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Creating a Culture for Rehabilitation in the Acute Stroke Unit

By

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This paper is dedicated to Nathan and Samuel.

It is my hope that this experience will instil within you a quest for knowledge in your own lives.

Thank you to my husband Doug,

and to my parents, Harold and Faye, for all the support they have given to me along my journey.

To the members of my project committee, I give my sincerest thanks.

My deepest appreciation to Dr. Marjorie McIntyre for her patience and wisdom that has helped guide me through this journey.

To Carol McDonald, my sincerest thank you for your help in getting me back on the right path.

The reality is that patients are not getting the care we know could be provided…. It shouldn't matter where you live in Canada; there is a moral obligation to ensure that all people have access to the best care available.

Dr. Antoine Hakim, CEO and Scientific Director of the Canadian Stroke Network

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Abstract

In this paper the scholarly nursing research and realities within the workplace were examined to identify the factors that either facilitated or obstructed the implementation of stroke rehabilitation best practices within the acute stroke unit at the Regina Qu'Appelle Health Region (RQHR). This was done within the context of stroke rehabilitation in Canada, focusing on the incidence of stroke and the strengths and weaknesses that exist within the delivery of stroke rehabilitation best practices at the national, provincial and local levels. Based on these findings, recommendations from the perspective of the Clinical Nurse Specialist (CNS) were made to promote the practice of equal and timely access to stroke rehabilitation for all persons diagnosed with moderate to severe stroke treated within the RQHR.

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Stroke places a heavy burden on individuals, families and society as a whole. The impact of moderate to severe stroke on those persons who have experienced such an event may leave them physically, emotionally, socially and financially dependent on others. This dependency not only places a huge burden on the individual and family but extends to a larger societal burden. The goal of stroke rehabilitation is to enable the person who has experienced a stroke to reach his or her optimal level of recovery and offer successful re-integration into the community. When stroke rehabilitation is provided in an efficient and organised manner it is known to improve functional, psychological and social outcomes, decrease mortality and improve the likelihood of discharge to home (Noorani, Brady, McGahan, Teasell, Skidmore, & Doherty, 2003; Stroke Unit Trialists' Collaboration, 1997). However, barriers are known to exist in accessing stroke rehabilitation in this country (Teasell, Foley, Bhogal, Bagg, & Jutai, 2006; Heart and Stroke Foundation of Saskatchewan [HSFS], 2005).

A description of the role of the nurse in stroke rehabilitation is limited in the literature. As well, little is known about the nurses' role in providing early rehabilitation in the acute stage of stroke or in ensuring that those who need specialised stroke rehabilitation following acute care management receive it in an equal and timely manner. It has been my experience that nurses in the acute care setting are limited in performing rehabilitation by the heavy demands placed on their time, inadequate staffing and insufficient knowledge of which persons benefit from stroke rehabilitation as well as other external pressures that exist at a systems level in the acute care setting. I believe that these limited resources as well as the external pressures on nursing that are experienced within the acute care setting obstruct the implementation of stroke rehabilitation best practices that may ensure equal and timely access to stroke rehabilitation.

The purpose of my Advanced Practice Leadership graduate project was to examine both the scholarly nursing research and the realities within the workplace of the acute stroke unit at the Regina Qu'Appelle Health Region (RQHR) to identify factors that either facilitated or obstructed stroke rehabilitation best practices. This was done within the context of stroke rehabilitation in Canada, focusing on the incidence of stroke and the strengths and weaknesses that exist at the national, provincial and local level. My overall project goal was to make recommendations within my practice area that would promote the practice of equal and timely access to stroke rehabilitation for all persons diagnosed with moderate to severe stroke treated within the RQHR. These recommendations were made from my perspective as the Clinical Nurse Specialist (CNS) for stroke within the region.

In order to complete this project, an in-depth synthesis and critique of the available literature that described the role of the nurse in stroke rehabilitation was completed. As well, Canadian best practices for management of rehabilitation in stroke as described within the literature were presented. The aim of this review of the literature was to provide a critical analysis of the state of knowledge regarding the nurses' role in stroke rehabilitation. In my analysis, a comparison was made between the practices of the nurses within the acute stroke unit at the Regina General Hospital to that described in similar practice settings within the literature. In comparing the nursing role, as described within the literature, to that which exists within the realities of the workplace, factors that facilitated or inhibited implementation of best practices and access to a specialised stroke rehabilitation unit were described. In conclusion, recommendations were made to create a culture for rehabilitation within the acute stroke unit and promote the practice of equal and timely access to specialised stroke rehabilitation for all persons diagnosed with moderate to severe stroke.

The Context of Stroke Rehabilitation in Canada

Impact of stroke

Stroke is the fourth leading cause of death and the leading cause of long-term disability in Canada. Each year, it is estimated that between 40,000 to 50,000 people experience a stroke and about 300,000 Canadians are currently living with the effects of this disease (Heart and Stroke Foundation of Canada [HSFC], 2002). After the age of 55 years, the risk of stroke doubles every 10 years. Therefore, when we consider an aging population, as well the increasing obesity and inactivity rates of Canadians, the impact of stroke is expected to have an even greater effect on individuals, families and society in our future (Heart and Stroke Foundation of Saskatchewan [HSFS], 2008).

The impact of stroke on individuals, families and society is high. In Canada, it is estimated that stroke costs the economy about 2.7 billion dollars a year (HSFC, 2002). In addition, Canadians spend three million days per year in hospital due to the effects of stroke. For every 10 persons that experience a stroke, five are left with moderate to severe impairment and one of those five persons will be admitted to a long-term care facility due to the severity of their stroke (HSFC). As well, the loss of physical health, inability to return to work, lost retirement dreams and loss of independence all have a negative impact on the quality of life for both the person experiencing a stroke and his or her spouse or family (Green & King, 2007; O'Connell, Hanna, Penney, Pearce, Owen, & Warelow, 2001; HSFS, 2005).

Defining Stroke Rehabilitation

Fundamental to the treatment and care of those persons who have experienced a stroke is the minimisation of the impact of their stroke on both themselves and their family members (Warlow, cited in Chambers 2007). This concept is consistent with the beliefs and assumptions

that are associated with stroke rehabilitation. Thus, stroke rehabilitation offers an opportunity to improve the functional recovery of those persons who have experienced stroke. When it is used within its full scope, one would assume that it would also improve quality of life, decrease caregiver burden and ultimately prevent a second stroke.

In the nursing literature, Waters and Luker (1996) have defined rehabilitation as "the whole process of enabling and facilitating the restoration of a disabled person to regain optimal functioning (physically, socially and psychologically) to the level she/he is able or motivated to achieve" (p. 107). The Heart and Stroke Foundation of Ontario [HSFO] (2007) have defined stroke rehabilitation as the "progressive, dynamic, goal-orientated process aimed at enabling a person with impairment to reach his or her optimal physical, cognitive, emotional, communicative and/or social functional level" (p. 23). Included in this definition is the concept of a multidimensional approach to stroke care that includes prevention, psychosocial coping and adaptation, community reintegration and quality of life for those persons and their families who have experienced stroke. This latter definition highlights a broader perspective in stroke rehabilitation to one that includes the concepts of social and caregiver support, quality of life, education and secondary prevention of future stroke.

Inequality: Limited Access to Stroke Rehabilitation

Inequality on the basis of social factors in accessing stroke care is described within the research literature (Bhalla, Grieve, Tilling, Rudd, & Wolfe, 2004; Foerch, Misselwitz, Humpich, Steinmetz, Neumann-Haefelin, Sitzer, 2007; Gargano, Wehner, & Reeves, 2008; Kapral, Devon, Winter, Wang, Peters, & Bondy, 2006; McKevitt, Coshall, Tilling, & Wolfe, 2005; Mold, Wolfe, & McKevitt, 2006). These studies have reported differences in stroke treatment related to age, gender, ethnicity, and socioeconomic status. The majority of these studies have looked at the

provision of stroke treatment in the acute stage of stroke care. However, two European studies have described the social factors that influence access to both stroke unit care and rehabilitation therapy (Bhalla et al., 2004; McKevitt et al., 2005). Although stroke unit care was not clearly defined within these studies, one assumes that it meets the criteria laid out later in my paper, either as a combined acute care/rehabilitation unit or as a specialised stroke rehabilitation unit.

In the first study, inequality in the delivery of stroke care to older persons was identified among a large cohort of persons across Europe who had experienced first time stroke (Bhalla et al., 2004). Although older persons had higher rates of access to organised stroke care in the acute care setting, there was a lower percentage of older persons who had access to rehabilitation despite higher rates of disability. As well, it was found that older persons were less likely to be discharged home and more likely to be discharged to an institution.

In a second study by McKevitt et al. (2005), unequal and suboptimal stroke care delivery existed in 22 separate wards in south London. For example, only 25 percent of persons who experienced a stroke were admitted to a stroke unit even when best practices suggest that stroke unit care is more effective than traditional models of care (McKevitt et al.). Black Caribbean and Africans, as well as those persons of higher socioeconomic status, were more likely to be admitted to a stroke unit than others. Yet, those persons in nonmanual occupational groups (therefore, of higher socioeconomic status) were less likely to have physical therapy (PT), occupational therapy (OT) and speech language pathologist (SLP) treatment. Social factors such as age and gender were not limitations to accessing stroke unit care. However, older persons did experience inequality in other areas of access to stroke care (McKevitt et al.). In particular, they were less likely to be admitted to hospital yet were more likely to receive PT and OT care in the community.

Inequalities in access to organised stroke care and stroke rehabilitation also exist within Canada. That is, even when rehabilitation is known to improve outcomes in persons who have experienced a stroke, access and delivery of stroke rehabilitation is not consistent across the country and many do not receive the rehabilitative care that they need (Teasell et al., 2006). In a report by the stroke rehabilitation system consensus panel in Ontario (HSFO, 2007) it was identified that local policies and practices, within the various health regions, affected access to inpatient rehabilitation services in a specialised stroke rehabilitation unit. That is, a lack of evidence-based and standardised admission criteria, insufficient clustering of stroke rehabilitation patients, inability to admit to rehabilitation care seven days per week and local physician practice and pressures to keep beds occupied in small rural hospitals all contributed to variable access, longer wait periods or non referrals to a specialised stroke rehabilitation unit (HSFO). Thus, the decision to refer persons who have experienced moderate to severe stroke to stroke rehabilitation were driven by criteria that are subjective and based on local policies and practices.

