



The Clinical Nurse Specialist Role in Canada

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Abstract

The clinical nurse specialist (CNS) provides an important clinical leadership role for the nursing profession and broader healthcare system; yet the prominence and deployment of this role have fluctuated in Canada over the past 40 years. This paper draws on the results of a decision support synthesis examining advanced practice nursing roles in Canada. The synthesis included a scoping review of the Canadian and international literature and in-depth interviews with key informants including CNSs, nurse practitioners, other health providers, educators, healthcare administrators, nursing regulators and government policy makers. Key challenges to the full integration of CNSs in the Canadian healthcare system include the paucity of Canadian research to inform CNS role implementation, absence of a common vision for the CNS role in Canada, lack of a CNS credentialing mechanism and limited access to CNS-specific graduate education. Recommendations for maximizing the potential and long-term sustainability of the CNS role to achieve important patient, provider and health system outcomes in Canada are provided.

Introduction

Since the late 1960s, the clinical nurse specialist (CNS) has played a prominent role in the Canadian healthcare system (Canadian Nurses Association [CNA] 2006a; Davies and Eng 1995; MacDonald et al. 2005; Montemuro 1987). CNSs were introduced to support and improve the quality of nursing care at the bedside in response to increasing specialization, technology, patient acuity and the complexity of healthcare. Clinical expertise in a specialized area of practice is characteristic of the CNS role (CNA 2009; National Association of Clinical Nurse Specialists [NACNS] 2004). As an advanced practice nursing role, the CNS is envisioned as a multidimensional clinical role based on the principles of primary healthcare and with a focus on health, health promotion and patient-centred care (CNA 2008, 2009).

In addition to specialized clinical expertise, the CNS has a graduate degree in nursing and provides an advanced level of nursing practice through the integration of in-depth knowledge and skills as a clinician, educator, researcher, consultant and leader (CNA 2009; Clinical Nurse Specialist Interest Group [CNSIG] 2009). CNSs have responsibilities for patient care and for promoting excellence in nursing practice by educating and mentoring other nurses, generating new nurs-

ing knowledge, promoting the uptake of research into practice, developing and implementing new practices and policies, providing solutions for complex health-care issues and leading quality assurance and change initiatives (CNA 2009).

Through innovative nursing interventions, the CNS role has the potential to make a significant contribution to the health of Canadians by improving access to integrated and coordinated healthcare services (CNA 2009). However, the profile and deployment of CNS roles across the Canadian healthcare landscape have fluctuated over the past 40 years and the full benefit of the role has yet to be realized (CNA 2006a, 2009).

The purpose of this paper is to examine the CNS role in terms of its current status in Canada; education; regulation and scope of practice; supply, deployment and practice settings; and role outcomes. Key issues and challenges influencing role integration and long-term role viability are identified and recommendations to address these challenges are summarized.

Methods

This paper is based on a decision support synthesis (DSS) that was conducted to develop a better understanding of advanced practice nursing roles, their current use, and the individual, organizational and health system factors that influence their effective development and integration in the Canadian healthcare system (DiCenso et al. 2010a). A DSS combines research and knowledge translation strategies to summarize and integrate information and provide recommendations on a specific healthcare issue (Canadian Health Services Research Foundation [CHSRF] 2009). It generally includes a synthesis of published and grey literature and, when appropriate, may include data collected from key informants. DSSs use deliberative strategies to engage decision makers in formulating questions, framing the project scope and reviewing the draft report to generate recommendations (CHSRF 2009).

An earlier paper in this issue provides a detailed description of the methods for this synthesis (DiCenso et al. 2010b). In brief, it included a comprehensive examination of published and grey literature on Canadian advanced practice nursing roles from the time of inception and international literature reviews from 2003 to 2008. A total of 2,397 papers were identified, of which 468 were included in the scoping review. Interviews ($n = 62$) and focus groups ($n = 4$ with a total of 19 participants) were also conducted with national and international key informants including CNSs, nurse practitioners (NPs), physicians, other health providers, educators, healthcare administrators, nursing regulators and policy makers.

