures put in place at the launch of the program, but again none of them are adapted [to the unit], so ... no [the BPG recommendations did not fit with policies and procedures in unit]. Some could be followed, some couldn't be. [Staff nurse]

For the [specialty unit], it did not fit as well... it's still applicable, but not quite, not really. ... We're dealing with [a population with special needs] which is a whole different set. And ... this guideline was geared to [a different population]. [Clinical resource nurse]

As well, a few nurses perceived that one recommendation from a specific Registered Nurses Association of Ontario clinical guideline conflicted with a Health Canada guideline.

... There were two policies that [the guidelines] seemed to conflict with. ... This was brought up ... by [other health care professionals] ... at the [community care agency], but then also by [a health care professional] at the hospital. ... They felt it went against... [the other well established guideline]. [Clinical resource nurse]

Participants at seven out of the 11 agencies stated that they did not have written policies and procedures on the topic of the clinical guidelines and that policies and procedures were developed as part of the project.

The policies and procedures, I wrote them about a month and a half ago. So technically now they fit. There was none [prior to the project]. [Clinical resource nurse]

Well interestingly enough, none of the sites had policies and procedures when we started. So as part of the guideline implementation we've actually written and implemented them. [Clinical resource nurse]

A clinical resource nurse noted that the development or modification of policies and procedures would not be the same at every site, even if the same guidelines were being implemented. This was related to the fact that one of the sites had considerable experience dealing with the clinical guideline topic, while the other site was less experienced.

...The [staff at the community agency] were really interested in starting to set up a program, so they were really interested in having guidelines to follow in setting up that program. Where the other site had a fairly high level of knowledge and they sort of got more focused on some of the other aspects of it that maybe they hadn't already incorporated into their care... You know, when you learn new things, you work more in the bases and then you start adding on layers... I think that was what was happening to the nurses at the other sites. They were adding on the extra and the more detailed aspects of the guidelines. [Clinical resource nurse]

As part of the interview, administrators were asked if there had been a review of the guideline recommendations by the organization's committee responsible for policies or procedures. To analyze the answers provided, the content of the transcripts were coded into three categories: yes, no and not sure. Interestingly, in two separate agencies, administrators working out of a same unit did not have the same responses. The different answers reflect that the process of reviewing policies and/or procedures was not always

well communicated even on the same unit within an organization. As well, the review process was not always a formal one.

I believe that [a review] is happening sort of behind the scenes. I haven't been part of that committee. But I understand that they have been sort of re-evaluating the guideline and taken feedback from the end users. [Administrator]

Finally, administrators and clinical resource nurses were asked if there had been any modifications to policies and/or procedures in their organization as a result of implementing clinical guidelines. Again, a variety of answers were provided. For a second time, two separate agencies had some administrators reporting modifications while others on the same unit reported no change. In addition, administrators and clinical resource nurses provided a variety of examples of modifications to policies and procedures.

Again we're looking at the policy ... or the procedure around [the specific BPG]. With the running of the clinic there is a manual being developed ... for orientation purposes for the nurses as well as supporting them when they are providing intervention to clients with [specific] concerns. [Administrator]

Even in terms of equipment, we now, as a standard issue in the nursing bags that we offer, we put the [equipment] in. ... We've changed our forms to include the risk assessment. [Administrator]

A clinical resource nurse perceived that not only policies and procedures were reviewed but even the philosophy and the strategic plans of the organization were changed.

There's also sort of a strategic direction, because we're going through sort of functional planning and rebuilding our whole organization, like literally. Also a look at talking about sort of the philosophy of even having you know [the behavior] allowed in the buildings; like right now there are rooms [to permit the behavior]

and so the whole notion of [the behavior] is definitely on the agenda and will definitely have a huge impact on our future and architecture and everything else... So I think it is being incorporated into sort of the future planning policy and the future architectural buildings. [Clinical resource nurse]

While reviewing the transcripts, it became apparent that a wide range of changes to policies, procedures, and other written documents were made throughout the 11 agencies taking part in the project. Table 4-3 provides a summary of examples of changes made to policies, procedures and other written documents.

Table 4-3: *Modifications to policies, procedures and other written documents (as described in transcripts)*

Agency	Advocate for environment that promotes BPG	Procedure for certification (part of)/certificate	Clinical/patient pathways/procedures/protocols/standards of care/flow sheets/charts/assessment form	Community program (change in)	Introduction of new forms (various) including documentation	Nursing bags (new equipment in)	Orientation package/manual	Orientation process/policy	Policies	Supply and ordering process	Triage process
A			X		X						X
B			X						X		
C			X	X			X	X	X		
D			X		X						
E			X		X	X	X	X		X	
F			X								
G			X								
H			X						X		
I	X								X		
J			X								
K		X	X		X						

***Description of organizational factors
influencing the revision of policies and procedures***

Research objective 2: To examine organizational factors influencing revisions to policies and procedures in organizations that have participated in a pilot implementation of best practice guidelines.

Organizational Support

Quantitative questionnaires

Data from the organizational support scale were analyzed using frequencies. An example of the support scale is provided in appendix D. Initially, the support scale was studied as a whole. Then the five sub-variables: support by top management, change readily adopted by nurses, sufficient time and training, adequate number of qualified staff and equipment and supplies needed were examined individually. A bivariate analysis was conducted comparing nursing staff' perception of organizational support with the percentage of nursing staff who agreed that there was modification to policies and procedures and those who disagreed that modification were made.

According to data from the quantitative questionnaires, approximately 75% of nursing staff surveyed perceived that their organization was supportive in facilitating implementation of the clinical guidelines. More specifically, 81% perceived that top management had supported staff to implement clinical guidelines, 77% thought that the organization had the equipment and supplies needed to implement clinical guidelines, and 70% perceived that they had adequate numbers of qualified staff to implement clinical guidelines.

Qualitative interviews

Data from the transcripts were reviewed according to the five sub-variables of the quantitative questionnaires. A summary of the data with regards to organizational support is presented in Appendix I.

Staffing

Administrators at six out of the 11 agencies reported that staffing levels at their facilities were adequate to implement the clinical guidelines. In contrast, nursing staff at seven out of the 11 agencies frequently reported being short staffed or too busy to take on new tasks. Clinical resource nurses also reported staffing as being inadequate in many instances. There is a marked difference between the perceptions of administrators and that of nursing staff and clinical resource nurses regarding staffing adequacy. As well, staffing levels appeared to vary greatly between units. Whereas one unit within an agency reported being constantly short staffed, another unit within that same agency perceived staffing levels to have been sufficient. This type of unit discrepancy appeared in four of the eleven agencies.

The main challenge for most (eight out of 11) agencies was to replace staff while they attended the educational sessions.

...It was difficult to attend the education sessions because we had to do it in our own time, sometimes after a night shift. It took a long time, but we did get all the education in the end, but it was quite difficult. [Staff nurse]

You never have as much [staff] as you might like. Our nursing staff, if you're taking them off to do education then you've got to find other people to replace them on the unit. [Administrator]

Other challenges included working with nurses from temporary placement agencies who did not know about the clinical guideline recommendations as well as working with new staff, including recently graduated nurses, who had limited experience.

Equipment

The majority of the people interviewed reported having enough equipment to implement the clinical guidelines. One agency reported that doctors were taking supplies, so staff had to hide them. Consequently, other nurses on that unit who were not aware of the hiding place could not find the supplies.

The doctors were actually stealing them, we had to hide them from them. [Staff nurse]

Well the thing is, things kept moving. So you'd find [supplies] in one place in one time and [supplies] moved and went elsewhere... when we did find them, they sometimes moved. [Staff nurse]

Unit workload

Acute care, rehabilitation and chronic care agencies

Workload was perceived as a barrier to clinical guideline implementation on most units in the acute care, rehabilitation and chronic care agencies. For a few units, work design contributed to the problem.

And in fact sometimes physicians were even discharging patients before the nurse could get back to them, just to clear out the back hall sort of idea. [Clinical resource nurse]

... because it wasn't always the same staff first of all that, one staff member would assess the patient. Another staff member would do the treatment and then the doctor would reassess and discharge before the nurse had, you know seen. And obviously when you have really, really sick patients, you get them started off with the treatment and then you move on to the next thing and you may not always get back to the first patient. Somebody else kind of hops

in; so it's really disjointed in a lot of ways as far as following up on these people. [Clinical resource nurse]

The types of units as well as patient acuity on a specific unit were also reported to have been a challenge.

And just the type of unit I work on, the turnover is, we may have 15 or 20 patients in a day, along with 15 to 20 discharges, so the admission and discharge was the highest priority. [Administrator]

... we're getting a lot of clients with multiple problems, so ... we have to address the more urgent ones to start off with. And then ... if we didn't get to [the BPG related problem], then ... make another follow-up, a follow-up, usually we cannot date follow-ups for another two or three months because we're all booked. [Staff nurse]

One agency used clerical help to support nurses.

The clerical person has more time to put things together for the nurses, to identify, to prompt the nurse to do the screening and this sort of thing. [Clinical resource nurse]

Another agency incorporated the clinical guideline recommendations as part of the day-to-day routine, therefore limiting the impact on the workload of nurses.

[The recommendations] became part of the routine and follow-up with nurses. And again, we have tools in place that ... actually captures this kind of information and day-to-day caring for patients. ... We have our own care plan. So the information gathered as part of the pilot project is actually implemented and used in a care plan. So it becomes part of the day-to-day care of patients. [Clinical resource nurse]

Having too many initiatives at the same time such as other new training programs, new charting systems and new workload documentation, resulting in an increased workload, was reported by nurses at the rehabilitation agency.

Yes, ... I'd say that [unit/agency workload] was a barrier and that the initiatives and the other forms and the other things in the hospital that were getting implemented. There's the [training] that was starting the rehabilitation and that's a computer thing. And there's also nursing workloads that started during the time. The nurses have to document all of the workload, all their patients on the computer as well as other initiatives, such as falls, pain management, that were pretty major as well that were occurring. As well as the new chart system coming into place, which also, it's a new chart, but also a new way of charting, in terms of finding goal leaders and charting goals in certain parts of the chart. Really a lot ... of things and ... all of those things at once made perhaps the nurses' workload too high. [Clinical resource nurse]

Community care agencies

Workload was not perceived to be a barrier to clinical guideline implementation for two of the three participating community care agencies. Nurses reported experiencing flexibility in scheduling their appointments with clients or being given extra time with patients in order to implement clinical guideline recommendations in two of the three community care agencies. Nurses who worked at the third community care agency indicated that a severe infectious disease outbreak during clinical guideline implementation had actually resulted in a decreased workload:

Again going back to [the outbreak], due to [the outbreak], for about a 3 week period we didn't get very many [new clients] at all because no one was leaving the hospital. [Administrator]

However, midway through the clinical guideline implementation project, that same community care agency was awarded a new contract which increased workload.

Organizational stability

Quantitative questionnaires

Data from the quantitative organizational stability scale were analyzed using basic frequencies. An example of the stability scale is provided in appendix D. Initially, the stability scale was studied as a whole. Then the seven sub-variables: financial pressure, staff cuts, high staff turnover, infusion of new money, high staff absenteeism, hiring of new staff and increased number of casual nurses were examined more closely. It is important to note that the topic of “staffing” is found in both the organizational support scale and the organizational stability scale.

Based on the five-point Likert scale from the quantitative questionnaires, only 24% of nursing staff perceived organizational changes to have happened to a large extent (score of 4 and 5) during the six month pilot implementation. More specifically, only 10% of nursing staff perceived an infusion of new money into their organization and only 20% perceived an increasing percentage of casual nurses. As well, only 23% of nursing staff perceived staff cuts to a large extent and only 22% perceived high staff absenteeism.

Qualitative interviews

Data from the transcripts were reviewed according to the seven sub-variables of the quantitative questionnaires. A summary of the data with regards to organizational stability is presented in Appendix J.

Organizational issues

Change in management and organizational restructuring appear to have been a common issue for nine out of the 11 agencies. This finding can appear to contradict the findings from the quantitative questionnaires completed by nursing staff but may be

explained by the fact that specific questions pertaining to organizational issues such as change in management and organization/agency restructuring were asked in the qualitative interviews but not in the quantitative questionnaires. As well, the data from the qualitative interviews include the perceptions of nursing administrators and clinical resource nurses as well as the perceptions of nursing staff whereas the quantitative questionnaires were only answered by nursing staff.

For some, organizational issues included changes at the unit level as well as with work design.

A number of changes at the unit level, some structural changes... we've been sending staff through a whole month of education and preparing to work in the step down unit and orienting for the new unit and so it's just a lot of things going on. ... When you look at that in terms of overall workload and implementation that would have an impact, absolutely, as opposed to if the best practice guidelines was the only project that was in progress.
[Administrator]

Specific organizational issues included a community care agency losing a nursing contract at the end of the BPG project.