I believe that these policies and practices also impact the stroke rehabilitation services that are provided in this province. In a recent study conducted in Saskatchewan, many who had experienced a stroke encountered inconsistencies in how they were referred to rehabilitation (HSFS, 2005). The following quote from this study presents a puzzling picture of the referral system for stroke rehabilitation in this province:

> Some were easily and quickly admitted to rehabilitation therapy, whereas others had to wait with much difficulty for the opportunity to get admitted to any therapy services. Over and over participants told of not being referred for any rehabilitation, treatment or follow up services. (p. 21)

Furthermore, this study demonstrated that those patients from rural areas, even if treated in a larger urban tertiary hospital, were less likely than those who lived in the urban setting to receive rehabilitation services after their stroke. Thus, the type of care that is received by those who have experienced a stroke has more to do with the coordination of services within the community that they had their stroke in, than by their need for rehabilitation.

Decision-making: An Important Part of the Care Trajectory

Decision-making by health professionals and those persons who have experienced a stroke is an important part of the care trajectory. The type of decisions made by these individuals impacts the care that a person receives after a stroke (Kapral et al., 2006; Mold et al., 2006). In one study, judgements by healthcare professionals about the rehabilitation potential of a specific person, and the implications that the person's admission would have on the staff and the unit in general, affected the decision-making process of who was admitted to stroke rehabilitation (Mold et al.). When the professionals who participated in the study were asked which persons they believed may not receive rehabilitation therapies, three specific groups emerged. These groups included persons with cognitive impairments, those defined as complex, as well as people with communication problems, such as those who were aphasic or spoke English as a second language (Mold et al.).

Kapral et al. (2006) looked at gender and its impact on decision-making in acute stroke care and secondary prevention of stroke in Canada. This study demonstrated that women were less confident in their decisions for stroke treatment, requested more information about the intervention and took less risk than men when it came to making decisions about the treatment needed. Although further research needs to be done to determine why women's decision-making

processes are different than their male counterparts, this study demonstrates that the decisions that are made by the individuals themselves may affect the care that they receive.

In a study done in the United Kingdom (UK) that looked at micro-rationing in health care, "ruling-in" was described as a method that multidisciplinary teams used to decide which persons should gain access to neuro-rehabilitation (Hughes & Griffiths, 1997). Often the physicians, who made the referrals for rehabilitation, used some pre-screening criteria which "showed that many would not refer older patients, patients with disturbed behaviour or those unlikely to make progress" (Hughes & Griffiths, p. 590). In the cases that were presented, social histories that made reference to motivation and family support were often used in the beginning of the decision-making process as a means of making the patients seem deserving of the treatment. Team members would use this criterion in presenting the person to others within the group to rule-in potential rehabilitation candidates demonstrating their deservedness and thus helping them to gain access to rehabilitation even when pre-selection criteria may have deemed them as undeserving.

I believe that in my practice setting, decisions in the referral of persons to stroke rehabilitation are made on the basis of what Hughes and Griffiths (1997) describe as the ruling-in process. That is, all patients are not automatically considered rehabilitation candidates and may be ruled out on the basis of stroke severity or other factors that limit their access to stroke rehabilitation. Instead, persons with severe stroke are "ruled in" based on their motivation and family support. That is, the person who has experienced a stroke must be highly motivated, have a family that is able to advocate for him or her and present a willingness to care for that person after stroke rehabilitation is completed. Little consideration is given for the person who may not have adequate family or care-giver support.

The Role of the Nurse in Stroke Rehabilitation: A Literature Review

Aim

The purpose of this review of the literature was to examine the state of knowledge regarding the nurses' role in stroke rehabilitation. The review was situated within my own assumption that access to stroke rehabilitation is not equal and exists within the context of care as described above. As well, it is my belief that nurses within the acute stroke unit play a significant role in determining appropriateness for referral to rehabilitation and may at times inhibit equal access to stroke rehabilitation. In particular, I believe that those persons who experience moderate to severe stroke and are not considered ideal candidates for rehabilitation are sometimes excluded from the referral process.

Search Criteria

This review of the literature covered a 13 year period from January 1995 to February 2008. As well, additional limiters were used within this search that included English language journals and peer reviewed journal articles. Ageline, CINAHL, HealthSource – nursing/academic edition, MEDLINE and PsycINFO electronic databases were used in this search. As well, non-research and review articles were used to determine the depth of the literature in this area and as a tool for finding additional articles (snowballing technique). However, these articles were not included in the final selection of the literature.

The terms *stroke nursing*, *nurse*, *rehabilitation* and *stroke* were combined with each of the terms *access, decision-making*, and *deservedness* which revealed a paucity of journal papers with a specific focus on the nurses' role in determining appropriateness for referral to rehabilitation. Therefore, a broader search which identified the nursing role in stroke rehabilitation was completed using only the terms *stroke nursing*, *nurse**, *rehabilitation* and

stroke. It was my hope that the literature on the nursing role in stroke rehabilitation itself described a role in which nurses facilitated or determined appropriateness for referral to rehabilitation.

Search Outcome

A combination of the terms *stroke nursing* and *nurse** and *rehabilitation* and *stroke* was used and 124 articles were found. Preliminary criteria for inclusion into this review were papers that identified a specific and comprehensive nursing role in stroke rehabilitation, and met the limitations of date, English language and peer reviewed articles as described above. Using these criteria, the articles were assessed using the titles and electronic abstracts to determine suitability (Green & King, 2007). Thirty-four articles were then reviewed in entirety and a final selection of nine articles was made based on the preliminary criteria that were identified and that they were original research articles and not secondary articles or literature reviews.

In my search, I believed that a comprehensive description of the nursing role in stroke rehabilitation was still not provided. Therefore, I carried out a broader search using the terms *nursing* and *rehabilitation*. This search identified an additional four articles that were added to the review. These articles, although specific to the nursing role in rehabilitation, were not specific to stroke rehabilitation. However, I believed that they provided an increased depth to the review and met my final selection criteria. In that they:

- described or contributed to a comprehensive view of the nursing role in rehabilitation and
- described the rehabilitation process in stroke, neurological or elderly/geriatric care.

The Literature Review

Using the Matrix Method as described by Garrard (2007), each of the 13 articles was evaluated using a structured abstracting form with the following topics: study design, country/setting/participants, and nursing role in rehabilitation.

Study Design

Of the 13 articles that were chosen for this literature review, a qualitative approach to understanding the nursing role in rehabilitation using various study designs and populations for study was used within eleven of the articles. A qualitative approach to understanding the phenomena under study is appropriate when little is known about a particular subject and when there is a desire to capture the "realities and viewpoints of those under study-realities and viewpoints that are not known or understood at the outset" (Polit & Beck, 2004, p. 245). In the remaining two articles, a mixed qualitative and quantitative approach was used. In their study, Pound and Ebrahim (2000) used a mixed quantitative and qualitative approach in their observation of patient-multidisciplinary team encounters. However, it was the qualitative data that was reported in the article that was chosen for review in this paper. As well, O'Connor (2000) used a qualitative and quantitative design in his study. However, the quantitative data was used to gather background information on the stroke units and did not impact his findings on the nursing role in rehabilitation. Within all 13 articles, the authors identified that a limited amount of knowledge of the nursing role exists within the literature and a clear role for the nurse in rehabilitation is yet to be realised, both within the specialist rehabilitation unit and in the acute care setting.

Various study designs were used within the articles selected for review that were consistent with a qualitative approach to research. In the majority of the articles, interviews were

conducted by the researchers. However, the amount of structure within the interviewing process depended on the specific approach used within the study. For example, two studies in this review implemented a phenomenological approach to explore the participants' experiences and realities with nursing following a stroke and thus provided little structure to the interview process as the participants were asked to describe their experiences and were not guided through the process (MacDuff, 1998; Secrest, 2002). Semi-structured interviews were used by Hill and Johnson (1999), O'Connor (2000), Pryor and Smith (2002), and Waters and Luker (1996), to clarify the nursing role in rehabilitation from the perspective of the multidisciplinary team, or experienced rehabilitation nurses themselves. In the article by Atwal, Tattersall, Caldwell and Craik (2006), semi-structured interviews were used to determine the perceptions of all members of the rehabilitation team on one specific unit as a part of a larger participatory action research study. In his study, Burton (2000) used an open-ended method of interviewing that encouraged the nurse participants to reflect on a particular clinical incident that described their realities of the nursing role in rehabilitation.

Non-participant observation was used in three of the studies in which interactions of the participants were observed by independent researchers that were not known to them (Booth, Davidson, Wenstanley & Waters, 2001; Kirkevold, 1997; Pound & Ebrahim, 2000). Two of these studies observed patient-nurse versus OT interactions or patient-nurse interactions respectively (Booth et al., 2001; Kirkevold, 1997). However, Kirkevold also interviewed the nurses in the study in addition to observing the interactions between them and the persons they were caring for. Pound and Ebrahim (2000) used both qualitative and quantitative methods for observation of patient-multidisciplinary team interactions. The quantitative method for

observation consisted of checking off certain predetermined quantitative interactions between these two groups.

A large two-year qualitative study that was reported in two of the articles in this review used a variety of study designs that included both interviewing members of the multidisciplinary team and persons with stroke, rheumatoid arthritis, and fractured neck of femur who were cared for in rehabilitation, as well as observational inquiry and review of medical information to gain a better understanding of the nursing role (Long, Kneafsey & Ryan, 2003; Long, Kneafsey, Ryan, & Berry, 2002). Additional focus groups of experts in the subject area were used to confirm findings in the study by Long et al. (2002; 2003) and the study by Pryor & Smith (2002).

Country/Setting/Participants

No Canadian articles that described a comprehensive view of the nursing role in rehabilitation could be found in this search of the literature. Ten of the 13 articles in this review were written in the United Kingdom (UK) (Atwal et al. 2006; Booth et al, 2001; Burton, 2000; Hill & Johnson, 1999; Long et al., 2002; Long et al, 2003; MacDuff, 1998; O'Connor, 2000; Pound & Ebrahim, 2000; Waters & Luker, 1996). The other three were written in Norway, Australia, and the United States respectively (Kirkevold, 1997; Pryor & Smith, 2002; Secrest, 2002). Therefore, it must be noted that a Canadian perspective of the role of the nurse in stroke rehabilitation is lacking within this review of the literature.

Another limitation of this literature review was that there were only two studies that looked at the role of the nurse in rehabilitation in the acute care setting (Atwal et al., 2006; Kirkevold, 1997). Another two studies in this review included participants recruited in a variety of acute and subacute stroke rehabilitation settings (Long et al. 2002, 2003; O'Connor, 2000). Pryor and Smith (2002) looked at the rehabilitation nursing role in general and did not look at a

specific setting but recruited nurses from four rehabilitation settings in Sydney Australia to explore the role of RNs working in that country. A limitation of that study was that the authors did not clearly define the rehabilitation settings within the study. However, it was included in this review of the literature as it provided a comprehensive description of the nursing role and was thought that it most likely included some of the participant groups that were identified in my final criteria. Four studies were specific to stroke and included patients who were cared for on a stroke unit, general rehabilitation unit, elderly care unit, or general medical ward (Booth et al., 2001; Burton, 2000; MacDuff, 1998; Pound & Ebrahim, 2000). Secrest (2002) studied those persons who experienced a stroke and their personal support persons (PSPs), however; the patients were recruited from a variety of patient settings. One study looked at rehabilitation on a neuro-rehabilitation unit (Hill & Johnson, 1999). The remaining study was conducted on two separate rehabilitation units for the elderly and was not specific to persons with stroke (Waters & Luker, 1996).