A structure–process–outcome framework relevant to advanced practice nursing (APN) role implementation was used to develop a data extraction tool and data-

base for the literature review and to create a semi-structured guide for the interviews and focus groups (Bryant-Lukosius and DiCenso 2004; Bryant-Lukosius et al. 2004). Data related to structures included policies, education, and the human, physical, practical and information resources known to be important for APN role implementation. Information about processes related to where, what and how APN roles were enacted. Outcome data referred to the impact of APN roles on patients, providers and the health system. Possible solutions to improve the integration of APN roles were also identified.

Four research team members were assigned CNS publications to review and extract information that was entered into a database. Using printouts of the extracted data, each reviewer provided a summary report on their publications. At a team meeting, each report was examined and discussed to compare and contrast themes and to formulate conclusions about the data as a whole.

The semi-structured interview and focus group guide asked key informants about their knowledge and experience with different types of APN roles, including the CNS. All key informants were asked the same questions, some of which related to the CNS role. Participants were asked to describe how CNS roles were implemented in their organization and/or jurisdiction, to provide examples of promising models of CNS practice and CNS role outcomes, and to identify barriers, facilitators and solutions to enhancing CNS role integration. A team of four reviewers analyzed and summarized the interview data. Content analysis of the transcribed audiotaped interviews was conducted using an agreed-upon coding scheme and documentation form to identify themes related to APN role structures, processes and outcomes. A spreadsheet was used to summarize codes, themes and data from each transcript so that themes about CNS and other APN roles could be compared across the transcripts. All interview and focus group data specific to CNS roles were included in the analysis for this paper. To synthesize the literature and interview/focus group data, the similarities and differences in themes, common patterns and trends, and implications for the CNS role from both data sets were compared and summarized in relation to current status in Canada; education; regulation and scope of practice; supply, deployment and practice settings; role outcomes; and challenges to role integration.

When the synthesis was completed, CHSRF convened a multidisciplinary roundtable to develop recommendations for policy, practice and research based on the synthesis findings. For this paper, we have focused attention on interview and focus group data, descriptive reports, primary studies and reviews about the CNS role in Canada, as well as related roundtable recommendations. We have drawn on international literature to provide global context and for further discussion about key issues when relevant.

Results

The CNS-related papers contributed 9.7% (34/349) of the Canadian papers included in the synthesis. The 34 papers consisted of 19 essays and 15 reports of primary studies (DiCenso et al. 2010b). Table 1 summarizes these 15 articles (4 are based on the same study). Most studies were conducted at single sites or institutions in a western province between 2003 and 2006 and employed qualitative and descriptive research methods. None investigated CNS practice across the country. One third of the studies examined a mix of CNS roles in various specialties, and the remaining studies focused on CNS roles in specific specialties such as pediatrics, cardiology, neonatology, medicine and geriatrics. We begin our presentation of the findings with a summary of key contextual issues related to the CNS role, followed by the issues and challenges that most frequently and consistently emerged from our data analysis: the paucity of Canadian research on the CNS role, absence of a common vision for the CNS role in Canada, lack of a CNS credentialing mechanism and limited access to CNS-specific graduate education.

Table 1.

Canadian CNS role studies between 1950 and 2008

Author	Year	Study design	Area of specialization or practice	Location
Alcock	1996	Descriptive	Mixed	Ontario
Canam	2005	Qualitative	Pediatrics	British Columbia
Carr and Hunt	2004	Program evaluation	Geriatrics	British Columbia
Charchar et al.	2005	Qualitative	Cardiac	Quebec
Davies and Eng	1995	Descriptive	Mixed	British Columbia
Forster et al.	2005	Randomized controlled trial	Acute medicine	Ontario
Hogan and Logan	2004	Descriptive/program evaluation	Neonatal	Ontario
Lasby et al.	2004	Program evaluation	Neonatal	Alberta
Pauly et al. ^a	2004	Descriptive qualitative	Mixed	British Columbia
Pepler et al.	2006	Qualitative/program evaluation	Oncology and neurology	Quebec
Profetto-McGrath et al.	2007	Descriptive	Mixed	Western health region

Table 1 Continued.