... We had a contract loss, so ... there was a lot of health restructuring and those kinds of environmental uncertainties impacting on us. ... We compete for the nursing contract in community and we lost our contract. Fortunately the timing worked well, but ... there was a lot of impact in terms of ... dealing with those issues while we were winding up the project and the research. [Administrator]

In addition, another agency experienced a change in "champion" at the beginning of the project which meant that the new champion almost had to start over re-educating the nursing staff.

But what I found was when I first came in, I said “are you aware? You had the education?” And they would say “yes”. And I said are you aware of the screening tools? And they said “no”. And “do you know where they are?” And they didn’t know. So I was sort of like “OK, these are the screening tools, you know” So it was more like I had to reinforce it and re-educate. [Clinical resource nurse]

A specific unit appeared to have been one with several challenges.

On one floor, there was a new manager that came to the floor midway through and that floor has serious issues on it already. It’s just at the floor level, but the staff is very unhappy there. And ... management is very unhappy with some of the staff. And so there are some sort of big issues going on there which impacts everything that you try to do on that floor. [Clinical resource nurse]

“Logistical issues” in terms of where to place new forms as well as challenges with evening and night time admissions were also reported.

Because we have so many forms around for so many ... things, we don’t have the online system yet. So sometimes it’s difficult for nurses to be aware of where the form is supposed to be. And sometimes ... admissions can come in the evening and night time, [it] can become more challenging for the staff to do the screening at that time because ... [there is] less staff around ... and with the admissions, there’s always a whole chunk of work that they have to complete. [Clinical resource nurse]

Staff turnover

Staff turnover appeared to have been a challenge for four of the 11 agencies while the use of staff from temporary placement agencies was reported to have been an issue by participants from two agencies.

[Staff turnover was high] lately and [it caused problems] because now we have to teach all the new people coming in. [Staff nurse]

Relationship between perceived organizational support and perceived organizational stability and the perceived modification to policies and procedures

The possible relationship between perceived organizational support and perceived organizational stability with the perceived modification to policies and procedures is now examined.

Table 4-4 shows a statistically significant difference ($p < 0.0001$) in perceived levels of organization support between nursing staff who agreed there had been modification to policies and procedures and nursing staff who disagreed that modification to policies and procedures had been made. Nursing staff' perceptions of organizational support included: support by top management, being provided with sufficient time and training, an adequate number of qualified staff and the equipment and supply needed to implement the clinical guideline recommendations. No statistically significant relationship was found between nurses' perceptions of whether or not modification to policies and procedures had been made and their perceptions of organizational stability.

Table 4-4 – Relationship between perceived organizational support and perceived organizational stability and the perceived modification to policies and procedures

Modification to policies and procedures*	Organizational support (based on a four-point Likert scale) Mean (SD)	Organizational stability (based on a five-point Likert scale) Mean (SD)
Disagree (1,2)	2.51 (.58)	2.62 (.94)
Agree (3,4)	2.99 (.50)	2.44 (.92)
Overall	2.86 (.57)	2.49 (.92)
Mean difference	-0.48	+0.17
<i>t</i> -value	-6.834	+1.40
<i>p</i> value	< 0.0001	0.163

* based on a four-point Likert scale

Hypotheses

A further analysis will look at each of the four hypotheses and assess the relationship between nurses' perceptions of modification to policies and procedures and specific organizational demographics (type of agency and agency designation) and nurses' perceptions of organizational support and organizational stability.

Hypothesis 1 Nurses employed in acute care agencies are more likely to report modifications to organizational policies and procedures than nurses who work in other types of health care agencies (including community care, chronic care and rehabilitation agencies).

It was hypothesized that nurses from acute care agencies, which are often large organizations with large budgets, would be more likely to report modifications to organizational policies and procedures, since such agencies would probably have more individuals who could be assigned to such a task.

Table 4-5 - *Bivariate analysis of type of agency and perceived modification to policies and procedures following guideline implementation*

Factor	Modification to policies and procedures*			χ^2 value	p value
	Disagree N (%)	Agree N (%)	Total N (%)		
Organizational demographics:					
Type of agency					
Acute care	60 (29.5%)	144 (70.5%)	204 (71.6%)	2.087	0.149
Others	17 (20.9%)	64 (79.1%)	81 (28.4%)		

* Based on a four-point Likert scale (1=strongly disagree, 4=strongly agree)

As shown in table 4-5, the analysis shows no statistically significant difference ($p = 0.149$) comparing the type of agency and the nursing staff who agreed there had been modifications to policies and procedures with the nursing staff who disagreed that modifications had been made.

Hypothesis 2 Nurses employed in agencies with a teaching designation are more likely to report modifications to organizational policies and procedures than nurses who work in non-teaching health care agencies

It was hypothesized that nurses working in agencies with a teaching designation would be more likely to report modifications to organizational policies and procedures, since such agencies probably have a larger budget than their non-teaching counterparts. As well, it was hypothesized that agencies with a teaching designation might be more likely to ensure that they are aware of the latest research findings and that their internal policies and procedures would be current and reflect best practices.

Table 4-6 - *Bivariate analysis of agency designation and perceived modification to policies and procedures following guideline implementation*

Factor	Modification to policies and procedures*			χ^2 value	p value
	Disagree N (%)	Agree N (%)	Total N (%)		
Organizational demographics:					
Agency designation					
Teaching	33 (27.5%)	87 (72.5%)	120 (42.1%)	0.024	0.876
Non teaching	44 (26.7%)	121 (73.3%)	165 (57.9%)		

* Based on a four-point Likert scale (1=strongly disagree, 4=strongly agree)

Once again, as shown in table 4-6, the analysis shows no statistically significant differences ($p = 0.876$) comparing the teaching designation of the agency and the nursing staff who agreed there had been modifications to policies and procedures with the nursing staff who disagreed that modifications had been made.

Hypothesis 3 Nurses who report a high level of organizational support are more likely to report modifications to organizational policies and procedures than nurses who report a low level of organizational support

The hypothesis was based on the idea that an agency providing strong support to its staff would probably modify its organizational policies and procedures. Modifications to policies and procedures would be a way for that agency to support the staff in practising according to the best evidence possible.

Table 4-7 - *Bivariate analysis of perceived organizational support and perceived modification to policies and procedures following guideline implementation*

Factor	Modification to policies and procedures*			χ^2 value	p value
	Disagree N (%)	Agree N (%)	Total N (%)		
Organizational support:					
Support by top management					
Disagree	31 (60.8%)	20 (39.2%)	51 (18.5%)	38.789	0.0001
Agree	41 (18.3%)	183 (81.7%)	224 (81.5%)		
Change readily adopted by nurses					
Disagree	38 (48.7%)	40 (51.3%)	78 (28.2%)	29.148	0.0001
Agree	34 (17.1%)	165 (82.9%)	199 (71.8%)		
Sufficient time and training					
Disagree	35 (48.6%)	37 (51.4%)	72 (26.2%)	23.356	0.0001
Agree	39 (19.2%)	164 (80.8%)	203 (73.8%)		
Adequate number of qualified staff					
Disagree	38 (47.5%)	42 (52.5%)	80 (29%)	22.501	0.0001
Agree	38 (19.4%)	158 (80.6%)	196 (71%)		
Equipment and supply needed					
Disagree	28 (43.7%)	36 (56.3%)	64 (23.4%)	12.348	0.0001
Agree	45 (21.5%)	164 (78.5%)	209 (76.6%)		

* Based on a four-point Likert scale (1=strongly disagree, 4=strongly agree)

Table 4-7 displays a statistically significant difference for all five sub-variables about organizational support and whether nurses agreed that policies and procedures had been modified to reflect the guidelines ($p < 0.0001$). Eighty two percent of nurses who perceived that there was modification to policies and procedures also perceived support by top management. As well, 83% of nurses who perceived that there was modification to policies and procedures also reported that they adopted change readily, 81% perceived having had sufficient time and training to learn how to use the best practice guideline, 81% perceived that they had adequate numbers of qualified staff to implement the best practice guideline and 78% perceived that they had the equipment and supplies needed to implement the best practice guideline.

Hypothesis 4 Nurses who report a high level of organizational stability are more likely to report modifications to organizational policies and procedures than nurses who report a low level of organizational stability.

The hypothesis was that an agency experiencing higher levels of organizational stability as assessed by nurses' perceptions of financial pressure, staff cuts, staff turnover, infusion of new money, staff absenteeism, hiring of new staff and use of casual nurses would be more likely to modify their organizational policies and procedures according to guideline recommendations. The reason for this hypothesis is that since the agency would not have to worry about staffing or a budget shortfall, it would be more inclined to use human resources to update the organizational policies and procedures to the best and latest available research evidence.

Table 4-8 - *Bivariate analysis of perceived organizational stability and perceived modification to policies and procedures following guideline implementation*

Factor	Modification to policies and procedures*			χ^2 value	p value
	Disagree N (%)	Agree N (%)	Total N (%)		
Organizational stability:					
Financial pressure					
Not at all	31 (23.7%)	100 (76.3%)	131 (49.8%)	5.823	0.054
Somewhat	19 (25.3%)	56 (74.7%)	75 (28.5%)		
To a large extent	23 (40.4%)	34 (59.6%)	57 (21.7%)		
Staff cuts					
Not at all	33 (21%)	124 (79%)	157 (58.8%)	15.370	0.0001
Somewhat	13 (26.5%)	36 (73.5%)	49 (18.4%)		
To a large extent	29 (47.5%)	32 (52.5%)	61 (22.8%)		
High staff turnover					
Not at all	27 (22.9%)	91 (77.1%)	118 (44.4%)	3.593	0.166
Somewhat	17 (28.8%)	42 (71.2%)	59 (22.2%)		
To a large extent	31 (34.8%)	58 (65.2%)	89 (33.4%)		
Infusion of new money					
Not at all	56 (33.3%)	112 (66.7%)	168 (69.1%)	5.445	0.066
Somewhat	9 (18.4%)	40 (81.6%)	49 (20.2%)		
To a large extent	5 (19.2%)	21 (80.8%)	26 (10.7%)		
High staff absenteeism					
Not at all	36 (25%)	108 (75%)	144 (53.9%)	1.623	0.444
Somewhat	19 (28.4%)	48 (71.6%)	67 (25.1%)		
To a large extent	19 (33.9%)	37 (66.1%)	56 (21%)		
Hiring of new staff					
Not at all	28 (28%)	72 (72%)	100 (37.8%)	1.782	0.410
Somewhat	16 (21.6%)	58 (78.4%)	74 (27.9%)		
To a large extent	28 (30.8%)	63 (69.2%)	91 (34.3%)		
Increased number of casual nurses					
Not at all	42 (28%)	108 (72%)	150 (57.3%)	0.196	0.907
Somewhat	15 (25%)	45 (75%)	60 (22.9%)		
To a large extent	14 (26.9%)	38 (73.1%)	52 (19.8%)		

* Based on a four-point Likert scale (1=strongly disagree, 4=strongly agree)

As shown in table 4-8, only one out of the seven sub-variables for organizational stability, which was staff cuts, had a statistically significant difference ($p < 0.0001$) between nurses who agreed that modifications to policies and procedures had been made versus those who disagreed. Seventy nine percent of nurses who perceived that there was a modification to policies and procedures reported no staff cuts compared to 21% who did not perceive modification to policies and procedures.

***Nursing staff' perception of
organizational support and organizational stability (by agency)***

A description of nursing staff' perceptions of organizational support and nursing staff' perceptions of organizational stability was done by agency (see table 4-9). The purpose of the comparison was to determine patterns by agency.

Table 4-9: Nursing staff' perception of organizational support and organizational stability

Agency	Total N	Organizational support (four-point Likert scale) (1 = strongly disagree, 4 = strongly agree)		Organizational stability (five-point Likert scale) (1 = not at all, 5 = to a large extent)	
		Responses N	Mean (SD)	Responses N	Mean (SD)
A	38	37	2.93 (0.50)	34	2.31 (1.09)
B	43	41	2.70 (0.45)	40	2.43 (0.78)
C	16	15	2.89 (0.47)	15	2.24 (0.72)
D	29	25	2.41 (0.59)	25	2.95 (0.96)
E	25	24	3.17 (0.58)	21	2.87 (1.28)
F	47	44	2.61 (0.48)	44	2.61 (.95)
G	21	19	2.83 (0.38)	17	1.98 (.83)
H	21	21	3.21 (0.65)	21	2.43 (0.57)
I	46	45	2.92 (0.53)	45	2.70 (0.91)
J	13	10	3.18 (0.59)	10	1.88 (0.67)
K	17	16	3.10 (0.73)	16	2.39 (0.73)
Total	316	297*	2.85 (0.57)	288*	2.51 (0.93)

* Numbers vary due to missing data

The results of the comparison indicated that the nursing staff at agency D perceived the lowest level of organizational support and the lowest level of organizational stability (a high number on the organizational stability scale indicates organizational instability) during the implementation of clinical guidelines. Nursing staff at agency H perceived the highest level of organizational support followed by agency J. Nursing staff

at agency J perceived the highest level of organizational stability (a low number on the organizational stability scale indicates organizational stability). Given the above findings, a contrast case study was done between agency D and agency J to better understand organizational perspectives.