In all studies, convenience or purposive sampling was used. The majority of the studies in this literature review included small participant groups and were therefore limited in the generalisability of their findings to other practice settings (Atwal et al. 2006; Booth et al, 2001; Burton, 2000; Hill & Johnson, 1999; MacDuff, 1998; Pound & Ebrahim, 2000; Pryor & Smith, 2002; Secrest, 2002). However, most of these articles attempted to increase their sample size by including more than one inpatient unit in their study. Four of the articles had larger participant groups. However, they were also limited to one or two inpatient units (Kirkevold, 1997; Long et al., 2002; Long et al., 2003; Waters & Luker, 1996). In the largest study, O'Connor (2000) interviewed 90 qualified nurses in a representative sample of 21 stroke units. Participant groups in these studies included the multidisciplinary team, qualified experienced nurses, patients and

personal support persons or caregivers. Therefore, multiple perspectives were received from the various participant groups who were studied.

Nursing role in rehabilitation

In an early study by Waters and Luker (1996), nurses were not perceived as making a major contribution to the rehabilitation process and rehabilitation was not an inherent part of their work. In their study of the multidisciplinary teams' perception of the nursing role in rehabilitation, four roles for the nurse in rehabilitation were identified. These were called: general maintenance work, continence promotion, prevention and management of pressure sores, and the *carry-on* role. General maintenance work was associated with the basic nursing care that is provided by nursing such as personal hygiene, dressing and "all the little bits of your everyday routine" (p. 110). Continence promotion, and prevention and management of pressure sores were identified as a specialist role that was specific to nursing care. Finally, nurses participated in a carry-on role by continuing the prescribed work of the PT and OT in the absence of these therapists. Waters and Luker suggested that this role was possible because of the nurses' 24 hour presence at the bedside.

Kirkevold (1997) described four functions for the nurse within what she defined as a theoretical perspective of the nursing role in acute stroke rehabilitation. She described these functions as interpretive, consoling, conserving and integrative. The interpretive function was concerned with the education that nurses provided to persons and their families following stroke in order that they begin to understand how the stroke may affect them in their day-to-day activities and functioning. The nurses' consoling function supported the person and their family in the day-to-day experience of understanding the stroke, but also dealt with the emotions that were a consequence of the stroke. The conserving function provided by nursing was similar to

that which was described by Waters and Luker (1996) as general maintenance and specialist work. That is, basic care and prevention of complications were evident in this function. The last function of the nurse as described by Kirkevold was called the integrative function, which included the concept of helping the person with stroke to "integrate newly learned activities of daily living [ADL] skills and techniques in their daily activities" (p. 3). Kirkevold described this function as being more than that of the carry-on role described by Waters and Luker in that the nurses don't just do prescribed therapy with the person but "moves the ADL techniques from the exercise rooms and training situation" (p. 3) to the skills that are needed to assist patients to function at home.

In the study by MacDuff (1998), persons who had experienced a stroke were asked for their perceptions of hospital nursing care in order to clarify the nurses' role in practice. Two key themes and two main essences were identified in the study. The first and most frequent theme in the interviews described a positive evaluation of nursing care. However, this theme did not form the essence of the experience of nursing for these persons. Instead, MacDuff identified two essences of *having the necessary done* and *do it yourself* that described the experiences that the study participants had with nursing. Having the necessary done was often experienced in the acute stage of recovery after stroke. Within this essence were the constructs of being maintained by nurses (washing, dressing and mobility), fitting in with nursing availability (delaying going to the bathroom until the nurse could assist), and knowing nurse's attentiveness (the personal quality of the nurse that was seen when they were available to do the necessary). The essence of do it yourself emerged in the later stages of recovery and was often experienced in the stroke rehabilitation unit. Four constructs of doing it yourself were revealed that included: self-care as natural guiding philosophy, self-care as imposed policy, intellectual recognition of ultimate

benefit, and transitional feelings (MacDuff). The person's locus of control helped to define how accepting they were of the nurses encouraging them to do it themselves. The final key theme of valuing therapy came out of the person's successes with therapy that were often supported by the emotional support given to them by nurses.

Hill and Johnson (1999) described three themes in their study that looked at how rehabilitation nurses themselves perceived their role. The first theme related to nursing actions that were specific to patient care in rehabilitation. This theme identified four subthemes which included: features that promoted patient's independence, routine nursing tasks, management of individual care and counseling. I believe that the carry-on role or integrative function of the nursing role as described earlier in this paper is most evident in the subtheme of promoting patient's independence. Management of individual patient care included the concepts of discharge planning and goal setting that included a holistic nurse-patient relationship and family work. The other two themes within this article described the organisational issues that influenced practice such as that which affected the nurses' ability to perform rehabilitation (barriers) and their beliefs and opinions about their role. Teamwork was central to this final theme and nurses saw themselves as making a positive contribution to the team in their role as central communicator.

Six themes were identified in O'Connor's (2000) study that looked at what nursing interventions were characteristic of the nurses' role in the acute stroke unit within the UK. The nursing interventions identified in stroke care were discussed within the criteria and concepts of these six themes which included focus of care, outcomes of care, direct care, continuity of care, mode of care and context of care. The nursing role was defined in two of these themes: direct care and continuity of care (O'Connor). That is, direct care included:

- maintenance care, which was similar to that which Waters and Luker (1996) described earlier as general maintenance care
- specific care which included relative care, psychological care, continence care, and handling and positioning of the patient and
- rehearsal care which related to the carry-on or integrative role described earlier in that the nurses continued therapy in absence of the therapists.

Continuity of care included teaching, coordination, and assessment of care by nurses who were best positioned to take on these roles because of their 24 hour presence. The other four themes identified nursing interventions that further refined the role of the nurse in stroke rehabilitation. These themes included: that the patient and caregiver are central to the caring process, that there is some degree of patient choice in rehabilitation, that interventions need to be balanced between when to intervene and not intervene and that the environment in which the nurse acts needs to be safe, multidisciplinary and include the correct location for care.

Burton (2000) identified three categories that described the nurses' reflection on their practice in stroke rehabilitation. The first category was that of care provider which included the provision of basic requirements such as nutrition, hydration and elimination, as well as maintenance of safety and prevention from harm. However, the nurses believed that these activities were not directly related to the outcomes of rehabilitation. The second category identified the nurse as "facilitator of personal recovery" (p. 178). In this category, the nurses provided care for the emotional and social aspects of recovery so that strategies for coping could be developed and well-being either maintained or improved upon. The final category included the nurse as coordinator of multidisciplinary care. In this final category, the nurses used the team

conference as the process by which decisions were made and "felt that they were best placed to provide information relating to patients' general progress, coping and emotional health" (p. 179).

In their study that looked at why stroke unit care was associated with improved stroke outcomes, Pound and Ebrahim (2000) identified a lack of rehabilitation work that was carried out by nurses, and found that nurses in the stroke unit did not liaise well with the therapy team. The nurses on the stroke unit also demonstrated a lack of compassion towards the persons admitted on the unit and at times those persons were "ignored or treated as non-persons" (p. 1440). It may be important to note that after the results were reported to the staff on the various units involved in this study, the nursing manager on the stroke unit at the time was replaced by a more qualified nurse manager.

Booth et al. (2001) looked at how nurses carried-on the work of therapies by comparing the nurses' work with that performed by the OTs during morning care. It was found that "both disciplines were observed using 'providing articles', 'giving physical assistance' and 'doing for' styles of interaction for similar proportions of the sessions" (p. 101). However, the nurses used facilitation techniques significantly less than the OTs did during morning care with the participants in this study. This may demonstrate that the OTs are more familiar with the therapeutic approach of Bobath or neurodevelopmental treatment (NDT) which incorporates facilitation techniques into the delivery of care. This approach "focuses on normal patterns of movement in order to decrease spasticity … [and thereby] change or suppress abnormal movement in order to introduce normal patterns of motor function" (Seneviratne & Reimer, 2004, p.14). Thus, this finding demonstrates the need for nurses to be further educated in the various rehabilitation techniques if they are to carry-on the therapeutic role after therapy hours for the person who has experienced a stroke.

In an existential-phenomenological study by Secrest (2002), in which persons who experienced stroke and their primary support persons (PSPs) told of their experiences with rehabilitation nursing care, a single theme of helpful/adversarial care emerged. Generally, the person who experienced stroke viewed nursing as helpful, wonderful or nice, while the PSPs' experiences were mainly adversarial in nature. That is, the PSPs found the "nurses to be in the background, and hence not helpful, or to be sources of obstacles and frustration" (p. 180).

Pryor and Smith (2002) identified seven domains of practice in their study of nurses' perceptions of their role in rehabilitation. They identified five domains which described the *how* of rehabilitation nursing. In these domains the following nursing roles were identified: the rehabilitative approach; the teaching and coaching role; observation, assessment and interpretation; management, advocacy and co-ordination role; and monitoring and ensuring the quality of health care practices. The *what* of rehabilitation nursing such as administering and monitoring therapeutic interventions and management of rapidly changing situations was also described within this study by Pryor and Smith. The management, advocacy and co-ordination role identified in this study is similar to that described by Burton (2000) in his category of the nurse as coordinator of multidisciplinary care. In these roles, the nurses believed that they were best able to assume the role of co-ordinator and manager of care because of their 24 hour contact with the person and their family.