Schreiber et al. ^a	2003	Descriptive	Mixed	British Columbia
Schreiber et al. ^a	2005 ^a	Descriptive qualitative	Mixed	British Columbia
Schreiber et al. ^a	2005	Descriptive qualitative	Mixed	British Columbia
Smith-Higuchi et al.	2006	Qualitative	Geriatrics	Western health region

^a Four publications about the same study.
CNS= Clinical nurse specialist

Current Status of the CNS Role in Canada

The CNA (2009) defines a CNS as “a registered nurse who holds a master’s or doctoral degree in nursing and has expertise in a clinical nursing specialty.” The most recent position statement on the CNS reaffirms the multidimensional nature of this role, with integrated responsibilities for clinical practice, education, research, consultation and leadership (CNA 2009). The multi-faceted aspects of this role were also reported in the literature and by key informants familiar with the CNS role. Healthcare administrators and physicians perceived the CNS role as more varied than the NP role, with more involvement in supporting other health providers and leading education, evidence-based practice, quality assurance and program development activities. Healthcare administrators identified that the strength of CNSs was their ability to blend clinical expertise with leadership and research skills to support administrative decision making and to achieve academic agendas in teaching hospitals. One healthcare administrator explained:

They [CNSs] have broad responsibilities in quality development, nursing leadership, program development, administration, practice, research and education ... they are very valued contributors as a nursing leadership role and as a role model and mentor for clinical practice. And [they] participate actively in our academic agenda as well.

A multiple-case study documented a number of ways CNSs promoted research-based nursing practice. This involved questioning current practice and developing researchable clinical questions, conducting research and engaging staff in the research process, meeting learning needs through mentorship and education, building on staff expertise, managing resistance to change and through publications and presentations (Pepler et al. 2006). CNSs also use varied sources of evidence to influence decision-making at the bedside and at administrative levels (Profetto-McGrath et al. 2007). CNSs report that their research, education and

administrative knowledge and skills are necessary to effect change and improve patient care at the individual, unit and organizational levels (Pauly et al. 2004; Schreiber et al. 2005a). In one qualitative study, pediatric CNSs described how they intervened at several levels, including the patient, patient populations, nurses and other health providers, and the health system (Canam 2005). Interview and focus group participants also concurred that CNS interventions were systems oriented, population focused and staff targeted.

CNSs work in various specialties that may be defined by type of illness, such as cancer or cardiovascular disease (Griffiths 2006; Ingram and Crooks 1991); health needs, such as pain management (Boulard and Le May 2008); type of care, such as palliative or critical care (Peters-Watral et al. 2008; Urquhart et al. 2004); or by patients' age, for example, pediatrics, neonatology or gerontology (Canam 2005; Lasby et al. 2004; O'Rourke et al. 2004; Smith-Higuchi et al. 2006).

Interview participants agreed that CNS roles were the least understood of all advanced practice nursing roles (Donald et al. 2010). The multiple dimensions of the role and the varied ways CNSs implemented their roles contributed to poor role clarity and may explain why CNSs felt they were viewed as a "jack of all trades." Another factor is the lack of clarity about the nature of the clinical component of the role. A nurse regulator interviewed for the synthesis highlighted this issue:

In my view the ideal CNS role is of a clinical expert ... is to facilitate and foster the development of excellence in colleagues.... Others see the role as solely developing a niche expertise in a clinical area for the purpose of direct care delivery.

Most of our study participants felt that CNS roles had limited involvement in the direct clinical care of patients. Notable exceptions were in oncology and palliative care, where CNSs had extensive clinical roles in pain and symptom management and care coordination. In contrast, Canadian studies described a number of ways CNSs were involved in direct patient care, including the assessment and management of acute and chronic illnesses, health promotion, discharge planning, care coordination and education (Bryant-Lukosius et al. 2007; Canam 2005; Charchar et al. 2005; Lasby et al. 2004; Schreiber et al. 2003). Interview participants observed that CNSs without a direct clinical role were more vulnerable to funding cutbacks because the loss of the role may not have immediate impact on practice settings. Lack of clarity about the clinical component also makes it difficult to distinguish CNSs from other types of nursing roles. Interview participants identified difficulties in knowing when to recruit a CNS versus an NP in acute care settings. Several studies reported role confusion (Canam 2005; Smith-Higuchi et al. 2006) and role overlap with master's-prepared nurse educators (Pepler et al. 2006; Wall 2006).