Contrast case study

To further explore the possible relationship between organizational contexts and the modification and/or review of policies and procedures, the author did a contrast case study of two agencies. The agency with the most documented organizational challenges while implementing clinical guidelines was compared to the agency with the fewest documented organizational challenges.

Agency with the most organizational challenges

Agency D, a non-teaching, acute care agency, appears to have had many challenges while implementing clinical guidelines. The quantitative questionnaires (response rate of 53.6%) indicated that only 42% of nursing staff perceived that unit policies and procedures fit well with the guidelines and only 25% of nursing staff perceived that unit and/or agency policies and procedures were modified to reflect the guideline recommendations. Nursing staff also reported that organizational support was limited. With the exception of “equipment and supplies,” which 71% of nursing staff perceived were sufficient, nursing staff did not perceive strong organizational support (positive answers to statements on the organizational support scale ranged from 33% to 56%). Agency D was the agency with the lowest perception of organizational support by nursing staff. Nursing staff also reported issues with perceived organizational stability. Agency D was the agency with the lowest perception of organizational stability by

nursing staff. Some of the difficulties reported included financial pressures, staff cuts, high staff turnover, high staff absenteeism and hiring of new staff.

Data from the qualitative interviews for agency D were consistent with the findings from the quantitative questionnaires. Three out of four administrators interviewed did not perceive that policies and procedures were reviewed by the committee responsible for policies and procedures nor did they perceive that policies and procedures were modified following implementation of the clinical guidelines. At agency D, staffing was reported to have been consistently insufficient and attendance at educational sessions was limited.

Agency with the fewest organizational challenges

In contrast, agency J, a chronic care, non teaching facility, seemed to have had the fewest challenges during the implementation. As shown by the quantitative questionnaires (response rate of 52%), 90% of nursing staff perceived that the unit policies and procedures fit well with the clinical guidelines and 90% of nursing staff perceived that units and/or agency policies and procedures were modified to reflect guidelines. Nursing staff also reported strong organizational support (positive answers to statements on the organizational support scale ranged from 80% to 100%). Nursing staff did not report any concern with organizational stability. Agency J was the agency with the highest perception of organizational stability by nursing staff.

Data from the qualitative interviews for agency J were consistent with the findings of the quantitative questionnaires. The two administrators indicated that policies and procedures were developed as part of the project, thus they were reviewed by the organization's committee responsible for policies and procedures. The administrators

also reported that some organizational policies and procedures were modified following implementation of the clinical guidelines. The majority of the administrators and nursing staff interviewed as well as the clinical resource nurse perceived that staffing was sufficient. They did not identify unit workload as a barrier to guideline implementation. There were no organizational issues identified. Staff turnover was not reported as being a challenge during implementation of clinical guidelines.

Summary of main findings

Nursing administrators and/or clinical resource nurses at all of the 11 health care agencies taking part in the study reported changes to their policies, procedures and/or other written documents as a result of taking part in the Registered Nurses Association of Ontario best practice guideline project. Seven out of the 11 agencies did not have written policies and procedures on the topic of the clinical guidelines and developed them as part of the implementation process. On the other hand, only eight agencies had 75% or more of the surveyed nursing staff agreeing that policies and procedures were modified to reflect the clinical guideline recommendations.

The extent of the changes to policies and procedures varied greatly among the agencies, with some agencies making minimal revisions such as adding key questions to nursing assessment forms while other agencies made more extensive changes. For example, one agency developed an orientation manual and made changes to programs and orientation policy to reflect the guideline recommendations.

The secondary data analysis revealed that a clinical resource nurse and some nursing staff perceived that the guideline recommendations were not adapted to the reality of specialty units. In addition, another clinical resource nurse noted that the

development or modification to policies and procedures would not be the same at every site even if the same clinical guideline was being implemented across the sites.

Four hypotheses were generated for the secondary analysis. However, only one was supported. More specifically, the study found no statistically significant relationship between the type of agency (acute care versus others), the agency designation (teaching versus non-teaching) or the perceived levels of organizational stability and nursing staff levels of agreement with modification to policies and procedures. A statistically significant relationship was found between perceived levels of organizational support and nursing staff who agreed there had been modification to policies and procedures compared with nursing staff who disagreed that modification had been made. More specifically, organizational support in the form of perceived support by top management, sufficient time and training to learn how to use the clinical guideline, adequate number of qualified staff and sufficient equipment and supplies to implement the clinical guideline was found to be related to nurses' agreement with modification of policies and procedures.

Lastly, a contrast case study described the findings that the agency with the lowest perception of organizational support and organizational stability was also the agency with the least number of nursing staff (25%) perceiving that policies and procedures were modified to reflect the clinical guideline recommendations. In contrast, the agency with the highest perception of organizational support and organizational stability was one of the agencies with the most staff (90%) perceiving that policies and procedures were modified as part of the project.

CHAPTER FIVE: DISCUSSION

This chapter presents an interpretation of the main findings of this secondary analysis. Additionally, the limitations and strengths of the study are stated. Finally, recommendations regarding the review and use of policies and procedures as a strategy for clinical guideline implementation are discussed. The chapter concludes with a description of recommendations for practice, education, research and administration.

Interpretation of the main findings

Research objective one

The first research objective of the secondary data analysis was to describe the nature and extent of changes to policies and procedures from the perspective of nursing administrators, clinical resource nurses and nursing staff. On average, 73% of the surveyed nursing staff perceived that their organizations had modified policies and procedures to reflect guideline recommendations. However, nurses' perceptions varied considerably between organizations with 25% to 90% of nurses perceiving that there had been modification to policies and procedures. The nurses' perceptions about organizational policies and procedures are important because previous research has found that these perceptions may influence practice. In one study, the nurses' perceptions of the existence of organizational policy strongly correlated with the nurses' self-reported adoption of the innovation (Brett, 1987) while in another study the nurses' perception of a hospital policy was significantly related to their level of persuasion about and subsequent use of the nursing practices (Coyle & Sokop, 1990).

Although about 75% of surveyed nursing staff perceived modification to policies and procedures, in reality all of the 11 participating agencies reported changes to their

policies and/or procedures as a result of clinical guideline implementation. These findings show that an important proportion of nursing staff (25%) are not aware of the latest changes made to organizational policies and procedures. Other studies have also found discrepancies between nurses' perceptions and the existence of a policy. For example, a study of 212 nurses employed in five acute care American hospitals had nurses in all five hospitals stating that their practice was based on hospital policy, despite the fact that two of the agencies had no such policy (Walthall et al., 1993). Likewise, a study involving 14 anaesthetists and 35 nurses working in a single hospital in Scotland found 5 participants unaware whether a policy on the topic existed and 13 (26%) indicating that they were practising according to the hospital policy; although at the time of the study the hospital had no written policy or guidelines on topic (Chapman, 1996). Another interesting British study examining the differences in policy awareness between anaesthetists (n=12) and nurses working on a surgical floor (n=30) within the same hospital found a remarkable difference between the anaesthetists and the nurses' awareness of a specific hospital policy. In the study, only 30% of nurses were aware of the "nil by mouth" hospital policy compared to 75% of the anaesthetists (Seymour, 2000). These findings are alarming and confirm the need for further research comparing nurses' actual practice with current policies and procedures.

The dissemination of policies and procedures

The discrepancy between perceptions and awareness of policies and procedures also raises an important question about how policies and procedures are being disseminated to employees working within organizations. Every employee has a personal responsibility in seeking the latest policies and procedures pertaining to his/her area of

practice. However, health care agencies must also carry responsibility for keeping their employees current with new and/or revised organizational policies and procedures whether it be through in-services, staff meetings, posters or newsletters.

Because organizational policies and procedures are documents that have legal ramifications, it is imperative that nursing staff be aware and knowledgeable about them. During a lawsuit investigation, one of the first questions asked is always “was the nurse’s practice in compliance with organizational policies and procedures?” Therefore, it is important that organizational policies and procedures be disseminated in many ways to reach all nursing staff.

The terminology

Although every agency reported modifying the policies and/or procedures to reflect the guidelines, the actual nature of the changes was difficult to assess. Part of the problem was related to the terminology used. Several terms such as protocols, patient pathways, flow sheets, flow charts, standards of care, clinical pathways, assessment sheets, assessment forms, assessment tools, documentation tools, and documentation forms were used within a unit, an agency and across different agencies. However, no actual definitions of these terms were requested as part of the original study. It is therefore difficult to assess whether different terms could in fact be describing the same documents. There is a need for researchers to have a clear understanding of the terminology used to ensure an accurate reporting of findings when comparing several organizations. One way to ensure that the terminology is well defined and consistent would be for a national agency such as the Canadian Council on Health Services Accreditation (CCHSA) to provide definitions of the terms. These definitions could then

be included on the CCHSA Web site. Having the definitions easily accessible would help ensure consistency in terminology among every health care organization in Canada and would prevent confusion for new staff coming from different agencies. Clear definitions would also allow researchers and other professionals comparing processes used by several organizations to properly identify the nature of the documents that are in place.

The extent of the changes

The extent of the changes to policies and procedures varied considerably across all 11 health care organizations. Some agencies went further than simply reviewing their policies and procedures and developed detailed manuals based on the guidelines. These manuals were to be used as a reference tool by nurses as well as for orientation purposes. Since the literature indicates that nursing staff prefer to use unit-based policy and procedure manuals as a reference rather than scientific journals (Estabrooks, 1999b; Gerrish et al., 2004), developing such documents should assist nurses to practice according to the best evidence available. As part of the implementation of the clinical guidelines, a number of agencies even changed some of their organizational processes. An example of such change includes the revision to the supply and ordering process.

The internalization process

Although eight out of the 11 agencies had 75% or more of the surveyed nursing staff agreeing that policies and procedures were modified to reflect the clinical guideline recommendations, the majority of agencies (ten out of 11) had 75% or more of the surveyed nursing staff agreeing that unit policies and procedures fit well with guideline recommendations. These findings are important because they emphasize the importance

of going through an internalization process when implementing clinical guideline recommendations. The internalization process implies that the policy and procedure committee, or its equivalent, or the unit manager and/or nurse educator assigned to the unit must revise and adapt the guideline recommendations so they become part of the unit or organization's structure. The internalization process is referred to as the "redefining/restructuring" stage by Rogers (2003) and is part of the translation/application phase of Stetler's (2001) model for research utilization within the context of evidence-based practice.

Since clinical guidelines are generic statements of recommended best practice, the internalization process is important to ensure that the recommendations are compatible with the reality and context of the unit and/or organization wishing to implement them. As such, units and/or organizations need to decide which specific guideline recommendations they are going to implement and how. Suggestions on how to identify which clinical guideline recommendations to implement are included as part of the Registered Nurses Association Tool Kit (2002). Factors such as cost, feasibility, resources implications, priority and level of evidence should all be considered. In instances of marked discrepancies between current unit/organizational policy/procedure and clinical guideline recommendations, the reason for the discrepancy should be explored. If feasible, the policy and/or procedure should be modified to reflect some of the guideline recommendations.

The decision to implement some or all of the clinical guideline recommendations can be made by the nursing professional practice department or the quality assurance program or their equivalents. For unit-specific implementation, the unit manager and/or

the unit educator can make the decision. Van Der Weide and Smits (2001) suggest that guidelines designed for specific groups of patients should be implemented exclusively on units where such guidelines are relevant and applicable. General guidelines such as the introduction of a classification system which requires consistency across the organization, should be implemented preferably hospital wide. This recommendation implies that in some situations only unit policy and/or procedure should be revised whereas in other situations, a hospital wide policy and/or procedure revision needs to take place.

It is extremely important that nursing staff be involved in the internalization process. An article by Fellows (2000) identified clinical staff as key players for practice change. The article describes the processes used for evidence-based changes in hospital policy and nursing practice for enteral feedings. As a way to be involved with the internalization process, nursing staff could sit on policy and procedure committees. This would allow nursing staff be able to provide feedback on the feasibility of the recommendations in practice since they will be the ones implementing the revised policies and procedures. Nursing staff can also provide suggestions on how to adapt the guideline recommendations to their everyday practice. Multidisciplinary involvement during the internalization process is also desirable. An example of multidisciplinary involvement could be the establishment of a multi-disciplinary steering committee for policy development.