In their article, Long et al. (2002) identified six interlinked roles for the nurse within the multidisciplinary rehabilitation team. These six roles included: assessment, co-ordination and communication, technical and physical care, therapy integration and therapy carry-on, emotional support, and family involvement. The assessment role included the identification of actual or potential problems that would affect rehabilitation. Co-ordination and communication included

critical thinking about information that was gathered in order to relate this information to families and therapists. At times, the nurses' 24 hour presence put them in the position of bearing the "brunt of complaints or criticisms, which were often unrelated to nursing care" (p. 74). This was similar to the manager of multidisciplinary provision role that was described in Burton's (2000) earlier work. As well, Long et al. (2002) saw the technical and physical care within the nursing role as the routine and expected care that nurses provide to those persons in their care. However, they have also described this work as "a unique nursing contribution" (Long et al., p. 74) within the multidisciplinary team. This role was similar to the general maintenance work (Waters & Luker, 1996), conserving function (Kirkevold, 1997) and the maintenance care role (O'Connor, 2000) that were presented earlier in this paper. Therapy integration and therapy carry-on as described by Long et al. was similar to that discussed in Kirkevold's, and Waters and Luker's articles. The fifth nursing role that was identified in this study consisted of the emotional work that was carried out by the nurses in the support that is given to the persons in their care. This role was similar to the ideas that Kirkevold had incorporated into the consoling function role that was identified in her study. The final role of the nurse in this study was that in which the nurse included the family members into the care that was provided to the person who had experienced a stroke. Thus, this role included the nursing activities of "providing information, emotional care, communication and co-ordination" (Long et al., p. 75). In most instances within this study, the family was not included in the person's rehabilitation experience, although there was an acknowledgement that the nurses' role was to include them in this process.

In the second article, Long et al. (2003) described the perceptions that the nurses had of themselves within the multidisciplinary team setting. Their findings suggested that at times the nurses were confused about their role in rehabilitation and did not always recognise their

contribution to rehabilitation care. This was especially true in the acute care setting where they described that "acute care nursing could be disabling rather than enabling" (p. 667). That is, the person in their care, as well as the nurses themselves, saw the nursing role in the acute care setting as having the nurse there to care for the person and thereby *do for* them (Long et al.). Thus, the nurses missed the opportunity to enable the person to do for themselves and therefore to encourage rehabilitation work in the acute care setting.

In their study, Atwal et al. (2006) looked at the multidisciplinary team's perceptions of the nurses' role in rehabilitation of older adults in acute health care in which two key roles were identified. These roles included therapy carry-over and co-ordination of care. The carry-over role, which was the same as the carry-on role described earlier in this paper, was most obvious in the nurses' assistance with mobilisation of those persons in their care. The nurse would help these persons mobilise once they were seen by the therapist. The second role that was identified in this study was the co-ordination role which was limited to the referral of persons in their care to departments or other individuals who were responsible for further rehabilitation care.

Critical Analysis of the Literature

Limitations of the Research

Much of the research in this review of the literature has been completed in the UK. The small participant groups and limited practice settings in these studies limit the generalisation of these findings to the larger nursing rehabilitation population. Thus, caution must be taken when applying these findings to the role of nurses within rehabilitation in Canada. In addition, only two of these studies had identified that the participants were cared for in an acute rehabilitation setting. The first of these two articles (Atwal et al., 2006) was concerned with the nursing role in the rehabilitation of older adults in the acute health care setting but was not specific to stroke

care, while the latter article (Kirkevold, 1997) defined the role of nursing in the acute stroke unit setting. Another two of the articles included both acute and subacute rehabilitation settings in the recruitment of the study participants (Long et al. 2002, 2003; O'Connor, 2000). Thus, the literature appears at first glance to be sufficient in defining the nursing role in rehabilitation; however, through a further analysis of this literature a paucity of research on the role of nursing in the acute stroke rehabilitation setting is evident especially within the Canadian context. These findings are consistent with that of Seneviratne and Then (2006) in that they identified that the nursing role in the acute stroke unit was undefined and that "authors do not describe the ways nurses coordinate early stroke rehabilitation or indicate the use of set nursing guidelines to manage stroke rehabilitation in the acute care setting" (p. 38).

Comparison of the Nursing Role to that in the Acute Stroke Unit

Five common themes which describe the nursing role in rehabilitation were found within this literature review. In the following section, these themes are highlighted to compare the nursing role identified in the literature to the practices of the nurses within the acute stroke unit at the Regina General Hospital.

General and specialist nursing work.

General nursing work, such as washing, dressing, nutrition and elimination that is provided to persons who have experienced stroke is considered by many of the authors in this review to be a significant role of the nurse in rehabilitation. Although this work is labelled by the authors in many different ways, the care that is provided in this role is essentially the same. For example, Waters and Luker (1996) defined this role as general maintenance work. Kirkevold (1997) described it within the conserving function in which nurses meet the person's basic needs, maintaining normal functioning and preventing complications. Burton (2000)

described this role in his category of care provider and included all of the basic needs that nurses provide to persons with stroke as described by Kirkevold. O'Connor (2000) described three types of care in his theme of direct care: maintenance care, which is similar to Waters and Luker's description of general maintenance care, specific care and rehearsal care, which included specialist nursing care as well as the care that has significance to rehabilitation and related to the carry-on role. The difference found in these articles was that Burton, O'Connor, and Waters and Luker believed that the general maintenance work or maintenance care was not considered to be intrinsically rehabilitation while Kirkevold believed that this work was essential to rehabilitation in that it ensured "that the patient is in the best possible condition to carry through with the rehabilitation" (p. 3). Long et al. (2002) described the technical and physical care which was similar to that which was called general nursing work "as routine and an expectation by all team members"; however, they also believed that this role contributed to a unique nursing function within the multidisciplinary team in rehabilitation.

In their description of what they call technical and physical care, Long et al. (2002) included infection screening and wound management within that role. This again was similar to Kirkevold's (1997) description of the conserving function role that the nurse performs in that the function was "geared toward preventing and protecting" (p. 3). However, Waters and Luker (1996) referred to these advanced functions, which included continence promotion and prevention, and management of pressure sores, as a specialist role for nursing. An expanded role for nursing, beyond general nursing work, was also described by O'Connor (2000) and included such work as continence care and the handling and positioning of the patient in his description of specific care.

Hill and Johnson (1999) described this work as routine nursing tasks. In addition, they stated that these tasks took place within the rehabilitation role in nursing when the nurse took a *hands-off approach* to directing care for the person in rehabilitation, or the *do it yourself approach* that was described by MacDuff (1998). Booth et al. (2001) stated that the most common form of rehabilitation work that was done by nurses during morning care activities such as washing and dressing was *supervision* work in which the nurse stood back to observe the person's "activities with the purpose of ensuring the rehabilitative effects of each action or maintaining safety" (p. 105). MacDuff further described this approach as that which makes rehabilitation nursing different from that of general nursing care, which he called *being maintained by nursing* which was said to be more common in the acute care units.

General and specialist nursing work is a key focus of the nursing care that is provided in the acute stroke unit at the Regina General Hospital (RGH). Pound and Ebrahim (2000) found that the nurses who worked on the stroke unit in their study seldom encouraged "patients to do things on their own as they helped them with everyday activities such as getting dressed" (p. 1440). As well, Long et al. (2003) found that nurses, especially those in the acute care setting, were faced with "constraints on their practice [that] only allowed them to "do the basics" (p. 667). I believe that the *doing for* approach to general and specialist care occurs within the acute stroke unit, not because the nurses believe that they do not have a role in rehabilitation, but because the nurses believe that they lack the time to complete the general and specialist work that they see as essential to their work, as well as the rehabilitation work that they are encouraged to carry-on in the absence of therapy. This reality within the workplace is consistent with the findings of a recent qualitative study that was completed in the acute stroke unit in Calgary,

Alberta which showed that barriers to the implementation of rehabilitation by nurses also existed in that setting (C. Seneviratne, personal communication, January 22, 2008).

Therapy carry-on.

Waters and Luker (1996) have described the nursing role within rehabilitation as one that has included an understudy role in carrying-on the work prescribed by therapists. However, others have stated that this role is much more than that of an understudy and believe that nursing has a larger role to play in therapy carry-on (Burton, 2000; Kirkevold, 1997; O'Connor, 2000). They believe that the nurses' role is to assist the person to incorporate what is taught by therapists in the therapy room to that which is needed to complete the activities of daily living in a practical sense such as getting out of bed, eating, toileting, dressing etc. Hill and Johnson (1999) identified a role of carryover of therapy for nursing which they then further stated composed "a positive part of the nurses' roles" (p. 154). That is, the relearning and acquisition of new skills by the person who had experienced stroke were dependent on the carry-over of therapy that was provided by nurses. An interesting finding by MacDuff (1998) described therapy carry-on by nursing as occurring more often in the stroke rehabilitation unit as opposed to the acute care setting.

Pryor and Smith (2002) and Long et al. (2003) linked therapy carry-on to the education and co-ordination roles in nursing. Pryor and Smith believed that the teaching and coaching role in nursing helped in the carry-on work that was done by nurses as the nurses' focus was "predominantly on the development of self-care and independence of the patient" (p. 253). Long et al. believed that therapy carry-on had a limited focus, much of which was to carry-on the work set out by the therapists. However, they introduced the role of therapy integration in which the nurse created an environment which was therapeutic and facilitated rehabilitation. In this role

the nurse integrated "the work of the therapist and the client's new abilities into activities of living" (p. 74). This idea is similar to Kirkevold's (1997) idea of integrative function as being that which is more than doing the work of therapy but a translation of the new techniques into the changed lives that are experienced by those persons with stroke.

Although time restrictions exist in the therapy work that nurses are able to do in the acute stroke unit at the RGH, the nurses serve more than an understudy role in providing therapy to those persons that are admitted to this unit. The nurses always ensure that the person is up and seated at the bedside for periods throughout the day, and that they are safe to swallow their medications or food in the very early days when therapists may not yet have had a chance to assess the person's abilities. These early assessments by nurses assist the therapists in determining what treatments or approaches for rehabilitation may be needed by the person who has experienced the stroke. For example, if the person is felt to have an inadequate or unsafe swallowing reflex by nurses, the person is given nothing by mouth and the speech language pathologist (SLP) is often asked to see the person on an urgent basis to determine what type of diet, if any, would be appropriate. Thus, the rehabilitation role of the nurse in the acute stroke unit is more than just following what the therapists set out for them and includes the utilization of expertise beyond that of an understudy role.

Emotional support.

In stroke rehabilitation, much has been written on the assessment of quality of life for the person experiencing stroke and their caregiver. Yet, in my review of the literature little information was found that described how nurses help to improve the quality of life for those persons. However, there was recognition of the nurses' role in the emotional support of both the person experiencing the stroke and their family.

Kirkevold (1997) described the consoling function in the nursing role as one in which a trusting relationship is developed. She stated that this step was essential in helping the person with stroke and their family members through "a normal grieving process, promoting hope, and preventing depression" (p. 3). Hill and Johnson (1999) found that the emotional work that the nurses provided permeated many of the nursing roles identified within their study. That is, the roles of helping persons to cope, working with families and counselling all included the emotional work that was carried out by the nurses. Psychological care was identified by O'Connor (2000) as a concept within the nurses' role within the theme of direct care. Burton (2000) also described this role in his category of the nurse as facilitator of personal recovery in which the ideas of emotional and social aspects of recovery, as well as teaching and developing improved coping strategies were described.