Education

The recommended education for advanced practice nurses in Canada and internationally is a master's degree from a graduate nursing program (CNA 2008; International Council of Nurses 2008). While data are collected regularly about NP education programs in Canada (Canadian Association of Schools of Nursing [CASN] and the CNA 2008), information about graduate nursing education programs to prepare CNSs in Canada is not routinely gathered. To identify existing CNS-related education courses and/or programs, we reviewed the websites of graduate nursing programs in Canada and collaborated with the CASN to survey these 31 programs. Of the 31 programs, 27 responded to the survey. Based on combined website and survey data, one of 31 programs offered a CNS-specific program, but enrolment to this program was closed due to lack of funding, a second program offered an advanced practice leadership option to prepare CNSs and clinical leaders and a third program was exploring the possibility of developing a CNS stream. Another program offered two CNS-specific courses, and six programs offered general advanced practice courses that could be relevant to but were not specifically designed for CNSs. The types of courses varied among graduate programs but focused on developing clinicians, educators, leaders and/or researchers to practise at an advanced level. The limited access to CNS-specific graduate education in Canada is a key issue challenging CNS role integration and is discussed later in this paper and in another paper in this special issue (Martin-Misener et al. 2010).

Regulation and Scope of Practice

In Canada, the scope of practice for the CNS is the same as that of the registered nurse, and to date, most provinces or territories do not have additional legislation or regulation for this role. In Alberta, the title of "Specialist" is restricted to registered nurses who are practising in a specialty, with a graduate degree that is relevant to the area of practice and three or more years' experience in the specialty (College and Association of Registered Nurses of Alberta 2006). However, the title "Specialist" is not limited to CNS roles and can be applied to other advanced practice nursing roles. In Quebec, NPs in primary care, neonatology, nephrology or cardiology who have completed a specialist certificate in addition to master's education can call themselves specialists (Gouvernement du Québec 2005). These specialist certificates are not available for CNSs and thus the title, CNS, is not formally recognized.

None of our interview participants identified CNS involvement in extended role activities outside the scope of nursing practice. However, in one province, CNSs, particularly those in rural and remote settings, provide some medical role functions. Authority for these extended practice activities occurs through formal and informal transfer of function agreements with physicians, clinical protocols, orders or organizational policies (Schreiber et al. 2005a).

Supply, Deployment and Practice Settings

An accurate assessment of the current number of CNSs in Canada is not possible because of the lack of standardized regulatory and credentialing mechanisms to identify those who qualify as CNSs and the absence of provincial or national processes to track these roles. The data are based on nurses who self-identify as CNSs, even though they may not have the recommended graduate education or specialty preparation for the role. Based on these self-reports, between 2000 and 2008 the number of CNSs declined from 2,624 to 2,222 and accounted for about 1% of the Canadian nursing workforce (Canadian Institute for Health Information [CIHI] 2010; CNA 2006b). The greatest drop in CNS numbers occurred in Ontario and British Columbia, but there was a modest rise in the number of CNSs in Newfoundland, Nova Scotia, Quebec and Saskatchewan.

Key informant perceptions were consistent with our findings from the literature about the falling number of CNSs and the need for better mechanisms to monitor the supply and deployment of CNS roles. When commenting on how CNSs were utilized in their practice setting or jurisdiction, interview and focus group participants noted that once the role was introduced it was generally well received. However, limited data existed to support health human resource planning for the role, and the role was not well understood or integrated into the health system. As these policy makers and regulators explained:

I don't think it [CNS role] is really embedded into the system the same way that NPs are.

There is an uncertainty of the real supply of CNSs in the system.

So they're kind of like lost souls that kind of [have] ... fallen out of favour. So it's actually ... having a process to ensure that their role is recognized as well, and I think that's going to take some time because first of all we have to identify who are CNSs.

Educator and administrator participants also painted a picture about the patchwork deployment of CNS roles, with some jurisdictions eliminating the role and others having some role sustainability or resurgence:

The CNS role has been very alive and active in British Columbia for many years, since probably the late '60s.

The CNS is an interesting role in that it has not always been a role the people have always sanctioned or understood.... In times of economic crunch ... CNSs were laid off.... So it has been an interesting role to

re-establish and get moving again in our region. And there are pockets of them, and when they are there they are very effective.