Once a policy or procedure has been developed or modified to reflect the guideline recommendations, the revised document should acknowledge the source of the evidence used for its creation (Smith, James, Lorentzon, & Pope, 2004). Acknowledging

that the new document is research-based should add credibility to the proposed changes and also provides a reference for nurses who wish to obtain additional information.

Preferably, the nursing staff who was involved with the development or modification of the policies or procedures should also assist with the implementation of the new/revised policy or procedure in practice. Their role could include explaining the rationale as to why the practice is being changed as well as encouraging their peers to practice according to the new policy.

Research objective two

The second research objective was to examine organizational factors influencing revisions to policies and procedures in organizations that have participated in the pilot implementation of clinical guidelines.

Hypothesis one

The first hypothesis was that nurses employed in acute care agencies were more likely to report modifications to organizational policies and procedures than nurses working in community care, rehabilitation and chronic care facilities. The analysis revealed no statistically significant difference comparing the type of agency and the perceived modification to policies and procedures ($p = 0.149$) thus hypothesis one was not supported. This finding is surprising but may be explained by the fact that acute care agencies are often large institutions. Larger organizations are likely to be more bureaucratic and consequently have more difficulty in adopting innovations than smaller, more flexible organizations (van der Weide, 2003). As a result, middle managers working in these large acute care agencies might have less autonomy in making changes to their policies and procedures without going through lengthy and formal processes than

their counterparts working in smaller organizations such as community care, rehabilitation and chronic care agencies. It is hypothesized that community care, rehabilitation and chronic care agencies will have fewer levels of decision making to go through, making the revision of policies and procedures an easier and more efficient process.

As well, large acute care agencies may have many departments employing many different health care professionals, creating competing priorities. It is hypothesized that the origin, the cost, the feasibility and the resource implications associated with each priority will influence how priorities are ranked.

Hypothesis two

The second hypothesis was that nurses employed in agencies with a teaching designation were more likely to report modifications to organizational policies and procedures than nurses working in non-teaching health care facilities. Again, the analysis revealed no statistically significant difference comparing the agency designation and the perceived modification to policies and procedures ($p = 0.876$) thus hypothesis two was not supported. This finding might be explained by the fact that teaching agencies are generally larger than non-teaching agencies. Large institutions are inclined to have more bureaucratic processes in place than smaller institutions (van der Weide, 2003). As a result, large teaching agencies may be more bureaucratic than their non-teaching counterparts, making the process of reviewing and/or modifying policies and procedures more demanding. As well, teaching agencies may experience many competing priorities arising from the fact that they are expected to be using the latest knowledge and

technology. Since knowledge is rapidly changing, keeping every policies and procedures up-to-date can be a challenge. .

Hypothesis three

The third hypothesis of the secondary analysis was that nurses who reported a high level of organizational support were more likely to report modifications to organizational policies and procedures than nurses who reported a low level of organizational support. The analysis confirmed a statistically significant difference ($p < 0.000$) in perceived level of organizational support between nursing staff who agreed there had been modification to policies and procedures and nursing staff who disagreed that modification had been made thus hypothesis three was supported. All five individual items on the support scale also showed a statistically significant difference: support by top management ($p < 0.0001$); change readily adopted by nurses ($p < 0.0001$); sufficient time and training ($p < 0.0001$); adequate number of qualified staff ($p < 0.0001$); and equipment and supplies needed ($p < 0.0001$). These results confirm that there is a relationship between the perception of organizational support and the perception of modification of policies and procedures in the context of clinical guideline implementation.

This is particularly important because such a relationship has not been found by this author to be reported in the nursing literature. However, the literature has clearly and consistently indicated that a supportive environment is crucial to facilitate the implementation of research findings, including clinical guidelines (Champagne, Tornquist, & Funk, 1997; Champion & Leach, 1989; Closs et al., 1994; Estabrooks, Floyd, Scott-Findlay, O'Leary, & Gushta, 2003; Hatcher & Tranmer, 1997; Retsas, 2000;

Wallin, Bostrom, Wikblad, & Ewald, 2003). Organizational support can take many forms including opportunities for nurses to attend continuing education courses, adequate staffing levels, up-to-date equipment and adequate supplies. As well, support can be offered by many people such as senior administrators, nurse managers, clinical nurse specialists, peers, physicians or other clerical or administrative health care staff.

Despite the important role attributed to organizational support, the extent to which each organization was able to support nurses with the implementation of clinical guidelines varied considerably across the 11 agencies. A possible explanation for the marked variation in perceived organizational support may be that some clinical guidelines were more relevant or easier to implement than others. Studies have found that specific attributes of clinical guideline recommendations such as the need to change existing practice routines, the relevance of the recommendation or the compatibility with the clinician's current norms and values, influenced the use of the guidelines in practice (Foy et al., 2002; Grol et al., 1998). Another explanation is the differences between the organizational contexts of each agency. For example, 70% of the 316 nursing staff surveyed perceived having an adequate number of qualified staff to implement guidelines. However, a closer look at each individual agency revealed that only 33% of nursing staff in agency D perceived having an adequate number of qualified staff compared to 95% in agency H.

Another example of varying levels of support between agencies is demonstrated by the nurses' perception of being provided with sufficient time and training to implement clinical guideline recommendations. Overall, 74% of the nursing staff surveyed perceived having had sufficient time and training to implement guidelines.

However a closer look at the responses reveals that only 40% of nursing staff in agency D perceived having sufficient time and training to implement guidelines compared to 96% in agency E.

Administrators and clinical resource nurses reported that replacing nursing staff so that they were able to attend educational sessions was difficult because there were no staff available to replace them. Because of the limited number of nurses available at any given time, most organizations do not have many surplus nurses to draw upon. Consequently, the requirement for a large number of nurses to be replaced at once so they can all attend training may constitute hardship for an already stretched workforce. Therefore, it is imperative that the training of large groups of nursing staff not coincide with summer or Christmas holidays where the workforce is already stretched.

The literature has shown that a supportive environment is critical for the implementation of clinical guidelines (Hatcher & Tranmer, 1997; Retsas, 2000; Wallin, Bostrom, Wikblad, & Ewald, 2003). This study has found a statistically significant relationship between the perception of organizational support and the perception of modification to policies and procedures in the context of clinical guideline implementation. As a result, there is a need for senior management, unit managers and nurse educators to recognize the value and encourage the development and use of evidence-based policies and procedures as the basis for sound professional nursing practice.

Hypothesis four

The fourth hypothesis was that nurses who reported a high level of organizational stability for their agency were more likely to report modifications to organizational

policies and procedures than nurses who reported a low level of organizational stability. However, the analysis revealed no statistically significant differences ($p = 0.163$) in perceived level of organizational stability between nursing staff who agreed that there had been modifications to policies and procedures, and nursing staff who disagreed that modifications to policies and procedures had been made thus hypothesis four was not supported. A further analysis of all seven individual items on the organizational stability scale found only one item: staff cuts, to have a statistically significant difference when comparing nurses' perceptions of modification to policies and procedures ($p < 0.0001$). That is, 79% of nursing staff who perceived minimal staff cut also perceived modifications to policies and procedures; but only 52.5% of nursing staff who perceived considerable staff cuts, perceived modification to policies and procedures. There were no statistically significant differences when comparing nurses' perceptions of modification to policies and procedures and the six other items: financial pressure ($p = 0.054$); high staff turnover ($p = 0.165$); infusion of new money ($p = 0.066$); high staff absenteeism ($p = 0.444$); hiring of new staff ($p = 0.410$) and increased number of casual nurses ($p = 0.907$). These findings are surprising, but could be explained by the fact that health care organizations are required to have formal written policies and procedures. As a result, agencies are still expected to review and modify their policies and procedures regardless of financial pressure, staff turnover, staff absenteeism or the hiring of new staff.

The Registered Nurses Association of Ontario identified organizational stability as part of the structure needed to implement clinical practice guidelines (RNAO ToolKit 2002). This secondary analysis found no statistically significant relationship between modification to policies and procedure and organizational stability. This finding may be

attributed to the self-selection of participating agencies. It is hypothesized that only organizations experiencing some level of organizational stability agreed to take part in the original study. Organizations experiencing organizational instability probably did not submit a request for proposal and did not take part in the study.

Conceptual Framework

Following the analysis, a revised conceptual framework was developed (see Figure 5-1). A third circle was added to the earlier version of the model. At the center of the model, the development and/or modification of policies and procedures are still identified as an organizational strategy to implement clinical guidelines. The second circle depicts variables that will influence the implementation of policies and procedures such as sufficient training, necessary equipment and supply, adequate number of qualified staff, sufficient time and manageable workload. These variables will in turn be affected by organizational support which is presented in the third circle of the model. In this secondary data analysis, nurse administrators and clinical resource nurses provided organizational support. However, the support from multidisciplinary committees is also important when developing and/or modifying policies and procedures, especially if the new policy or procedure will affect many disciplines.

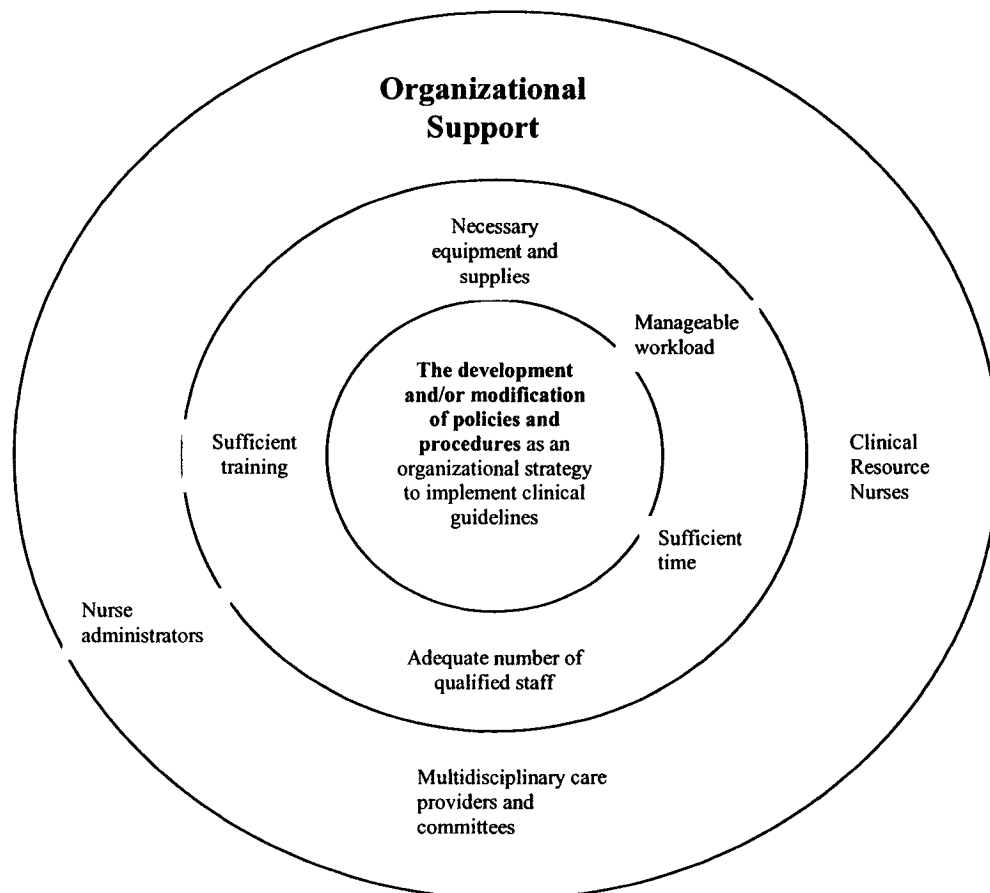


Figure 5-1: *Revised conceptual framework*

- **Support** refers to the encouragement and assistance provided by senior management, directors, unit managers and clinical resource nurses. A supportive environment will: make available the necessary equipment and supplies and will ensure an adequate number of qualified staff, a manageable workload and sufficient time and training to develop/modify and implement organizational policies and procedures which will be based on the best available research evidence such as clinical guidelines.

Limitations and Strengths

Limitations

All research is susceptible to bias. In the case of qualitative interviews, all interviews were not conducted by the same interviewers and, as a consequence, all questions were not asked the same way with the same prompts. In addition, some participants might have provided answers that were compatible with popular social norms or with what they assumed the interviewers wanted to hear. These are referred to as “social desirability response bias” by Polit and Hungler (1999). Biases might also have been introduced by the setting in which participants answered the telephone interviews. A participant answering questions pertaining to organizational context while at work might have answered differently than if he or she had been at home. As well, participants might have been preoccupied by other activities going on around them at the time of the interview.