Secrest (2002) identified that the persons who experienced a stroke had different experiences with the emotional care that was provided by their nurses than that which was experienced by their caregivers (or PSPs). That is, the person who had experienced a stroke had perceived the care that they received from the nurses "as wonderful or helpful" (p. 179). However, the caregivers believed that the nurses did not develop a trusting relationship with them which they felt was necessary in ensuring that they received the emotional care that they needed. The caregivers stated that they believed that the nurses "didn't know me…were in the background [or]…had no communication [with them]." (p. 179).

Long et al. (2002) noted that emotional support was a specific nursing role within rehabilitation. However, they also noted that nurses believed that they had little time to spend on this task, which then became "a source of frustration and guilt" (p. 75). MacDuff (1998), in his

study, described the person's perceptions of the emotional work that was carried out by the nurses in the acute care setting as being "inhibited by lack of time to talk" (p. 447).

I believe that emotional care is provided by the nurses within the acute stroke work through the compassion shown to those in need of complex care, including those persons who are in a coma, or have cognitive deficits as a result of their stroke. However, emotional care and support is not always provided when the workload is heavy. Emotional work becomes secondary to the general or specialist nursing care or therapy carry-on that is provided to those persons with stroke. That is, at times the nurses do not have the time to sit down with the persons in their care or their families to talk and answer the questions that those persons believe they need to have answered. Emotional work is most often done during encounters between the nurses during the day-to-day care that is provided to those persons in their care. However, little time is available for families and they are often referred to social work or the Clinical Nurse Specialist (CNS) in order that questions may be answered. Most frequently, it is during these visits with the social worker and the CNS that the families begin to seek out extra emotional support or voice their concerns about how they are managing with this sudden and dramatic change in their lives.

Education.

I believe that the nurses' role in education is an important component of the rehabilitation role in nursing. In her study, Kirkevold (1997) described the interpretation function as a role in which the nurse helped to interpret the consequences of the stroke for the person and family in order that they could begin to envision how the effects of stroke would impact their day-to-day activities and functioning. Hill and Johnson (1999) described this role within their theme of the promotion of the patient's independence in that the nurse taught the person new and specific

skills to cope with their stroke. That is, the nurse provided information to the person about their stroke in order that they were able to come to terms with their disability and thus feel more able to engage in self care. O'Connor (2000) described the education role of the nurse as providing timely and appropriate information to persons and their families during the day-to-day interactions that they have due to their 24 hour presence. Burton (2000) described this role for the nurse as encompassing two categories of the nurse as care provider and the nurse as facilitator of personal recovery. In these categories, the nurses' role in education was to teach the basic requirements that were needed to perform activities of daily living (ADLs) and to "help the patient come to terms with having a stroke" (p. 178). Pryor and Smith (2002) described the nurses' role in education as one in which the rehabilitation nurse "views every patient-nurse interaction as a teaching/learning opportunity" (p. 253). They believed that not only the patient but their family needed to be included in these interactions. Long et al. (2002) also defined this role as providing the family with information or advice. Like O'Connor, they believed that this was important as the nurses were often viewed as the most accessible person to provide information or advice due to their 24 hour position at the bedside.

The nurses within the acute stroke unit spend time in educating both the patient and family about the implications of stroke. However, because of time restraints, this role in nursing is not always realised by the nurse at the bedside. This is especially true with respect to education on the secondary prevention of stroke. Nurses believe that they do not have the time to educate those persons and their families, and also feel unprepared to teach them about risk factors and risk reduction. As well, nurses feel that the interpretation of medical diagnostics and treatments for the family and person who has experienced the stroke should be left for the physician to decipher. In my role as CNS for stroke, the nurses on the acute stroke unit will

often ask me to provide this information. The nurses cite lack of time and staffing as a main reason for this. However, I also believe that nurses need further education to support their ability to teach. I have found that recent work in promoting secondary best practice guidelines to the nursing staff on the acute stroke unit, as well as providing them with a one page summary of target goals for risk reduction, has increased the nurses' confidence in providing education to the person during the time they spend performing nursing care.

Co-ordination of care.

The last nursing role that was identified in this review of the literature was that of co-ordination of care. It is this area that I have sought to determine the role of nursing in the co-ordination of the referral to the specialised stroke rehabilitation unit. In their study, Hill and Johnson (1999) described the co-ordination role for nursing in rehabilitation as encompassing a holistic approach toward the management of individual patient care and, in particular, discharge planning. This was described as being different from the nurses' prior experiences working in acute care, "where relationships were described as being more superficial" (p. 155).

In this review, the nurses' role in the co-ordination of care appeared to incorporate different degrees of intensity. For example, Long et al. (2002) believed that the coordination role was complex and included the responsibility of "gathering, synthesizing and disseminating information, liaison, referral, negotiation and discharge planning" (p. 73). Atwal et al. (2006) described the nurses' perceptions of their role in co-ordination as mainly encompassing the referral to specialised rehabilitation care.

In the studies by Burton (2000), O'Connor (2000) and Pryor and Smith (2002), the nurses believed that they were in the best position to co-ordinate the input of health care professionals. Burton further believed that the nurse as manager of multidisciplinary care promoted the well-

being of the person and their families, as well as ensured that smooth transitions in the care of the person who had experienced stroke were achieved. Pryor and Smith also described the nurses' role in rehabilitation as encompassing an advocacy role in the work that was carried out with the family and significant others.

Not all of the authors that were included in this review identified a co-ordination role for the nurses in rehabilitation. Some research demonstrated that the nurses were poorly informed of the functional progress of the person in their care, and that they themselves did not share information in the weekly meetings with other members of the multidisciplinary team (Long et al., 2002; Pound & Ebrahim, 2000). As well, the authors of the studies in this review had not described how the nurses' either facilitated or inhibited discharge to rehabilitation, although discharge planning was identified as part of the nurses' role in rehabilitation.

I believe that nurses in the acute stroke unit at the Regina General Hospital participate in the co-ordination of care for the persons in their care. As well, it is my belief that these nurses make decisions on the appropriateness for referral to rehabilitation when co-ordinating discharge care for these persons. In the acute stroke unit, the co-ordination role for discharge planning is mainly performed by the charge nurses who are responsible for the functioning and flow of the unit. These nurses are assigned on a daily basis and are usually consistent in that one or two nurses are designated as charge nurses for each team. However, this has changed somewhat as younger and somewhat less experienced nurses are performing this duty because of a change in staff due to illness, transfer or retirement. Feedback with respect to discharge planning and appropriateness for rehabilitation is sought by the charge nurse from the licensed practical nurses (LPNs) and RNs who provide direct care to the persons admitted to the neurosciences unit and the acute stroke unit. The model of care on the unit is a modified primary care model in which

one of the RNs who is assigned to each bay is also assigned to the co-ordination of the day-to-day care of all persons in that area and communication with all members of the multidisciplinary team.

Finding a Solution: Organising Stroke Care in Canada

In 1997, the Heart and Stroke Foundation of Ontario set out to change the way stroke was viewed and treated within that province (Lewis, Trypuc, Lindsay, O'Callaghan & Dishaw, 2006). Four pilot sites were created to evaluate the effectiveness of an organised and integrated approach to stroke management. Due to the successes that were achieved in these pilot projects, government funding was sought with the goal of improving stroke services in every health region in Ontario. In 2000, the Ontario Stroke Strategy (OSS) was fully supported and funded by the government in that province (Lewis et al., 2006).

The initial work of the OSS focused on the emergency and acute care aspects of stroke management. It was only after the success of the initial four pilot projects that there was an inclusion of a comprehensive focus on rehabilitation and community re-integration within the provincial stroke strategy (HSFO, 2007; Teasell et al., 2006). In 2000, a panel of experts in rehabilitation within that province was brought together to look at the needs of rehabilitation and develop recommendations for further work in the area. The final report of this panel was completed in 2007 and recommendations were made to government and the health regions in that province for the creation of a more equitable and timely approach to stroke rehabilitation (HSFO).

In 2003, the Ministry in Ontario announced funding for a formal evaluation of the OSS to measure its success and identify further gaps in the delivery of stroke service (Lewis et al., 2006). The results of the evaluation have been used to demonstrate the success of the strategy in

the management of stroke care in Ontario. However, there is again recognition that more work is needed in the areas of rehabilitation, home care, community reintegration and uptake of stroke best practices in community or rural hospitals (Lewis et al.). The successes achieved in an organised approach to stroke care have included: increased delivery of tissue plasminogen activase (tPA), decreased hospitalisation rates for acute stroke and transient ischemic attack (TIA), increased diagnostic testing, decreased length of stay (LOS) in the acute hospital setting, decreased mortality, increased referral to rehabilitation and decreased LOS in inpatient rehabilitation (Lewis et al.).

The creation of the OSS has laid the way for initiatives at a national level such as the development of the Canadian Stroke Strategy (CSS) and the current work on other provincial stroke strategies. In 2003, the Canadian Stroke Network and the Heart and Stroke Foundation of Canada partnered together to develop the CSS with a goal of supporting an integrated approach to stroke prevention, treatment and rehabilitation in every province and territory by the year 2010 (CSS, 2007). The development of such a strategy has brought to the forefront the need to create an organised and evidence-based system of management across the spectrum of stroke care from prevention, pre-hospital access, acute care management, rehabilitation, and community re-integration at a national level.

The vision of the CSS towards the development of a comprehensive and integrated stroke strategy in every province and territory is beginning to be realised. Work is underway in each province in the assessment and organisation of various aspects of stroke services with the final goal of improving access and treatment for persons who have experienced a stroke. Pilot projects in various provinces and regions are underway. Seed funding was provided by the CSS to the provinces of Manitoba and British Columbia (BC) for the development of their initial

strategies. As well, provincial government funding has been received in Alberta, BC, Nova Scotia, and Prince Edward Island in the development and implementation of their strategies. The province of Quebec is also expected to announce provincial government funding and support in the next few months for a comprehensive stroke strategy in that province (S. Daniel-Whyte, personal communication, April 4, 2008).

In September 2005, initial work had begun on the development of a Saskatchewan Integrated Stroke Strategy (SISS). The vision of this strategy was to decrease the incidence and impact of stroke for the people of Saskatchewan through the development and implementation of an integrated and organised approach to stroke by 2010 (HSFS, 2008). As part of this strategy, several working groups were created to develop draft recommendations across the continuum of stroke care. In February 2008, the final advocacy report was presented to the various health regions and provincial ministry of health, as well as other stakeholder groups across the province. At that time, a meeting had taken place to bring together these groups with the hope of developing a working relationship toward the development of a stroke strategy within this province. Further work is continuing to take place on this initiative in the upcoming months and a meeting is scheduled between representatives of the SISS steering committee and the Minister of Health in April, 2008.