During times of economic constraint, the perceived lack of CNS role impact on the provision of clinical services made the role vulnerable to cutbacks. This NP explained that once the roles were eliminated, they were often not re-introduced:

There has been a reduction in the CNS as a consequence of the '90s. I can only speak to [our] region ... when in the early '90s many of the CNS roles were deleted because they were seen to be extraneous to direct care.

CNSs are typically found in acute care settings such as inpatient units, critical care units and hospital-based clinics (Alcock 1996; Davies and Eng 2005; Forster et al. 2005; Hogan and Logan 2004; Pepler et al. 2006). Recent reports document the introduction of CNS roles in community-based practices and in assisted living and long-term care facilities to address the unmet and specialized health needs of underserved populations in rural and remote settings (Health Canada 2006; Smith-Higuchi et al. 2006). In 2005, the Office of Nursing Services for the First Nations and Inuit Health Branch introduced 16 CNS positions across Canada to address concerns in three key areas: maternal child health, mental health and chronic disease/diabetes. The major drivers for introducing these roles were difficulty in recruiting and retaining nursing staff in First Nations communities and the need for enhanced clinical resources and supports for front-line nurses (Veldhorst 2006). Their responsibilities include nursing education, developing standardized orientation programs, clinical and professional development and improving communication between nursing leadership and front-line staff. A national study of First Nations' health services also identified the need for similar CNS roles for the prevention and management of communicable diseases (Davies 2005).

A three-year project in rural western Canada led to the introduction of a CNS role for assisted living in enhanced lodges and long-term care facilities (Smith-Higuchi et al. 2006). The role provided specialized expertise and leadership in the care of older adults, including coaching and guidance of professional and non-professional staff, collaborative care and consultation services for other health providers. An administrator participant from our synthesis described the introduction of a similar CNS role designed to transition older adults across acute and community healthcare sectors:

We have a CNS who works in our emergency department – bringing into the emergency department the geriatric specialized care.... The work that she is doing as far as outreach to our nursing homes has been amazing ... it's helping to build skill sets in the nursing homes that will prevent

unnecessary hospitalization, which contributes greatly to the hospital being able to meet the needs of the community and building capacity within the nursing home itself for nursing care.

Outcomes of CNS Roles

Some interview participants, such as this nurse educator, were able to articulate the value-added outcomes of CNS roles:

So the CNS really got ... direct improvement in nursing development and quality of care ... improving the care pathways, improving continuity of information, continuity of care.... If I want to improve my care, these are the persons who can help me. So this [the CNS role] has a very large impact and [can act] very rapidly in the field to improve the level of care, to improve the continuity of care and the level of evidence-based care....

Interview and focus group participants, including this administrator, identified that the potential benefits of CNS roles were not universally well known or understood by key stakeholders:

One of the key barriers to integrating the [CNS] role is that people do not understand the contributions that they make. Big contributions ... to make that role really sustainable, we really need to increase the awareness and understanding of the value of that role ... across certainly our region, and I think our province and I am sure across the country.

There is a growing body of international data about the effectiveness of CNS roles, but the limited number of Canadian studies may explain the lack of awareness of CNS outcomes by some interview participants. Two American authors, Fulton and Baldwin (2004), provide the most comprehensive compilation of international studies assessing CNS role outcomes in an annotated bibliography. Multiple high-quality randomized controlled trials in the United States involving varied complex and high-risk patient populations consistently demonstrate that when compared to standard care alone, patients who received CNS care can be discharged from hospital sooner with equal or better health outcomes, fewer hospital readmissions, higher satisfaction with care, improved health-related quality of life and lower acute care health costs (Brooten et al. 2002). CNS home care reduced healthcare costs and improved the quality of life and survival rates for elderly patients following surgery for cancer (McCorkle et al. 2000). In long-term care, patients randomized to CNS care had improved or maintained better levels of physical and cognitive function. They also had better outcomes related to incontinence, pressure ulcers and mental health compared to those who received standard care (Ryden et al. 2000). CNSs also promote staff satisfaction and qual-

ity of care (Gravely and Littlefield 1992) and increase patient and health provider knowledge and skills (Barnason et al. 1998; Linde and Janz 1979). They promote patient safety and reduce complication rates (Carroll et al. 2001; Crimlisk et al. 1997), and CNSs improve patient and health provider uptake of best practices (Patterson et al. 1995; Pozen et al. 1997).