Other limitations include the absence of control groups and the voluntary participation of the agencies taking part in the implementation project. Because of the self-selection bias of the participating agencies as well as the small number of participants per agency, the results of this study have limited generalizability

Limitations with the questionnaires and interviews

There were limitations with the phrasing of some of the quantitative questions. For example, the terms policy and procedure were not defined by the research team and were grouped together. Participants were left to use their own definitions of the terminology when completing the questionnaires. Therefore, it was impossible to assess

whether participants were, in fact, referring to an organizational policy or an organizational procedure when answering the questions. Both terms remained grouped as part of this secondary analysis. If a comparable study was conducted under similar circumstances, the terminology should be clearly defined, either by the research team or by a national agency such as the Canadian Council on Health Services Accreditation. As well, other organizational tools such as clinical pathways, documentation forms and flow sheets should be described and included as example of modification to organizational processes.

An additional limitation of the questionnaires and interviews is that participants were never asked whether their organization had an actual policy and/or procedure pertaining to the topic of the clinical guideline prior to the start of the project. It was probably assumed that organizations would have such policies and/or procedures already in place. Because of this assumption, participants were asked whether the guideline recommendations fit with the existing policies and procedures and whether the existing policies and procedures were reviewed and/or modified to reflect the clinical guideline recommendations. As a result, some participants stated that their organization had no policy and/or procedure on the topic of the clinical guidelines prior to the project, or that policies and procedures were written as part of the project. These answers confirm the need to have included an initial question such as “does your organization currently have a written policy or procedure on the topic of ...” Again, a list of organizational tools such as clinical pathways, documentation forms and flow sheets that could potentially have been modified to reflect clinical guideline recommendations should be included as part of the questionnaire. Participants would then identify which formal written document they

perceive the organization to have modified to facilitate the implementation of the desired practice.

Strengths

Both principal co-investigators (Edwards and Davies) as well as a member of the evaluation team (Griffin) from the main study were involved with this secondary data analysis, allowing for meaningful feedback and strengthening the current study.

There was also an excellent participation rate for the qualitative interviews (90% response rate), which indicates that respondents were interested in providing feedback about their experience with clinical guideline implementation. A total of 316 nursing staff returned their quantitative post-questionnaires, for a response rate of 64.7%.

According to Polit and Hungler (1999), a response rate greater than 60% is sufficient for most purposes. The response rate for the nursing staff quantitative post-questionnaires was maximized by using a multiple contact strategy as described by Dillman (2000).

Another strength of the secondary analysis is related to the methodology used. The triangulation of data, including interviews and questionnaires as well as the selection of participants working in both management and non-management positions helped reduce the likelihood of some biases.

Implications and Recommendations

A number of implications and recommendations will be discussed related to practice, education, research and administration. These recommendations are based on the findings of the current study as well as the literature.

Practice

Implementing a change in nursing practice may be very difficult, may take a long time and may require considerable persuasion. It is also easy and tempting for nurses to return to their “old” way of doing things when the necessary incentives to promote the ongoing use of the new practice are not in place. Incorporating clinical guideline recommendations into organizational policies and procedures is a strategy to facilitate evidence-based practice. The current study showed a relationship between organizational support and modification to policies and procedures. In order to support the review and/or modification of policies and procedures, there needs to be dedicated staff and dedicated time to perform the required tasks. As well, the nursing staff should have access to the proper equipment such as a computer and to the latest clinical guidelines.

Following a change in the policy or procedure, the new policy and/or procedure should then be readily accessible to nursing staff and should be included in the policy and procedure manual as well as posted on the Intranet system, if available. Pierson, Hesnard and Haas (2000) found many advantages to placing the policy and procedure manual on the Intranet system. Some of the advantages reported included: 1) the time and materials saved by not copying and binding pages; 2) the ability to perform direct and centralized updates to policies and procedures; 3) the ability to maintain uniformity (no more lost documents); and 4) the ability to search and find related documents for simultaneous revision. Clearly, the ability of nursing staff to benefit from an on-line policy and procedure manual will also depend on their access to computers.

The use of evidence-based policies and procedures can assist nursing staff in being knowledgeable about the latest research findings pertaining to their specific area of practice. Evidence-based policies and procedures can also provide the encouragement needed for nursing staff to sustain the use of the new practice over time since they are expected to practice according to policies and procedures. As well, employees who are new to the organization should refer to policies and procedures to guide their practice according to the organization's standards.

The use of policies and procedures as an organizational strategy to implement clinical guideline recommendations is not well documented in the literature. The development and modification of policies and procedures is included as a potential indicator for the evaluation of the implementation of clinical guidelines in the Registered Nurses Association of Ontario Toolkit (2002). However, the findings of the current study suggest that the development and modification of policies and procedures should be included in the implementation strategy section of the toolkit as well. The new implementation strategy could be entitled "review and modification of policies, procedures and organizational documents to support clinical guideline implementation". A list of documents that could potentially be modified to reflect clinical guideline recommendations would then be included. Examples of such documents include: policies and procedures, clinical pathways, documentation forms and assessment tools.

Staff Education

The results of the secondary data analysis found that in some agencies, nursing staff were not aware of modifications to organizational policies and/or procedures even when such modifications were made. These findings suggest that changes to policies

and/or procedures need to be better communicated to nursing staff. Examples of methods used to convey changes made to policies and procedures include posters and flyers (passive dissemination) as well as presentations at in-services and staff meetings (active dissemination). As suggested by Fellows et al. (2000), the revised policy or procedure should also be distributed with a cover page summarizing the changes made to the initial document.

Research

The extent of changes

The current study found that the extent of changes to policies and procedures varied considerably across all health care organizations. There is a need for further research to explore the extent of changes made to organizational policies and procedures and organizational processes as a result of clinical guidelines implementation. It is hypothesized that the nature of the clinical guideline will have a direct impact on the need to modify policies and/or procedures. For example, the Integrating Smoking Cessation into Daily Nursing Practice guideline may require a change in policy where as the Assessment and Management of Venous Leg Ulcers may require changes to procedures and assessment forms. As well, some clinical guidelines require more in terms of supplies than others to implement. The need for supplies might influence the ability to implement some recommendations. Another factor that might influence the need to modify policies and/or procedures is the previous conformity of the policy or procedure to the guideline recommendations. It is possible that the policy or procedure already reflects the guideline recommendations thus limiting the need for modification.

Sustainability

There is a need to assess whether organizations that modified their policies and procedures as a way to “internalize” clinical guideline recommendations sustained the use of the guidelines better over time compared to those that did not. As a way of assessing sustainability, a research team or quality assurance team, could look at the organization’s policies and procedures to determine which guideline recommendations have been incorporated in the organizational structure. An inventory of other documents, tools and processes that have been developed/modified as a result of the implementation of the guideline recommendations should also be taken. Following a review of the policies and procedures, a review of nursing clinical practice should be done. A researcher or an independent observer can review practice using a checklist to identify what key actions should be performed to reflect compliance with a specific policy or procedure. If the majority of nursing staff are practising according to policies and procedures that have been developed/modified according to clinical guideline recommendations, it can be assumed that the use of the clinical guidelines over time was successful. It is hypothesized that changes in organizational policies and procedures accompanied by changes in organizational processes during pilot implementation will result in sustained practice changes.

Review process

The process used to review and/or modify policies and procedures was not explicit in this study. As stated in the literature, the practice environment “exerts a powerful set of influences” and factors that should be considered for review include rules, regulations and policies (Graham & Logan, 2004; Logan & Graham, 1998). As part of

the 2003 Achieving Improved Measurement (AIM) Accreditation Program, the Canadian Council on Health Services Accreditation (CCHSA) incorporated five workplace indicators of particular importance to nurses: full time employment, overtime hours, absenteeism, professional development opportunities and unresolved grievances. These workplace indicators are known factors that can influence the work of nurses. There is a need to explore the possible relationship between workplace indicator scores and the successful implementation of clinical practice guidelines. These findings would allow for a better understanding of factors in the workplace that might influence organizational processes necessary for maintaining evidence-based and up-to-date policies and procedures.

Organizational support

The current study found a relationship between nursing staff' perceptions of organizational support and nursing staff' perceptions of modification to policies and procedures. Such findings have not been found in the literature by this author. It is important to better understand which specific supportive action or activity can positively influence the modification and implementation of policies and procedures. It is hypothesized that strong nursing leadership, a workplace culture that values and encourages evidence-based practice, positive and trusting interdisciplinary relationships and the availability of necessary resources are all factors that will enhance the modification and implementation of policies and procedures.

Administration

A few studies have reported nurses stating that their practice was based on organizational policies even when such policies did not exist (Chapman, 1996; Walthall

et al., 1993). The scope of the current secondary data analysis did not allow for such findings, but 25% of nurses were not aware of changes to policies and procedures, even when such changes had occurred. These results are important because they show the need for managers to determine whether policies and procedures are reflected in nursing practice. If they are not, there is a need to determine what is preventing the nursing staff from practising according to policies and/or procedures and what can be done to facilitate the change in practice. Methods to review clinical practice include: direct observation, patient chart audits, interviews with nursing staff, interviews with other health care providers and interviews with patients and their families. In addition, administrators should have processes in place for regular policy and procedure revision and a standard that evidence will inform changes.

Conclusion

Policies and procedures are important documents that have legal ramifications. As well, the level of autonomy in clinical decision-making of hospital nurses is highly related to and driven by organizational policies and procedures (Registered Nurses Association of Ontario Toolkit 2002). The current literature reveals that nurses use written policies and procedures as a source of information more frequently than research articles (Estabrooks, 1999b, Gerrish & Clayton, 2004). In light of these facts, policies and procedures should be evidence-based. Therefore, this descriptive study looked at the development and modification of policies and procedures as a strategy to implement clinical guideline recommendations. Specifically, the study explored the nature and extent of changes to policies and procedures and examined organizational factors that may influence modifications to policies and procedures in the context of clinical

guideline implementation. Since few studies have focused on clinical guideline implementation strategies specific to nursing practice, the findings of this study are valuable.

The analysis revealed that all of the 11 agencies taking part in the study reported changes to their policies and procedures following clinical guideline implementation. However, at only eight agencies, 75% of the nursing staff or more reported modification to policies and procedures. These findings stress the importance of clearly communicating changes to policies and procedures. Changes to policies and procedures should be disseminated in many ways to reach all nurses and other disciplines, as required. Further studies are needed to explore through observations and patient chart audits whether nursing practice reflects the clinical guideline recommendations that have been added to policies and/or procedures or whether changes occur in practice even when policies and procedures were not changed.

In addition, the extent of the changes to policies and procedures varied considerably between agencies with some agencies reporting minimal changes compared to others agencies reporting extensive changes, including changes to documents and other organizational processes. There is a need for further research to explore the factors that influence the extent of changes to policies and procedures and whether modifications of policies and procedures to reflect guideline recommendations actually helps to sustain the practice over time. It is hypothesized that changes to policies and procedures accompanied by changes in organizational processes will result in sustained practice change.

No statistically significant relationships were found between the type of agency (acute care versus chronic care, rehabilitation and community care); the agency designation (teaching versus non teaching); or the nurses' perceived level of organizational stability and nurses who agreed that there had been modifications to policies and procedures or nurses who disagreed that modification to policies and procedures were made. However, the current study found a statistically significant relationship in the nurses' perceived levels of organizational support between nursing staff who agreed that there had been modification to policies and procedures versus those who disagreed. This finding has not been found in the literature and provides quantitative data to document previous narrative reports about the value of organizational support. These data may be helpful for theory developers about organizational approaches to evidence-based practice change in nursing.

References

Aarons, G. A. (2004). Mental health provider attitudes toward adoption of evidence-based practice: the Evidence-Based Practice Attitude Scale (EBPAS). *Mental Health Services Research*, 6, 61-74.

Alley, L. G. (2001). The influence of an organizational pain management policy on nurses' pain management practices. *Oncology Nursing Forum*, 28, 867-874.

Amann, M. C. (2001). Management file. The policy and procedure manual -- keeping it current. *AAOHN Journal*, 49, 69-71.

Angus, J., Hodnett, E., & O'Brien-Pallas, L. (2003). Implementing evidence-based nursing practice: a tale of two intrapartum nursing units. *Nursing Inquiry*, 10, 218-228.

Bajnok, I. & Scott, J. G. (2002). Evaluating Your Success. In *RNAO Toolkit: Implementation of Clinical Practice Guidelines* (pp. 39-46). Registered Nurses Association of Ontario.

Bero, L. A., Grilli, R., Grimshaw, J. M., Harvey, E., Oxman, A. D., & Thomson, M. A. (1998). Closing the gap between research and practice: an overview of systematic reviews of interventions to promote the implementation of research findings. The Cochrane Effective Practice and Organization of Care Review Group.[see comment]. [Review] [31 refs]. *BMJ*, 317, 465-468.