Several key components of an organised approach to stroke care currently exist within the RQHR. These key components include: a stroke/transient ischemic attack (TIA) secondary prevention clinic, 24 hour access to CT scan and availability of tPA administration, acute stroke unit care, and specialised stroke rehabilitation, as well as access to dedicated and trained stroke personnel within the various departments in the RQHR. In addition, both the inpatient and outpatient stroke rehabilitation departments at the Wascana Rehabilitation Center (WRC) are

participating in a national rehabilitation best practices project. Furthermore, education opportunities have been provided to the various personnel in the rehabilitation setting, emergency department and acute stroke unit. These opportunities have included telehealth presentations, one day workshops, in-services and poster presentations on best practices in stroke prevention, emergency management, acute care management and rehabilitation. Evaluation projects have been completed on the delivery of acute stroke management within the RQHR, as well as on the delivery and outcomes of tPA administration within the emergency departments at both tertiary sites. In addition, there has been collaboration and information sharing between various personnel within the RQHR and other stakeholder groups, such as the SISS, CSS and other health care professionals working in the Alberta and Ontario stroke strategies.

Renovation work is currently underway within the inpatient rehabilitation unit with the hope that a better functional layout of this unit would increase the amount of time that the person who has experienced a stroke is able to spend in therapy. Increased access to common areas and therapy rooms, within the unit itself, would facilitate the integration of therapy into the care that is provided. Thus, the skills which have been learned in therapy would then be incorporated into the every day activities that are necessary for the person to successfully return to the community.

This capital expenditure was the result of an anonymous donation for stroke rehabilitation care within the region. The South Saskatchewan Stroke Network of Excellence has been established as part of this funding, with the hope that increased communication and education amongst the health care providers in the five health regions in the southern portion of this province will improve the delivery of primary and secondary prevention care, as well as stroke rehabilitation. The network is only in the developmental stage; however, the ultimate goal is that

it will increase patient access to stroke services in rural locations and improve the quality of stroke service within this province.

Although a lot of work has been done within the region in stroke management over the past six years, much of the work has been done as separate entities between departments and information sharing does not always occur between the various departments and stakeholder groups. For example, there has been reluctance by the admitting and utilisation department to admit all stroke patients to the acute stroke unit at the Regina General Hospital. As well, the research initiative that the inpatient and outpatient rehabilitation departments are participating in at the Wascana Rehabilitation Center (WRC) has not been shared with the nurses in the acute stroke unit or with other departments outside of the WRC. Therefore, nurses are not aware or have not been educated on the change in referral and acceptance to rehabilitation of those persons with more severe stroke. This change in practice is a result of both the research project and the uptake of national best practices in stroke rehabilitation by one of the admitting physiatrists at the WRC.

Canadian Best Practice Recommendations in Stroke Rehabilitation

Canadian best practice recommendations for stroke care were released in December of 2006 (CSS). These recommendations have included sections on public awareness and responsiveness, patient and family education, prevention of stroke, acute stroke management, stroke rehabilitation and follow-up and community reintegration after stroke. Although many of these sections are appropriate for those persons that the nurses care for on both the acute stroke unit and the specialised stroke rehabilitation unit, I have only focused on the recommendations for stroke rehabilitation within this paper. The current recommendations for the section on stroke rehabilitation have included the subsections of: initial stroke rehabilitation assessment,

provision of inpatient stroke rehabilitation, components of inpatient stroke rehabilitation, identification and management of post-stroke depression, shoulder pain assessment and treatment, and follow-up and community reintegration (CSS, 2006).

Guidelines for initial stroke rehabilitation assessment were included as the first subsection in the stroke rehabilitation recommendations (see Appendix). As most persons admitted to hospital with stroke are likely to have significant deficits in physical function, cognition or communication, referral to rehabilitation professionals within 24-48 hours after admission is important in the prevention of poor outcomes (CSS, 2006). The panel of authors for the Canadian best practices document have identified that the specialised rehabilitation nurse is an important member of the rehabilitation team. As well, standardised assessment tools, such as the functional independence measure (FIM), help in providing a consistent and timely approach for triage to specialised stroke rehabilitation services. Best practices relating to stroke assessment across the continuum of care have been developed by the Registered Nurses Association of Ontario [RNAO] so that nurses are informed how to use available standardised stroke assessments and stroke tools (RNAO, 2005). These assessments and tools are provided in the document entitled *Stroke assessment across the continuum of care* and are aimed at assisting nurses in determining readiness for stroke rehabilitation, as well as identifying functional or neurological deficits, depression and caregiver strain (RNAO). Therefore, the CNS, as a member of the rehabilitation team, may be well situated to ensure that all patients are seen within a consistent and timely fashion using these standardised assessment tools for triage to specialised stroke services.

The second subsection of the best practice guidelines for stroke rehabilitation has included recommendations for the provision of inpatient rehabilitation (see Appendix).

The implication of this subsection is that all appropriate persons following stroke should receive timely access to specialised rehabilitation unit services. It is recognised that some acute care units do provide rehabilitation services after stroke; however, those persons who have experienced stroke should still be identified when they are ready for rehabilitation (CSS, 2006).

The next subsection of the best practice guidelines for stroke rehabilitation has identified recommendations for the components of inpatient stroke rehabilitation (see Appendix). When delays exist in the admission of persons to a specialised stroke rehabilitation unit that necessitates longer periods to be spent within an acute stroke rehabilitation unit, those persons that are deemed rehabilitation ready should receive these components of stroke rehabilitation (CSS, 2006). However, it is important to note that early transfer and access to a specialised stroke rehabilitation unit is the preferred method of care as the most benefit in functional recovery is seen for those persons that are admitted to this setting (Teasell, Salter, Moses & Foley, 2007).

The final three best practice subsections for stroke rehabilitation have included the recommendations for post-stroke depression, shoulder pain assessment and treatment, and follow-up and community-based rehabilitation (CSS, 2006). Nurses do take action to identify post-stroke depression and prevent subluxation of the hemiplegic shoulder joint, thus preventing shoulder pain. However, the exploration of the nurses' role in this regard to these two areas was beyond the scope of this project. As well, this paper has dealt with the improvement of inpatient stroke care. Therefore, the final subsection of the rehabilitation recommendations on community-based rehabilitation was also not included in this paper.

My Practice Setting within the Regina Qu'Appelle Health Region

Acute Stroke Unit

The importance of a dedicated stroke unit in improving patient outcomes has been clearly documented in a systematic review of all randomised trials which compared organised inpatient stroke unit care with conventional care (Stroke Unit Trialists' Collaboration [SUTC], 1997). Although the exact processes involved in care were not identified in that review, organised inpatient stroke unit care was characterised by an interdisciplinary team approach to care, including the integration and specialisation of medical and nursing staff in stroke care and rehabilitation, involvement of caregivers in the rehabilitation process as well as education and training programmes for staff, patients and caregivers alike (SUTC). The benefits of this organised approach to stroke care include: reduced mortality, improved functional outcomes, decreased need for institutional care and an increased likelihood of discharge to home (Noorani, Brady, McGahan, Teasell, Skidmore & Doherty, 2003; SUTC).

As part of a region-wide restructuring of services, construction of an eight-bed acute stroke unit was completed on the neurosciences unit (5A) at the Regina General Hospital (RGH) in 1998. The unit is geographically separate; however, it is situated within the neurosciences unit at the RGH. The RGH is one of two acute tertiary care centers within the RQHR. Typically, staffing on the acute stroke unit consists of two to three nursing staff members during the day, and one to two nursing staff during the late evening and night shifts. However, at times an extra person is scheduled for an additional eight hours due to increased work load. The nursing complement includes both RNs and LPNs. The majority of the staff work 12 hour shifts. There is also access to a CNS, on a consultant basis, for family support or education, education for nursing staff, as well as a liaison for communication between nursing and therapy staff. All

other members of the interdisciplinary team which includes physical therapy, occupational therapy, speech and language pathology, dietary, and social work are housed on 5A. For the most part, therapy occurs at the bedside and within designated therapy rooms on the unit. All persons who are admitted to the acute stroke unit are admitted under the services of a neurologist.

Not all persons who have experienced a stroke and require hospital care are admitted to the acute stroke unit. Decreased buy-in and geographic protection for the acute stroke unit by the admission and utilisation department, as well as a constant over demand for medical beds within the region, has created an inconsistent flow of stroke patients to the acute stroke unit. Thus, a large percentage of persons who have experienced stroke and require acute stroke care, as well as those requiring a specialised interdisciplinary approach to stroke rehabilitation are admitted to general medical wards throughout the two acute care facilities within the region.

In a report done by Power and Smith (2003), a retrospective audit of the number of all strokes admitted to the neuroscience unit was examined for the previous three years which included 2000, 2001 and 2002 admission data. When admission numbers were pooled to obtain an average number of patients admitted each year, 66 persons (26 percent) were admitted to the neurosciences unit out of 258 total persons admitted with stroke at both tertiary care hospitals. A limitation of the report was that those numbers did not reflect the number of patients admitted solely to the acute stroke unit. As all strokes are not consistently placed within the acute stroke unit by the charge nurses on the neurosciences unit, one can assume that the numbers of persons with stroke who were admitted to the acute stroke unit were smaller than the 26 percent of total persons with stroke who were admitted to the tertiary sites.

Another study which evaluated the quality of acute stroke care within the RQHR also demonstrated underutilization of the acute stroke unit (Power & Bishop, 2005). In this study, 46 percent of the total number of ischemic stroke patients were admitted to the neuroscience unit between June to September, 2004. Further analyses found that only 20 percent of the total numbers of persons admitted with ischemic stroke were admitted to the acute stroke unit beds. Thus, while previous studies have shown benefit from a coordinated approach to stroke care including admission and management within an acute stroke unit, all persons experiencing a stroke are not consistently admitted to the acute stroke unit within the region.

Specialised Stroke Rehabilitation Unit

As acute stroke units have been shown to decrease post-stroke mortality, dependency and the need for institutionalised care, so too have specialised stroke rehabilitation units improved stroke outcomes (SUTC, 1997; Teasell, Foley, Salter, Zettler, Kruger & Jutai, 2007). The characteristics associated with a comprehensive and specialised stroke rehabilitation unit described by Teasell, Foley, Salter, Zettler et al. (2007) include:

- Commitment to continuity of care from the acute phase of the stroke through long-term follow-up.
- Use of an interdisciplinary team of professionals experienced in and dedicated to the care of the patient with stroke.
- Careful attention to the prevention, recognition, and treatment of comorbid illnesses and intercurrent medical complications.
- Early initiation of goal-directed treatment that takes maximal advantage of the patient's abilities and minimises disabilities.