Table 2 summarizes the results of four Canadian studies we identified that included some kind of outcome assessment of CNS roles or CNS-led initiatives. In terms of determining effectiveness, the evaluation methods are weak, with most studies using descriptive post-implementation surveys (Carr and Hunt 2004; Hogan and Logan 2004; Lasby et al. 2004). One study evaluating the effects of a CNS role on the outcomes of hospitalized medical patients used a comparative study design (Forster et al. 2005); however, the use of outcome measures insensitive to CNS role activities may have led to the findings. These included no differences in readmission rates, deaths or adverse events between the CNS and control groups. Despite design limitations, the pattern of results for all four studies is similar to those reported in the international literature indicating that CNS care is associated with improved quality of care, enhanced nursing knowledge and skills, better patient satisfaction with care and increased patient confidence in self-care abilities (Fulton and Baldwin 2004).

Table 2.		Canadian studies reporting CNS role outcomes		
Author and year of study	CNS intervention	Study design	Results	Comments
Carr and Hunt 2004	The purpose of the Acute Care Geriatric Nurse Network (ACGNN) was to enhance nurses' ability to provide evidence-based care to acutely ill older adults in gerontology, medicine, psychiatry, rehabilitation and orthopedics. In this provincial program, teams of CNSs travelled to 25 communities in participating health authorities to provide educational workshops and mentorship.	Post workshop, qualitative feedback	Nurses reported feeling renewed, reconnected and empowered, and more motivated to improve their practice.	

Table 2 Continued.

Forster et al. 2005	CNS functioned as a nurse team coordinator, facilitating hospital care for patients on a medical unit by retrieving preadmission information, arranging in-hospital consultations and investigations, organizing post-discharge follow-up visits, and checking up on patients post-discharge with a telephone call.	Randomized controlled trial (CNS group, $n = 307$; control group $n = 313$)	No differences in readmissions, deaths, or adverse events Patient ratings of quality of care were higher in the CNS group.	Incongruence between outcome measures and CNS role may have contributed to lack of differences in study results.
Hogan and Logan 2004	Implementation of a research-based family assessment instrument developed by a CNS and application of the Ottawa Model of Research Use to guide the piloting of the assessment instrument with members of a neonatal transport team.	Formative evaluation using a post-implementation survey	Improved team member perceptions of knowledge, family centredness and ability to assess and intervene with families.	
Lasby et al. 2004	Neonatal transitional care for parents going home with low-birth-weight babies; care delivered by a team of CNSs and a dietician providing in-home and telephone support for four months after discharge.	Post-discharge questionnaire completed by parents	Lengthened breast milk provision, decreased demand on healthcare resources (particularly emergency departments and pediatrician offices) and enhanced maternal confidence and satisfaction with community service.	

CNS=Clinical nurse specialist

Key Issues and Challenges to CNS Role Integration

Synthesis of the literature and the participant interview and focus group data revealed four challenges limiting the full integration of the CNS role into the Canadian healthcare system: (1) paucity of Canadian research to inform CNS role implementation, (2) absence of a common vision for the CNS role in Canada, (3) lack of a CNS credentialing mechanism and (4) limited access to CNS-specific graduate education.

Paucity of Canadian Research to Inform CNS Role Implementation

Our search for research on the CNS role in Canada revealed only a small number of primary studies or reviews ever conducted in this country. Of 158 primary studies or reviews of advanced practice nurses, only 15 focused specifically on

the CNS role (Table 1) while, in contrast, 126 focused on the NP role (another 17 focused on the APN role in general). There have been no Canada-wide studies of the CNS role to learn more about, for instance, the number of CNSs required to meet healthcare needs, trends in CNS deployment, CNS practice patterns and implementation of role dimensions (i.e., clinician, educator, researcher, consultant, leader), number of vacant CNS positions and reasons for vacancy, CNS job satisfaction, CNS education needs, and evaluation of non-clinical role dimensions (e.g., promotion of evidence-based nursing practice). A specific recommendation by the CHSRF roundtable was that the CNS role in the Canadian context requires further study and should be the focus of future academic work.