Brett, J. L. L. (1987). Use of nursing practice research findings. *Nursing Research*, 36, 344-349.

Brett, J. L. L. (1989). Organizational integrative mechanisms and adoption of innovations by nurses. *Nursing Research*, 38, 105-110.

Cabana, M. D., Rand, C. S., Powe, N. R., Wu, A. W., Wilson, M. H., Abboud, P. A. et al. (1999). Why don't physicians follow clinical practice guidelines? A framework for improvement.[comment]. [Review] [111 refs]. *JAMA*, 282, 1458-1465.

Campbell, N. J. (1998). What's a Policy, What's a Procedure? In *Writing Effective Policies and Procedures, A Step-by-Step Resource for Clear Communication* (pp. 1-19). American Management Association (AMACOM).

Canadian Council on Health Services Accreditation (2002). *Achieving Improved Measurement*.

Carter, A. O., Battista, R. N., Hodge, M. J., Lewis, S., Basinski, A., & Davis, D. (1995). Report on activities and attitudes of organizations active in the clinical practice guidelines field. *CMAJ Canadian Medical Association Journal*, 153, 901-907.

Champagne, M. T., Tornquist, E. M., & Funk, S. G. (1997). Nurse practitioner extra. Achieving research-based practice... adapted with permission from "Research Use in Advanced Practice Nursing," by Champagne, M.T., et al., in *Advanced Practice Nursing: Changing Roles and Clinical Applications*, edited by J.V. Hickey, et al. Copyright 1996 by Lippincott-Raven Publishers, Philadelphia, PA. *AJN, American Journal of Nursing.*, 97, Nurse-BBB.

Champion, V. L. & Leach, A. (1989). Variables related to research utilization in nursing: an empirical investigation. *Journal of Advanced Nursing.*, 14, 705-710.

Chapman, A. (1996). Current theory and practice: a study of pre-operative fasting. *Nursing Standard.*, 10, 33-36.

Ciliska, D. K., Pinelli, J., DiCenso, A., & Cullum, N. (2001). Resources to enhance evidence-based nursing practice. *AACN Clinical Issues.*, 12, 520-528.

Clarke, S. P. & Cossette, S. (2000). Secondary analysis: theoretical, methodological, and practical considerations. [Review] [44 refs]. *Canadian Journal of Nursing Research.*, 32, 109-129.

Closs, S. J. & Cheater, F. M. (1994). Utilization of nursing research: culture, interest and support. *Journal of Advanced Nursing.*, #1994 Apr, 61.

Coyle, L. A. & Sokop, A. G. (1990). Innovation adoption behavior among nurses. *Nursing Research.*, 39, 176-180.

Davies, B. L. (2002). Sources and models for moving research evidence into clinical practice. *JOGNN - Journal of Obstetric, Gynecologic, & Neonatal Nursing.*, 31, 558-562.

Davis, D. A. & Taylor-Vaisey, A. (1997). Translating guidelines into practice. A systematic review of theoretic concepts, practical experience and research evidence in the adoption of clinical practice guidelines.[comment]. [Review] [61 refs]. *CMAJ.*, 157, 408-416.

Davis, D. A., Thomson, M. A., Oxman, A. D., & Haynes, R. B. (1995). Changing physician performance. A systematic review of the effect of continuing medical education strategies.[see comment]. *JAMA.*, 274, 700-705.

Dillman, D. A. (2000). *Mail and internet surveys: the tailored design method.* (2nd ed.) New York: John Wiley & Sons.

Dixon-Woods, M., Agarwal, S., Young, B., Jones, D., & Sutton, A. (2004). *Integrative Approaches to Qualitative and Quantitative Evidence* Health Development Agency, London, UK.

Dobbins, M., Ciliska, D., Cockerill, R., Barnsley, J., & DiCenso, A. (2002). A framework for the dissemination and utilization of research for health-care policy and practice. [Review] [80 refs]. *Online Journal of Knowledge Synthesis for Nursing.*, 9, 7.

Dobbins, M., Ciliska, D., & Mitchell, A. (1998). *Dissemination and Use of Research Evidence for Policy and Practice by Nurses: A Model of Development and Implementation Strategies* Ottawa, Ontario: Canadian Nurses Association.

Duff, L. A. R. G., Kitson, A. L. R. G., Seers, K. R., & Humphris, D. R. (1996). Clinical guidelines: an introduction to their development and implementation. [Article]. *Journal of Advanced Nursing* May, 23, 887-895.

Edwards, N., Davies, B., Danseco, E., Pharand, D., Brosseau, L., Ploeg, J. et al. (2004). Evaluation of Nursing Best Practice Guidelines: Organizational Characteristics. [M04-2]. Community Health Research Unit (CHRU) Monograph.
Ref Type: Serial (Book, Monograph)

Edwards, N., Davies, B., Dobbins, M., Griffin, P., Ploeg, J., & Skelly, J. (2-12-2001). Evaluation of the Dissemination and Utilization of the Best Practice Guidelines by Registered Nurses in Ontario; Ethics Proposal.
Ref Type: Generic

Edwards, N., Davies, B., Dobbins, M., Griffin, P., Ploeg, J., & Skelly, J. (2003a). *Evaluation of Pilot Sites Implementation, Cycle Three Technical Report.*

Edwards, N., Davies, B., Dobbins, M., Griffin, P., Ploeg, J., & Skelly, J. (2003b). *Final Report: Evaluation of Pilot Sites Implementation. Cycle Three Registered Nurses Association of Ontario (RNAO).*

Estabrooks, C. A. (1999a). Mapping the research utilization field in nursing. *Canadian Journal of Nursing Research.*, 31, 53-72.

Estabrooks, C. A. (1999b). Will evidence-based nursing practice make practice perfect? 1998. *Canadian Journal of Nursing Research.*, 30, 273-294.

Estabrooks, C. A. (2003). Translating research into practice: implications for organizations and administrators. *Canadian Journal of Nursing Research.*, 35, 53-68.

Estabrooks, C. A., Floyd, J. A., Scott-Findlay, S., O'Leary, K. A., & Gushta, M. (2003). Individual determinants of research utilization: a systematic review. *Journal of Advanced Nursing.*, 43, 506-520.

Fain, J. A. (2004). *Reading, Understanding, and Applying Nursing Research: A Text and Workbook.* (Second Edition ed.) Philadelphia: F.A. Davis Company.

Fellows, L. S., Miller, E. H., Frederickson, M., Bly, B., & Felt, P. (2000). Evidence-based practice for enteral feedings: aspiration prevention strategies, bedside detection, and practice change. *MEDSURG Nursing.*, 9, 27-31.

Field, M. & Lohr, K. N. (1990). *Guidelines for clinical practice: Directions for a new program*. Washington, DC: Institute of Medicine, National Academy Press.

Foxcroft, D. R. & Cole, N. (8-25-2003). Organizational Infrastructures to Promote Evidence Based Nursing Practice (Cochrane Review). The Cochrane Library [4]. Chichester, UK: John Wiley & Sons, Ltd.

Ref Type: Generic

Foy, R., MacLennan, G., Grimshaw, J., Penney, G., Campbell, M., & Grol, R. (2002). Attributes of clinical recommendations that influence change in practice following audit and feedback. *Journal of Clinical Epidemiology.*, 55, 717-722.

Fuller, J. B., Barnett, T., Hester, K., & Relyea, C. (2003). A Social Identity Perspective on the Relationship Between Perceived Organizational Support and Organizational Commitment. [References]. *Journal of Social Psychology*, 143, Dec03-791.

Funk, S. G., Champagne, M. T., Wiese, R. A., & Tornquist, E. M. (1991a). Barriers to using research findings in practice: the clinician's perspective. *Applied Nursing Research.*, 4, 90-95.

Funk, S. G., Champagne, M. T., Wiese, R. A., & Tornquist, E. M. (1991b). BARRIERS: the barriers to research utilization scale. *Applied Nursing Research.*, 4, 39-45.

Gerrish, K. & Clayton, J. (2004). Promoting evidence-based practice: an organizational approach. *Journal of Nursing Management.*, 12, 114-123.

Graham, I. & Logan, J. (2004). Innovations in Knowledge Transfer and Continuity of Care. *Canadian Journal of Nursing Research.*, 36, 89-103.

Graham, I., Harrison, M., Logan, J., & McCleary, L. (2003). Deciding on Your Implementation Strategies. In *RNAO Toolkit: Implementation of clinical practice guidelines* (pp. 47-56). Registered Nurses Association of Ontario.

Griffin, P. & Edwards, N. (2002). Literature Review: Research Receptor Capacity and Research Utilization. CHRU Monogram Series .

Ref Type: Journal (Full)

Grimshaw, J. M., Thomas, R. E., MacLennan, G., Fraser, C., Ramsay, C. R., Vale, L. et al. (2004). Effectiveness and efficiency of guideline dissemination and implementation strategies. [Review] [47 refs]. *Health Technology Assessment (Winchester, England).*, 8, iii-iv.

Grol, R. (2001). Successes and failures in the implementation of evidence-based guidelines for clinical practice. *Medical Care.*, 39, II46-II54.

Grol, R., Dalhuijsen, J., Thomas, S., Veld, C., Rutten, G., & Mokkink, H. (1998). Attributes of clinical guidelines that influence use of guidelines in general practice: observational study. *BMJ*, *317*, 858-861.

Harrow, D., Foster, J., & Greenwood, J. (2001). Evidence and leadership: the tools for change. [Review] [40 refs]. *Contemporary Nurse*, *11*, 9-17.

Hatcher, S. & Tranmer, J. (1997). A survey of variables related to research utilization in nursing practice in the acute care setting. *Canadian Journal of Nursing Administration*, *10*, 31-53.

Hill, J. E. (2003). New directions in nursing management. *Journal of Nursing Management*, *11*, 4-5.

Horsley, J. A., Crane, J., Crabtree, M. K., & Wood, D. J. (1983). *Using Research to Improve Nursing Practice: A Guide*. Grune and Stratton, New York.

Hunt, J. (1981). Indicators for nursing practice: the use of research findings. *Journal of Advanced Nursing*, *6*, 189-194.

Hunt, J. M. (1996). Barriers to research utilization. *Journal of Advanced Nursing*, *23*, 423-425.

Kitson, A., Ahmed, L. B., Harvey, G., Seers, K., & Thompson, D. R. (1996). From research to practice: one organizational model for promoting research-based practice. *Journal of Advanced Nursing*, *23*, 430-440.

Logan, J. & Graham, I. (1998). Toward a Comprehensive Interdisciplinary Model of Health Care Research Use. *Science Communication*, *20*, 227-246.

Lomas, J. & Haynes, R. B. (1988). A taxonomy and critical review of tested strategies for the application of clinical practice recommendations: from "official" to "individual" clinical policy. [Review] [117 refs]. *American Journal of Preventive Medicine*, *4*, 77-94discussion.

MacGuire, J. M. (1990). Putting nursing research findings into practice: research utilization as an aspect of the management of change. *Journal of Advanced Nursing*, *15*, 614-620.

Manias, E. & Street, A. (2000). Legitimation of nurses' knowledge through policies and protocols in clinical practice. *Journal of Advanced Nursing*, *32*, 1467-1475.

McCabe, L. R. (1998). Simplify and energize policy development. *Nursing Management*, *29*, 43-45.

McCaughan, D., Thompson, C., Cullum, N., Sheldon, T. A., & Thompson, D. R. (2002). Acute care nurses' perceptions of barriers to using research information in clinical decision-making. *Journal of Advanced Nursing*, *39*, 46-60.

Miles, M. B. & Huberman, A. M. (1994). *Qualitative Data Analysis, An Expanded Sourcebook*. (Second Edition ed.) Thousand Oaks, California: SAGE Publications.

Moore, G. C. & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research*, 2, 192-222.

Moulding, N. T., Silagy, C. A., & Weller, D. P. (1999). A framework for effective management of change in clinical practice: dissemination and implementation of clinical practice guidelines. *Quality in Health Care*., 8, 177-183.

Needham, D. M., Anderson, G., Pink, G. H., McKillop, I., Tomlinson, G. A., & Detsky, A. S. (2003). A province-wide study of the association between hospital resource allocation and length of stay. *Health Services Management Research*., 16, 155-166.

NHS Center for Reviews and Dissemination (1999). Getting evidence into practice. *Effective Health Care*, 5, 1-16.

Ontario Hospital Association (2004). *Advancing Accountability Through Hospital Funding Reform; a Policy Framework to Promote Greater Access, Efficiency and Quality of Care*.

Oxman, A. D., Thomson, M. A., Davis, D. A., & Haynes, R. B. (1995). No magic bullets: a systematic review of 102 trials of interventions to improve professional practice. *CMAJ Canadian Medical Association Journal*., 153, 1423-1431.