- Systematic assessment of the patient's progress during rehabilitation, with adjustment of treatment to maximise benefits.
- Emphasis on patient and family/caregivers education.
- Attention to psychological and social issues affecting both the patient and family/caregiver.
- Early and comprehensive discharge planning aimed at a smooth transition to the community, and at continuity of care to promote social reintegration and resumption of roles in the home, family, recreational, and vocational domains. (p. 5)

In the RQHR, the stroke rehabilitation unit is situated within the Wascana Rehabilitation Center (WRC), a stand alone rehabilitation and long-term care facility. The rehabilitation unit population consists of those persons who have experienced a variety of neurological and orthopaedic conditions. However, 50 percent of inpatient admissions on the rehabilitation unit are for those persons with a diagnosis of stroke. Technically, the unit would be referred to as a mixed rehabilitation unit in agreement with the best practice recommendations presented earlier. However, the high numbers of both those persons who have experienced stroke, as well as those admitted with other neurological conditions, gives credibility to the argument that a level of expertise exists among the interdisciplinary team with respect to the management of persons with stroke. Thus, in this paper I refer to this unit as a specialised stroke rehabilitation unit.

Access to the unit is through a consultation and referral process to one of three physiatrists who admit to the unit. The majority of referrals come from either of the two acute care hospitals within the RQHR. However, referrals can be made from any primary care physician in the southern portion of the province. At this time, access to the specialised stroke

rehabilitation unit is subjective and is dependent on: whether or not a consultation to the physiatrist on-call is made from the acute care center, specialist or primary care physician; the physiatrists' assessment based on individualised and subjective triage criteria; and the availability of inpatient rehabilitation beds.

Referrals to the specialised rehabilitation unit from acute care are not automatic for every patient and are subjective in that nursing or other members of the team often seek out the consultation from the attending physician (generally the neurologist if admitted to the acute stroke unit) for an order to consult rehabilitation services. When referrals are made, they generally occur within the first week after a person experiences a stroke. Although some referrals are made for persons within three days following their stroke, other persons may wait as long as three weeks.

Persons from rural areas with more severe stroke who are deemed not ready for rehabilitation, either by the neurologist or the consultant physiatrist, are discharged to a hospital within their own health region. As well, those persons who live within the RQHR, and who are deemed not ready for rehabilitation may be transferred to a transitional care bed, long-term care facility or care home. In transitional care beds, the person is provided with more time for recovery until a decision is made to either discharge home or to a long-term care facility, or transfer to the specialised stroke rehabilitation unit. However, the amount of therapy that is received by the person who has experienced the stroke is limited by the services which exist within the community or facility to which she or he is transferred.

At this time, no recall or follow-up protocols exist for the patient to be reassessed for access to rehabilitation. That is, follow-up referrals are made on the discretion of the nurses or therapists from the location in which the person is receiving inpatient care, the primary care

physician, or upon the request of the family member or caregiver of the person who has experienced the stroke. Again access to rehabilitation is subjective and dependent on the coordination of those who are providing care for the person and possibly on the ability of the family to advocate for the needs of the person who has had a stroke.

The Use of Best Practices in the Workplace

Best practices in the areas of acute stroke management and secondary prevention have been introduced to the nurses and other members of the interdisciplinary team on the acute stroke unit. Education in the form of unit orientation, one day education sessions, in-services, teleconference sessions, poster presentations as well as one-to-one education in these areas has been provided to the nurses and members of the interdisciplinary team dating as far back as 2002. This experience has been viewed positively by the team on the acute stroke unit and has encouraged team members to use best practices in the workplace.

It has been my experience in the introduction of the best practices listed above that the nurses who have recently graduated from a nursing program, or that are new to the unit, as well as LPNs, are most satisfied with the introduction of best practices into the workplace. Although I was unable to find literature to support this claim, I believe that best practices help these persons identify the care that is needed by the person in their care. For example, since best practices in acute stroke care have been introduced:

- no intravenous glucose is used unless there is an abnormally low glucose level
- body temperature is taken, and if elevated, is treated
- oxygen saturation levels are checked more often

- there is a questioning of antiplatelet needs, use of blood pressure medications and smoking cessation aids more often than prior to introduction of these best practices.

Although some best practices, such as tighter control of elevated glucose levels in acute stroke have been slow to implement into practice by both nursing and other healthcare providers. I believe that the successes that have been achieved on the acute stroke unit are commendable. As Pringle (2006) states "simply knowing what works best does not necessarily lead to practising on the basis of that knowledge" (p. 273).

With respect to best practices in stroke rehabilitation, it has been my experience that nurses on the acute stroke unit provide care more in-line with best practices and rehabilitation care than nurses in other acute care areas where persons with stroke are also admitted within the RQHR. In particular, those persons who have experienced stroke are more likely to be sitting up at the bedside, have had a swallowing screening done by the nursing staff and have had tube feedings started earlier when they are deemed necessary. As well, nurses in the acute stroke unit use their specialist skills in bowel and bladder care, as well as the prevention of pressure sores and deep vein thrombosis more often than in other acute care areas. This level of care is recognised by one of the physiatrists who has stated that he believes patients are more physically prepared for rehabilitation and are able to be transferred to the specialised stroke rehabilitation unit sooner than those patients admitted on other acute care units within the tertiary care centers at the RQHR.

Even with the successes that have been achieved in the implementation of best practices, there remain barriers to the implementation of stroke rehabilitation best practices within the acute stroke unit. Nurses who I have spoken to on the acute stroke

unit have stated that they feel that they lack the time and resources to integrate therapy into the basic care and activities of daily living provided to persons with stroke. Therapy carry-on, as discussed earlier in this paper, is necessary as best practices dictate that persons who have experienced a stroke should have as much therapy integrated into their daily routine as they are able to tolerate. Thus, even within the acute stroke unit where nurses are more familiar with the philosophy of rehabilitation than on other acute care units, little therapy carry-on takes place.

The best practice of equal and timely access to specialised stroke rehabilitation is also not consistently implemented within the acute stroke unit. That is, at times the decision has been made not to refer certain persons to rehabilitation within the first 24-48 hours. These persons are seen by therapists on the acute stroke unit and rehabilitation services are initiated and implemented; however, no further referral to a physiatrist is made and thus the decision is made for the person to be transferred to a long-term care facility or rural hospital. I believe that these decisions are made based on knowledge that is formed from outdated beliefs of the hopelessness of significant recovery for persons experiencing severe stroke, and that not all nurses or other health care professionals know of the more recent research that has demonstrated benefit in functional recovery for a select subset of those persons with more severe stroke when provided access to specialised stroke rehabilitation (HSFO, 2007; Teasell & Foley, 2007; Teasell, Salter, et al., 2007). As well, in a time of constant bed shortages and long waits for rehabilitation, we have been basing our decision-making in neurosciences and stroke care on a philosophy of ruling-in those persons we see as appropriate for rehabilitation, such as young, highly-motivated individuals with good family supports (Hughes & Griffiths,

1997) and by omitting certain groups that we deem as not appropriate for access to rehabilitation, such as older persons, those identified as having complex needs and persons with communication problems, such as those with aphasia or those that speak English as a second language (Mold et al., 2006).

Barriers to the Enactment of Best Practices by Nurses

As stated earlier in this paper, it is my assumption that barriers exist within the acute care setting that inhibit the enactment of rehabilitation best practices. In a recent unpublished dissertation, staff perceptions of time, and space within the acute stroke unit itself, as well as limited interprofessional communication between therapies and nursing were identified as barriers to the implementation of rehabilitation within the acute stroke unit that was studied (C. Seneviratne, personal communication, January 22, 2008). These barriers existed despite a willingness of nurses to incorporate stroke rehabilitation principles into their acute practice. The nurses' inability to incorporate these principles into their practice was due to the external pressures that they perceived from both in and outside the acute stroke unit.

Heavy demands on nurses' time as well as feelings of being short staffed have been cited as barriers to the implementation of rehabilitation work in other nursing literature. For example, Atwal, Tattersall, Murphy, Davenport, Craik, Caldwell et al. (2007) described how the nurses in their study lacked the necessary time to spend with those persons in their care to address their needs on the unit and to work together to set rehabilitation goals that were necessary for successful transition back into the community. Thus, in this study, limitations in time to perform nurses' work not only impacted the physical care that the person needing rehabilitation received in the acute rehabilitation unit, but also impacted on the person's ability to verbalise their needs and mutually participate in the decision-making process needed for a smooth transition to a place

beyond the acute care setting. In a second study, Pound and Ebrahim (1997) identified nurses' frustrations with their heavy work load and feelings of being short staffed as impacting the quality of rehabilitation work that they engaged in on the stroke unit in which they worked.

Perceived barriers to achieving evidence-based stroke rehabilitation among allied health care providers working in rehabilitation were identified in a study conducted by Pollock, Legg, Langhorn and Sellers (2000). The authors in this study demonstrated that most nurses believed that they had a lack of time to keep up-to-date with the stroke literature and research. Yet the majority of the nurses believed that they were confident in the ability to read and understand the stroke research literature. As well, most of the nurses believed that the majority of stroke-related literature was relevant to their practice. However, they did not perceive that it was easy to implement the research findings found within the literature into the practice setting.

In the acute stroke unit at the RQHR, the issues of time and feelings of being overworked may be barriers to the implementation of rehabilitation work. For the most part, nurses in the unit engage in general and specialist nursing work, yet there is a belief that implementing rehabilitation care, such as the encouragement of self-care in ADLs, takes up too much time. As well, nurses in other settings believed that they had little time to keep updated on research findings. Current research in which persons benefit most from rehabilitation and the current practice of accepting persons with more severe stroke deficits into the specialised stroke rehabilitation unit has not been presented to the nurses on the unit through education sessions and thus may not be known to them. Therefore, nurses are particularly hesitant to engage in rehabilitation work with those persons who have moderate-severe or severe stroke as they feel that it would not change the person's course of recovery.

Overcoming Barriers to the Implementation of Best Practices

A variety of articles have shown that a comprehensive and multifaceted training program may enhance the uptake of best practices and create an interprofessional approach to stroke rehabilitation. One study demonstrated that such an approach was effective in positively influencing nurses' attitudes about patient recovery and nurses felt more confident in moving and handling practices of persons in their care without identifying limitations of time as a barrier to implementing these practices (Forster, Dowswell, Young, Bagley, Sheard & Wright, 1999). As well, after the training session was implemented, there was a greater collaboration and mutual respect between the interprofessional team.

Booth, Hillier, Waters and Davidson (2005) described similar success in their study which also enhanced the rehabilitative approach to care. In this study, nurses significantly decreased the proportion of time spent *doing for* the patient during morning care. Although the nurses previously identified a lack of time as a barrier to have persons *do for themselves*. This study demonstrated that this renewed approach in which persons do for themselves did not take more time than the traditional doing for approach that was used before the education program was implemented.