Paige, J. B. (2003). Solve the policy and procedure puzzle. *Nursing Management*., 34, 45-48.

Pierson, P., Hesnard, D., & Haas, J. (2000). Information technology. Intranet systems offer fast access to policies and procedures. *Nursing Management*., 31, 13.

Polit, D. & Hungler, B. (1999). *Nursing Research, Principles and Methods*. (Sixth ed.) Lippincott.

Registered Nurses Association of Ontario. (2002). Toolkit: Implementation of clinical practice guidelines. Toronto, Canada, Registered Nurses Association on Ontario. Ref Type: Generic

Retsas, A. (2000). Barriers to using research evidence in nursing practice. *Journal of Advanced Nursing*., 31, 599-606.

Rhoades, L. & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. [References]. *Journal of Applied Psychology*, 87, Aug02-714.

Rhoades, L., Eisenberger, R., & Armeli, S. (2001). Affective commitment to the organization: The contribution of perceived organizational support. [References]. *Journal of Applied Psychology*, 86, Oct01-836.

Rogers, E. M. (2003). Innovation in Organizations. In *Diffusion of Innovations* (Fifth Edition ed., pp. 402-435). Free Press.

Royle, J., Blythe, J., Ciliska, D., & Ing, D. (2000). The organizational environment and evidence-based nursing. *Canadian Journal of Nursing Leadership*, 13, 31-37.

Rutledge, D. N. & Donaldson, N. E. (1995). Building organizational capacity to engage in research utilization. *Journal of Nursing Administration*, 25, 12-16.

Schultz, R. L. & Slevin, D. P. (1975). Implementation and organizational validity: An empirical investigation. In American Elsevier (Ed.), *Implementing operations research/management sciences* (pp. 153-182). New York.

Seymour, S. (2000). Adult/elderly care nursing. Preoperative fluid restrictions: hospital policy and clinical practice. *British Journal of Nursing*, 9, 925-930.

Smith, P., James, T., Lorentzon, M., & Pope, R. (2004). Evidence-Based Policy Making. In *Shaping the Facts: Evidence-based Nursing and Health Care* (pp. 219-240). Churchill Livingstone.

Stetler, C. B. (2001). Updating the Stetler Model of Research Utilization to facilitate evidence-based practice. *Nursing Outlook*, 49, 272-279.

Stetler, C. B. (2003). Role of the organization in translating research into evidence-based practice. [Review] [39 refs]. *Outcomes Management*, 7, 97-103quiz.

Stonestreet, J. S. & Lamb-Havard, J. (1994). Organizational strategies to promote research-based practice. *AACN Clinical Issues in Critical Care Nursing*, 5, 133-146.

Streubert Speziale, H. J. & Carpenter, D. R. (2003). *Qualitative Research in Nursing, Advancing the Humanistic Imperative*. (Third Edition ed.) Lippincott Williams & Wilkins.

Szabo, V. & Strang, V. R. (1997). Secondary analysis of qualitative data. *ANS - Advances in Nursing Science*.

Thomas, L. H., McColl, E., Cullum, N., Rousseau, N., & Soutter, J. (1999). Clinical guidelines in nursing, midwifery and the therapies: a systematic review. [Review]. *Journal of Advanced Nursing*, 30, 40-50.

Van Der Weide, M. & Smits, J. (2001). The influence of ward characteristics on the adoption of innovation in nursing. *Nursing Economics*, 19, 220-227.

van derWeide, M. & Smits, J. (2004). Adoption of innovations by specialised nurses: personal, work and organisational characteristics. *Health Policy*, 68, 81-92.

Van Koot, B. & Laverty, P. (1992). A research foundation for policies and procedures. *Canadian Nurse*, 88, 39-41.

VandenBosch, T. M., Cooch, J., & Treston-Aurand, J. (1997). Research utilization: adhesive bandage dressing regimen for peripheral venous catheters. *AJIC: American Journal of Infection Control*, 25, 513-519.

Waddell, D. L. (1991). The effects of continuing education on nursing practice: a meta-analysis. *Journal of Continuing Education in Nursing*, 22, 113-118.

Wallin, L., Bostrom, A., Wikblad, K., & Ewald, U. (2003). Sustainability in changing clinical practice promotes evidence-based nursing care. *Journal of Advanced Nursing*, 41, 509-518.

Walthall, S. A., Odtohan, B., McCoy, M. A., Fromm, B., Frankovich, D., & Lehmann, M. H. (1993). Routine withholding of digitalis for heart rate below 60 beats per minute: widespread nursing misconceptions. *Heart & Lung*, 22, 472-476.

Zeitz, K. & McCutcheon, H. (2002). Policies that drive the nursing practice of postoperative observations. *International Journal of Nursing Studies*, 39, 831-839.

Appendix A

Text Words Used During the Search of the Literature

Main text words	Synonymous, connected or combined text words
Organizational stability	<ul style="list-style-type: none"> • Environmental stability, • Financial stability, • Human resources stability, • Hospital funding • Organizational infrastructure
Organizational support	<ul style="list-style-type: none"> • Managerial support • Peer support • Supportive nursing environment
Policy	<ul style="list-style-type: none"> • Innovation adoption and hospital policy, • Change in practice and hospital policy, • Policy perception and innovation adoption, • Evidence based practice and hospital policy, • Knowledge transfer and hospital policy, • Best practice and hospital policy, • Practice and hospital policy, • Research findings and hospital policy, • Diffusion of innovation and hospital policy, • Research based nursing practice and hospital policy, • Hospital policy and research, • Organizational policy and practice, • Organizational policy and research, • Organizational policies and (nursing as a profession, career in nursing, clinical nursing research, nursing administration, nursing research, nursing knowledge, nursing literature, nursing management, nursing organization, nursing outcomes, nursing practice – evidence-based, nursing practice-research based, nursing practice theory based, nursing protocols), • Organizational policy and innovation adoption, • Diffusion of innovation and nursing protocols, • Change management and nursing protocols, • Change management and policies, • Change management and nursing protocols, • Change management and diffusion of innovation

Procedures	<ul style="list-style-type: none">• Nursing procedures,• Nursing protocols,• Hospital protocols
Workplace Environment	<ul style="list-style-type: none">• Workplace health



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Faculté des sciences de la santé
École des sciences infirmières

Faculty of Health Sciences
School of Nursing

Appendix B

Introductory Letter to Nursing staff

Study Title: Evaluation of the Dissemination and Utilization of Best Practice Guidelines by Registered Nurses in Ontario

Dear Participant,

You are invited to participate in a study which is being undertaken by researchers from the University of Ottawa on behalf of the Registered Nurses Association of Ontario (RNAO). The purpose of the study is to examine the utility and effectiveness of best practice guidelines related to patient/client care and to evaluate the dissemination and uptake of best practice guidelines by Registered Nurses in Ontario.

The Registered Nurses Association of Ontario (RNAO) through funding from the Ministry of Health and Long Term Care has embarked on a project to develop, implement, evaluate and disseminate through the province, nursing best practice guidelines.

The specific purposes of the study are to;

- document the process of best practice guideline implementation across project sites from the perspective of clinical nurse specialists/nurse clinicians, nursing staff and administrators
- determine the effectiveness of the project on changes in nursing practice and improvements in patient/client outcomes
- determine perceived utility and value of the clinical practice guidelines by clinical resource nurses, nursing staff and administrators
- examine factors which influence the implementation of best practice guidelines

What Will I be Asked to Do?

You will be asked to complete two written questionnaires as well as to complete an evaluation form immediately after the education session. The first questionnaire will be given to you prior to implementation of the Best Practice Guidelines. The second questionnaire will be given to you at the end of the implementation period, approximately six months later. The items on the written questionnaires ask your opinions about organizational, environmental and attitudinal factors that may influence implementation of the best practice guidelines in your workplace. The questionnaire also asks about your experience with the best practice guidelines. Each questionnaire takes about 15 to 20 minutes to complete.

Appendix C

Certification of Ethics Approval from the University of Ottawa (main study)**HEALTH SCIENCES AND SCIENCE RESEARCH ETHICS BOARD****CERTIFICATION OF ETHICS APPROVAL**

This is to certify that the University of Ottawa Health Sciences and Science Research Ethics Board (REB) examined the application for extension of ethics approval for the research project **Evaluation of the dissemination and utilization of best practices guidelines by Registered Nurses in Ontario (File H 08-00-11)** submitted by Nancy Edwards and Ms. Barbara Davies of the School of Nursing. This project received initial ethics approval in January 2002 by the REB as meeting appropriate ethical standards set out in the Tri-Council Policy Statement and in the Procedures of the University of Ottawa Research Ethics Boards. The University of Ottawa REB members accordingly gave it an extension of ethics approval. This ethics renewal certification is valid for one year from the date indicated below.

Andrée Bertrand
Protocol officer for ethics in research
For Daniel Lagarec,
Chair, Health Sciences and Science REB

April 3rd, 2003
Date

Appendix D

RNAO Best Practice Guideline

Post-Implementation Questionnaires

Note: The 14 questions within a frame were used as variables for the current secondary analysis

4. Perceived Characteristics of Innovating (PCI)

The following items are designed to measure how people feel about new innovations. Please indicate the extent to which you *agree* or *disagree* with each of the following statements, concerning your experiences with the **NAME OF BPG** implemented on your unit. *There are no right or wrong answers. We are interested in your opinions.* Please circle your response.

		Strongly Disagree	Disagree	Agree	Strongly Agree
4.1	Using the RNAO best practice guideline has improved the quality of patient care I provide.	1	2	3	4
4.2	The RNAO best practice guideline has been advantageous for my job.	1	2	3	4
4.3	The RNAO best practice guideline is compatible with my daily practice.	1	2	3	4
4.4	Results of using the RNAO best practice guideline are apparent to me.	1	2	3	4
4.5	I can explain why using the RNAO best practice guideline is beneficial for nurse on our unit.	1	2	3	4
4.6	The RNAO best practice guideline is useful to my work.	1	2	3	4
4.7	It has been easy to implement the RNAO best practice guideline.	1	2	3	4
4.8	Standard unit policies/procedures have fit well with the RNAO best practice guideline.	1	2	3	4
4.9	Unit &/or agency policies/procedures have been modified to reflect the RNAO best practice guideline.	1	2	3	4
4.10	The RNAO best practice guideline is too complicated for use by nursing staff.	1	2	3	4

10. Organizational Stability

Listed below are examples of organizational changes that may have influenced the RNAO best practice guideline recommendations regarding **NAME OF BPG**. For each item, indicate **to what extent this change has taken place in your organization over the past 6-month**. (Please circle your response).

		Not at all	Somewhat			To a large extent
10.6	Financial pressures (constraints or cutbacks)	1	2	3	4	5
10.7	Staff cuts	1	2	3	4	5
10.8	High staff turnover	1	2	3	4	5
10.9	Infusion of new money into organization	1	2	3	4	5
10.10	High staff absenteeism	1	2	3	4	5
10.11	Hiring of new staff	1	2	3	4	5
10.12	Increasing percentage of casual nurses	1	2	3	4	5

11. Organizational Support for BPG implementation

The following items concern how supportive you feel your organization was in facilitating the implementation of the RNAO best practice guidelines. Using the response categories provided, please indicate the extent to which you agree or disagree with each of the following statements. *There are no right or wrong answers. We are interested in your opinions.*

		Strongly Disagree	Disagree	Agree	Strongly Agree
11.1	Top management has supported staff to implement the RNAO best practice guidelines.	1	2	3	4
11.2	Nurses have readily adopted changes required to implement the RNAO best practice guidelines.	1	2	3	4
11.3	Nurses were given sufficient time and training to learn how to use best practice guidelines.	1	2	3	4
11.4	We had adequate numbers of qualified staff to implement the RNAO best practice guidelines.	1	2	3	4
11.5	We have the equipment & supplies needed to implement the best practice guideline.	1	2	3	4

Appendix E

RNAO Best Practice Guideline

Qualitative Questionnaire Cycle Three

Administrator Interview

Staff Nurse Interview

Clinical Resource Nurse Final Interview

Note: The questions within a frame were reviewed as part of the current secondary analysis

Qualitative Questionnaire Cycle Three
 ADMINISTRATOR INTERVIEW
 STAFF NURSE INTERVIEW
 CLINICAL RESOURCE NURSE – FINAL INTERVIEW

Section 7 – **I am now going to read to you a list of factors that may of may not have made the implementation of the guideline difficult.**

7.1 Was the perception of nurses about the guidelines a barrier or not a barrier in the implementation?

Prompt: Did the nurses feel that:

- The guidelines were not needed
- They were already doing them
- They would increase the workload
- The tools were too difficult or time consuming to use
- The language of the tools was not appropriate for all patients and settings
- The guidelines conflicted with policies

7.2 Were there logistical problems in implementing the BPG?

- Prompt:
- Timelines too short
 - Processes involved were confusing
 - Not enough expertise on the team (practice, education, research)
 - Problems with communication across multiple sites or agencies

7.3 Were limited resources a barrier to implementing the BPG?

- Prompt:
- Staffing levels not sufficient to meet patient needs as described in BPG
 - Resource person(s) not available or did not have enough time
 - All staff not able to attend the education sessions
 - Not enough necessary equipment or supplies
 - Not enough funding (for education or nurses, purchase of

7.4 Was the unit's workload a barrier to the implementation of the BPG?

- Prompt:
- Interfered with attendance at education sessions?
 - Interfered with being able to attend meetings?