Although no programs were identified as superior, a Canadian study found that participation in a multifaceted interdisciplinary education program conducted online demonstrated an increase in stroke rehabilitation knowledge immediately following the program and again after a six month follow-up (McEwen, Szurek, Poltajko & Rappolt, 2005). This may be an approach that can be implemented within the region for all professionals in the development of a more organised approach to stroke management. However, the costs involved in such a project may be a barrier to the implementation of such a program. Therefore, the

program could be developed at a provincial level as part of the implementation of the SISS or Southern Saskatchewan Network of Excellence.

The Role of the Clinical Nurse Specialist in the Implementation of Best Practices

The Canadian Nurses Association[CNA] (2003) defines the role of the Clinical Nurse Specialist (CNS) as having advanced knowledge and skills in the clinical setting, as well as sound judgement and leadership abilities to effectively "provide solutions for complex health-care issues at all levels – with patients, families, other disciplines, administrators and policy makers" (p. 1). As well, the CNA (2006) believes that the CNS can "enhance the provision of timely, accessible, cost-effective and quality health care for all Canadians" (p. 6). Based on this description of the CNS role, I believe that the CNS is well positioned to disseminate and facilitate the implementation of best practices for rehabilitation in the acute stroke unit at the RQHR. Furthermore, nurses are responsible for providing safe, competent and ethical nursing care as governed by the CNA Code of Ethics for Registered Nurses (2002a) which further compels the CNS to take action to support the development of a morally grounded practice.

Recommendations

In this section, I have presented practice recommendations that are developed from the findings of this paper. The barriers that I have identified in the delivery of clinical best practices, as well as the nurses' inability to truly enact a rehabilitation role within the acute stroke unit, are compelling in the argument that further work must be done to ensure that rehabilitation begins in a consistent and timely manner for the person who has experienced stroke. These recommendations take into account the full scope of the CNS role, and offer nursing leadership and a sense of collaboration with all members of the interdisciplinary team in creating change that will hopefully improve the delivery of stroke rehabilitation within this setting.

My recommendations are as follows:

1. The CNS will visit all persons and their families admitted to hospital with stroke, within the first 24 – 48 hours. The CNS would be able to support the person with stroke and their family members in the area of education, co-ordination and counseling as needed. As well, the CNS, as part of the interdisciplinary stroke rehabilitation team, could ensure that all necessary referrals to all members of the rehabilitation team have been completed and make recommendations for further treatment or care as necessary.
2. The CNS will attend weekly interdisciplinary meetings that are held for all persons admitted to the neurosciences and acute stroke unit. These meetings would serve to identify those persons who need further co-ordination of rehabilitation services, as well as facilitate communication between the interdisciplinary team, nursing and physicians. In these meetings, the CNS could provide information to the neurosciences/stroke rehabilitation team on the status of those persons with stroke that are admitted elsewhere in the two tertiary hospitals in the case that their expertise may serve to enhance the care that those individuals would receive.
3. The CNS will share the findings of this project, including the review of the literature on the role of the nurse in stroke rehabilitation, with the nurses on the unit, as well as other members of the interdisciplinary team in order to increase their understanding of the nursing role in stroke rehabilitation. It would be my hope that this process would begin a dialogue on how to create

an environment for rehabilitation within the acute stroke unit beyond that which is currently in place.

4. The CNS will share research findings and best practices in stroke rehabilitation with the nurses and other members of the interdisciplinary team on the acute stroke unit. Collaboration with other members of the team in the facilitation of the implementation of these practices will help to build capacity for rehabilitation with nurses and other interdisciplinary team members working on the neurosciences and acute stroke unit.

Creating a Culture for Rehabilitation in the Acute Stroke Unit

The CNA (2002b) has identified five core competencies in the role of the CNS. These competencies include: clinical competencies, research, leadership, collaboration and change agent. I believe that the recommendations in this paper both encompass and blend these competencies and draw on the advanced clinical skills, knowledge, judgement and personal attributes that are needed by the CNS in order to effectively create change. Change will be necessary in order to create a culture for rehabilitation within the acute stroke unit. I believe that change can only be created through collaboration and a sense of leadership within the busy health care environment which exists at this time.

In the best practices for stroke rehabilitation recommendations it states that all persons with stroke should be seen within 24–48 hours following their stroke. This action is necessary to ensure that all the appropriate components of stroke care are implemented into the persons care and that all members of the interdisciplinary team provide the necessary stroke expertise. At present, inconsistencies exist in the referral of all patients to rehabilitation as described within this paper. However, the opportunity exists for a referral to be made to the CNS to see

all persons admitted with stroke in either of the two tertiary hospitals. This consultation could facilitate access to rehabilitation services, and promote best practices within other acute care areas in that the CNS could be a mentor to the nurses in those areas. As well, the CNS would be able to provide emotional support and education to persons with stroke and their families as needed.

Although components of this recommendation has been trialed in the past, at that time inconsistencies in the referral process had occurred. Since then, there has been a specific order code that has been added into the computer ordering system at the RGH for nurse initiated referrals to the CNS. This process has been established on the neurosciences and acute stroke unit for consultation on an ad hoc basis when nursing or other members of the interdisciplinary team need CNS support. I believe that it could be implemented for all persons with stroke within the neuroscience and acute stroke unit with minor effort. However, not all nursing units including the emergency department are aware of this order code. As well, no such ordering system exists at the Pasqua Hospital at this time as the region has wanted to introduce a new system-wide ordering system which is compatible with a provincial electronic health record; however, this process has been delayed at the provincial level. Thus, collaboration with other nursing units in identifying methods which would facilitate a referral process, as well as the promotion of the CNS role for stroke would need to be completed at both tertiary sites in order to implement this recommendation.

A weekly interdisciplinary meeting is held for all persons admitted to the neurosciences and acute stroke units to increase interdisciplinary communication, develop rehabilitation goals, and facilitate discharge planning. Implementation of the second recommendation would not be difficult as the meeting is held at a time when the CNS is free from other responsibilities to

participate, and I believe that the team would be welcoming of the CNS's participation in these meetings. I also believe that this process would help to identify those persons outside of the neurosciences or acute stroke unit who may require the expertise of the interdisciplinary acute stroke rehabilitation team.

Recommendations three and four would require the dissemination of the findings of this report, best practices in stroke rehabilitation and current research to both the nurses and other members of the interdisciplinary team in the acute stroke unit. Important components within these recommendations include the opportunity for dialogue and collaboration with both nursing and other members of the interdisciplinary team in building capacity for rehabilitation within the acute stroke unit. Literature that has demonstrated support for the use of education programmes to overcome barriers associated with nurses' perceptions of limited time to engage in stroke rehabilitation was discussed earlier in this paper. Furthermore, an opportunity for a participatory action research study within the acute stroke unit may lend itself to the full implementation and evaluation of these recommendations.

Conclusion

It is known that a well organised and integrated approach to stroke rehabilitation can alleviate the heavy burden that is placed on persons who have experienced stroke, their families and society as a whole. Yet, inequalities and barriers exist in the access and delivery of stroke care and rehabilitation as was described in this paper. These inequalities exist in the access to stroke unit care, rehabilitation therapy and inpatient specialised stroke rehabilitation unit care. As well, it was also found that health care providers make decisions on who is deserving of rehabilitation based on the motivation that is displayed by the person with stroke and the family support that is available to them. Furthermore, barriers of time, resources, and limitations of

space that impacted the nurses' ability to perform rehabilitation work were also described within this paper. Therefore, I believe that work must be done to improve access to care and develop an equal approach to the delivery of an organised system.

The overall purpose of this project was to develop recommendations from my perspective as the CNS in the acute stroke unit in order to create a culture for rehabilitation within this setting. I believe that the implementation of these recommendations will help to build capacity and collaboration amongst all stakeholders within the RQHR to effect change. It is through change, based on our moral obligation to ensure that all people have access to the best care available no matter where they live in Canada, that equal and timely access to stroke rehabilitation will be realised (CSS, 2008).

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Appendix

The following best practice recommendations for stroke rehabilitation have been taken from the *Canadian Best Practice Recommendations for Stroke Care* document (CSS, 2006).

5.1 Initial Stroke Rehabilitation Assessment

The recommendations in this subsection include:

5.1a All people admitted to hospital with acute stroke have an initial assessment by rehabilitation professionals as soon as possible after admission…; preferably within the first 24-48 hours. …

5.1c Clinicians should use standardized, valid assessments to evaluate the patient's stroke-related impairments and functional status, and encourage patient's participation in community and social activities. (p. 64)

5.2 Provision of Inpatient Stroke Rehabilitation

The recommendations in this subsection include:

- All patients with stroke who are admitted to hospital and who require rehabilitation should be treated in a comprehensive or rehabilitation stroke unit by an interdisciplinary team.
- Post-acute stroke care should be delivered in a setting in which rehabilitation care is formally coordinated and organized.
- All patients should be referred to a specialist rehabilitation team on a geographically defined unit as soon as possible after admission.
- Post-acute stroke care should be delivered by a variety of treatment disciplines, experienced in providing post stroke care, to ensure consistency and reduce the risk of complications.

- The interdisciplinary team may consist of a physician, nurse, physical therapist, occupational therapist, speech language pathologist, psychologist, recreation therapist, patient and family/caregivers.
- The interdisciplinary team should assess patients within 24-48 hours of admission, and develop a comprehensive rehabilitation plan to reflect the severity of the stroke and the needs and goals of the stroke survivor.
- Stroke unit teams should conduct at least one formal interdisciplinary meeting per week to discuss the progress and problems, rehabilitation goals, and discharge arrangements for patients on the unit.
- Standardized assessment tools should be used to assess the functional status of stroke patients.
- Where admission to a stroke rehabilitation unit is not possible, longer-term inpatient rehabilitation should be provided on a mixed rehabilitation unit (i.e. where interdisciplinary care is provided to patients disabled by a range of disorders including stroke). (p. 67)

5.3 Components of Inpatient Stroke Rehabilitation

These components include:

- All patients with stroke should begin rehabilitation therapy as early as possible once medical stability is reached.
- Patients should undergo as much therapy appropriate to their needs as they are willing and able to tolerate.
- The team should promote the practice of skills gained in therapy into the patient's daily routine in a consistent manner.

- Therapy should include repetitive and intense use of novel tasks that challenge the patient to acquire necessary motor skills to use the involved limb during functional tasks and activities.
- Stroke unit teams should conduct at least one formal interdisciplinary meeting per week at which patient problems are identified, rehabilitation goals set, progress monitored, and support after discharge planned. (p. 71)