7.5 Was resistance to change a barrier to the implementation of the BPG?

Prompt: On the part of:
 Nurses
 Patients
 Families
 Physicians
 Others – please explain

7.6 Were there any organizational issues that were challenging for the implementation of the BPG?

Prompt: Change in management
 Organization/agency restructuring
 Adequate space (to meet with patients, for education sessions, etc.)

7.7 Was continuity in patient care a challenge for the implementation of the BPG?

Prompt: High staff turnover
 BPG not included in orientation to new staff
 Limited time to get to know the patient

Section 8 – Now, I’m interested in knowing about any results from the implementation of the Best Practice Guideline on [guideline topic]

8.3 Has there been a review of the guideline recommendations by your organization’s committee responsible for policies and procedures?

8.4. Have there been any modifications to policies and/or procedures in your organization as a result of the implementation of the Best Practice Guideline on [guideline topic]?

Prompt: Please describe
 Large or small steps toward policy change

Appendix F

RNAO Best Practice Guideline

Organizational Demographics Survey

Note: Question 2b in Part 1 was used as a variable for the current secondary analysis. Question 10j (RN and RPN) in Part 2 were used to create Table 4-1 – Selected Organizational Demographics of the 11 Agencies for the current secondary analysis.

Appendix G:

**Letter and Certificate of Ethical Approval from the University of Ottawa
(Secondary Analysis)**

May 20, 2004

Dr. Barbara Davies
School of Nursing
University of Ottawa
451 Smyth
Room 3239
Ottawa, ON K1H 8M5

Mrs. Isabelle St-Pierre
521 Harrowsmith Way
Orléans, ON K4A 2Z4

**Object: Organizational Context and the Revision of Policies: Towards the
Implementation of Best Practices (file H 05-04-15)**

Dear Researchers,

You will find enclosed the Health Sciences and Science REB ethical clearance for the
abovementioned research study.

Please note that it is the responsibility of the Researchers to:

Inform the ethics office of any changes in the research project; and

b) Fill out an annual status report to be sent to the Protocol Officer for Ethics in Research.

Such report can be found on the ethics web site at:

http://www.uottawa.ca/services/research/rge/rebs/download/rapport_annuel_projets_anglais.doc

A copy of this approval will be sent to Research Services, if necessary.

If you have any questions, you may contact me at extension 5387.

Sincerely yours,

Rita D'Alessandro
Protocol Officer for Ethics in Research
For Dr. Hugh French, Chair of the Health Sciences and Science REB

HEALTH SCIENCES AND SCIENCE RESEARCH ETHICS BOARD

CERTIFICATE OF ETHICAL APPROVAL

This is to certify that the University of Ottawa Health Sciences and Science Research Ethics Board has examined the application for ethical approval for the research project entitled **Organizational Context and the Revision of Policies: Towards the Implementation of Best Practices (file H 05-04-15)** submitted by Isabelle St-Pierre who is supervised by Barbara Davies, both of the School of Nursing, Faculty of Health Sciences. The Board found that this research project met appropriate ethical standards as outlined in the Tri-Council Policy Statement and in the Procedures of the University of Ottawa Research Ethics Boards, and accordingly gave it a Category 1a (approval). This certification is valid for one year from the date indicated below.

Rita D'Alessandro
Protocol Officer for Ethics in Research
For Dr. Hugh French, Chair of the
Health Sciences and Science REB

Date May 20, 2004

Appendix H

**Proportions of full time and part time Registered Nurses and
Registered Practical Nurses for each unit**

Agency	# Units	# RN/unit	% FT RN	# RPN/unit	% FT RPN
A	2	Unit A - 13 FT & 10 PT	Unit A - 57%	Unit A - 5 FT & 5 PT	Unit A - 50%
		Unit B - 59 FT & 26 PT	Unit B - 69%	Unit B - None	Unit B - None
B	2	Unit A - 28 FT & 29 PT	Unit A - 49%	Unit A - None	Unit A - None
		Unit B - 12 FT & 13 PT	Unit B - 48%	Unit B - None	Unit B - None
C	1	20 FT (only designated team members were involved with BPG project)	100%	None	None
D	3	Unit A - 47 FT & 38 PT.	Unit A - 55%	Unit A - 11 FT & 27 PT.	Unit A - 29%
		Unit B - 3 FT & 0 PT.	Unit B - 100%	Unit B - None	Unit B - None
		Unit C - 32 FT & 23 PT	Unit C - 58%	Unit C - 11 FT & 32 PT	Unit C - 26%
E	1	16 FT & 25 PT	39%	None FT & 17 PT	None
F	3 (> 1 site)	Unit A - 16 FT & 9 PT	Unit A - 64%	Unit A - 6 FT & 2 PT	Unit A - 75%
		Unit B - 22 FT & 11 PT	Unit B - 67%	Unit B - None	Unit B - None
		Site 2 - 27 FT & 4 PT	Site 2 - 87%	Site 2 - 5 FT & 0 PT	Site 2 - 100%
G	3	Unit A - Not available (N/A)	Unit A - N/A	Unit A - N/A	Unit A - N/A
		Unit B - 6 FT & 8 PT	Unit B - 43%	Unit B - 7 FT & 5 PT	Unit B - 58%
		Unit C - Not available (N/A)	Unit C - N/A	Unit C - N/A	Unit C - N/A
H	1	Unit A - 60 FT & 18 PT	Unit A - 77%	Unit A - None	Unit A - None
I	> 1 site	Site 1 - 24 FT & 3 PT	Site 1 - 86%	Site 1 - 10 FT & 5 PT	Site 1 - 67%
		Site 2 - 4 FT & 3 PT	Site 2 - 57%	Site 2 - 0 FT & 1 PT	Site 2 - None
		Site 3 - 1 FT & 2 PT	Site 3 - 33%	Site 3 - None	Site 3 - None
		Site 4 - 6 FT & 7 PT	Site 4 - 60%	Site 4 - None	Site 4 - None
J	1	16 FT & 44 PT	27%	50 FT & 44 PT	53%
K	> 1 site	Unit A - 3 FT & 3 PT	Unit A - 50%	Unit A - 2 FT & 4 PT	Unit A - 33%
		Unit B - 7 FT & 9 PT	Unit B - 44%	Unit B - 2 FT & 11 PT	Unit B - 15%

Appendix I

Summary of data from transcripts following interviews with administrators, nursing staff and clinical resource nurses regarding their perception of organizational support

<i>Agency</i>	<i>Were staffing levels sufficient to meet patient needs as described in BPG</i>	<i>Was there enough necessary equipment</i>	<i>Was the unit workload a barrier to the implementation of the BPG</i>
A (2 units)	Were sufficient for one unit but not the other. A unit was staffed by a high proportion of casual and agency nurses as well as several new staff including new grads with limited experience.	Yes, plenty	Perceived as a barrier to BPG implementation for one unit but not for the other. Work design on one unit contributed to the challenge.
B (2 units)	Sufficient A challenge to replace staff in order for them to attend educational session (8hr workshop over 2 days) Resource nurse had limited availability	Specialty unit did not have enough of a specific equipment item.	Not perceived as a barrier to BPG implementation by administrators but perceived as a barrier at times by nurses, mostly related to the length of stay of the patient (short stay – greater needs). Perceived as a barrier by the specialty unit.
C (1 unit)	Sufficient Education sessions were 4 hrs.	Yes, enough	Not perceived as a barrier since staff had flexibility in scheduling appointment to take account for BPG recommendations.

D (3 units)	Consistently not sufficient Busy units with very high acuity Attendance to educational session was limited – according to CRN only about 50% of staff was able to attend sessions.	Generally enough equipment One nurse was concerned that when the project was over, they would no longer get the necessary equipment.. Doctors were taking the equipment items so nurses had to hide them.	Nursing shortage and acuity of patient was perceived at times to be a barrier to BPG implementation. Depending on the acuity of the patient, had to address the more urgent problem first
E (1 unit)	Sufficient Challenge to replace staff in order for them to attend educational session	Generally enough except for one specific equipment item.	Not perceived as a barrier since staff was given an extra half hour per patient to implement BPG recommendations Two initiatives were happening concurrently thus competing for nurses' time.
F (3 units) > 1 site	Sufficient according to administrators but not sufficient according to front line staff and CRNs. Implementation during the summer months thus reduced staff because of holidays. Challenge to replace staff in order for them to attend educational session.	Because of the nature of the BPG, not a barrier.	Perceived as a barrier because nurses were required to spend more time with patients. One specific type of unit (short stay unit) perceived workload to be a barrier to BPG implementation.
G (3 units)	Challenge to replace staff in order for them to attend educational session. A unit had a vacant nursing position thus was often short staffed.	Because of the nature of the BPG, not a barrier.	The paperwork required to implement the BPG recommendations increased the nurses' workload. Many initiatives happening concurrently increasing nurses' workload.

H (1 unit)	A high proportion of new staff on the unit thus needed to hold several educational sessions to keep new staff current. Lack of continuity of care reflective of the nursing shortage.	Because of the nature of the BPG, not a barrier.	Unit workload (heavy and complex unit) interfered with ability to implement BPG. As part of the implementation of the BPG, nurses were required to spend more time with patients. Unit used the help of clerical persons to support nurses with BPG implementation.
I (>1 site)	Perceived as sufficient at most sites. One site employed a high proportion of agency staff. A challenge to replace staff in order for them to attend educational sessions	Because of the nature of the BPG, not a barrier.	Perceived as a barrier to implement BPG recommendations because nurses were required to spend more time with patients and to follow up and monitor behaviour. A unit made it part of the nurses' daily routine.
J (1 unit)	Sufficient A challenge to replace staff in order for them to attend educational sessions.	Not an issue	Change in the complexity of the unit increased workload.
K (>1 site)	Sufficient	Missing a particular equipment item for a specific type of patient.	Became an issue during an infectious outbreak where nurses had to change their practices to accommodate new restrictions. Midway through BPG project, a site was awarded a new contract which increased the workload.

Appendix J

Summary of data from transcripts following interviews with administrators, nursing staff and clinical resource nurses regarding their perception of organizational stability

Agency	Were there any <i>organizational issues</i> that were <i>challenging</i> for the implementation of the BPG?	Was <i>high staff turnover</i> a challenge for the implementation of BPG?
A (2 units)	Initially, three units were involved. However, one got phased out during the project. Another unit had no manager. Interim people were assigned to the unit but did not focus on the project.	Not a challenge
B (2 units)	Specialty unit manager was off for 8 weeks. Specialty unit was also undergoing operational and managerial review as well as being involved in another study at the same time as the implementation of the BPG.	Not a challenge
C (1 unit)	Physical restructuring of the building.	Seven to eight nurses left after attending the educational sessions but before the implementation.
D (3 units)	No issue reported.	An challenge for one unit
E (3 units)	Agency lost a nursing contract near the end of the BPG project.	Not a challenge
F (3 units) > 1 site	At one site, some nurses perceived there were not enough incentives for people to implement the BPGs. There was a change in the “champion” at the beginning of the project at another site.	There was a month were the agency had to rely a high proportion of agency nurses.
G (3 units)	Nurses did not have access to a quiet space to assess patients. Too many new initiatives at once. A manager left during the project One unit had lots of organizational issues.	Not a challenge

H (1 unit)	<p>Structural changes at unit level. Too many initiatives at once. Logistical issues – where to place new forms. Challenges with evening and night time admissions because of reduced staff. Change in management. Change in CRN and project coordinator. Difficulty finding a place to hold educational sessions.</p>	<p>High staff turnover due to full time nurses going part-time or casual High attrition rate from the unit</p>
I (> 1 site)	<p>Change in management's portfolio. Implementation of a new model of continuity of care. Work practices being changed.</p>	<p>One site relied on a high proportion of agency nurses but this was not perceived as an issue because BPG recommendations were incorporated into nursing care plan.</p>
J (1 unit)	<p>No issue reported.</p>	<p>Not a challenge</p>
K (> 1 site)	<p>Not all people attended educational sessions. Had to close unit during infectious outbreak. Part way through implementation, agency was awarded a new contract increasing nurses' workload.</p>	<p>Was a challenge for one unit.</p>