Absence of a Common Vision for the CNS Role in Canada

A striking observation based on both limited national research and participant interview data was the invisibility of CNS roles in the Canadian healthcare system. Aside from nurse administrators, educators and CNSs, interview participants such as physicians, regulators and government policy makers reported limited experience and/or understanding of CNS roles. The increased visibility of NP roles in Canada corresponds with provincial and national primary healthcare reform policies, funding of primary healthcare NP education programs and roles, and investments in role supports such as the Canadian Nurse Practitioner Initiative (CNPI 2006; Health Canada 2000). However, healthcare administrator, nursing regulator and government policy maker interview participants noted that similar provincial or national investments to support CNS roles are lacking. As a nurse regulator explained,

There's still a lot of work to be done with the CNS role in this province ... basically I don't know what to tell you about that group. There's been so little done in terms of developing the role and what they actually do ... so in this province it's not a well-developed role.

Administrators also identified the need to increase awareness and better align CNS roles with important policy issues where CNSs can make an important contribution:

I would like to see massive increased investment in CNS roles in practice environments, and I think they would have a strong, positive contribution to patient safety, quality and advancement of nursing practice.... I think that would be an important step to ... successfully integrating the role.

In the 1990s, CNSs formed the Canadian Clinical Nurse Specialist Interest Group (CCNSIG) to develop practice standards, hold annual national conferences and produce quarterly newsletters. These activities would link colleagues from across the country to profile and share experiences about their roles and to tackle practice and

role implementation issues (CCNSIG 1997). With the assimilation of this interest group into the Canadian Association of Advanced Practice Nurses (CAAPN), which represents both CNSs and NPs, the national voice of CNSs has weakened.

One challenge to organizing CNSs as a professional group is that they often align their professional interests, activities and connections with organizations associated with their specialty field rather than with their role (CNA 2006a). This minimizes their collective power and opportunity to address nursing and healthcare issues relevant to CNS practice at provincial and national policy tables. As one administrator described,

I think that CNSs themselves need to be maybe a little bit more vocal. NPs were certainly more vocal ... so when the NP role came into the province ... it got a lot of attention and the CNS role hasn't.

CNS participants identified the need for networking and national support. A CNS interview participant notes,

It's really important for myself as a CNS to be able to meet with people in other similar positions to talk about ... what are they doing, how do they manage this, [and] how can we work together to plan some collaborative efforts that will make a difference ... for the whole.

Partly to address the absence of a common vision for the CNS role, the recommendation most frequently identified by the CHSRF roundtable was that the CNA lead the creation of vision statements that clearly articulate the value-added roles of CNSs and NPs across settings. These vision statements should include role descriptions to help address implementation barriers deriving from the lack of role clarity.

Lack of a CNS Credentialing Mechanism

There is no credentialing mechanism for CNSs in Canada. As a result, nurses can identify themselves as CNSs even if they lack the required graduate education and expertise in a clinical specialty. Consequently, current CIHI data do not provide an accurate indication of the number of CNSs in Canada, as defined by the CNA (2009). Many of the interview participants, especially the CNSs, advocated for title protection. However, this poses a significant challenge because the regulation that would enable title protection is not required, since CNS practice does not extend beyond the scope of the registered nurse. CNS interview participants felt that title protection would strengthen role recognition and ensure that those in the role have the appropriate education and experience.

Administrators we interviewed commented,

I don't think there's much support in policy for the regulation and legislation around the CNS, and that again is a barrier to the CNS role being implemented.

I think the CNSs are the least understood. I think with the legislation around NPs and the protection of the title, the CNSs got lost. Everybody sort of jumped on the bandwagon because we had legislation to protect the NPs ... everyone was talking about NPs. The funding was for NPs, and I think the CNSs got lost in that.... I think people still don't understand.

The issue is further complicated by the limited access to standardized CNS-specific graduate education in Canada, described in the next section.

Limited Access to CNS-Specific Graduate Education

As noted above, even though the recommended education for CNSs in Canada and internationally is a master's degree from a graduate nursing program (CNA 2008; International Council of Nurses 2008), many nurses without a graduate degree self-identify as CNSs. Interview participants and one Canadian study suggest the educational preparation of those who call themselves CNSs influences how the role is operationalized. Pauly et al. (2004) and Schreiber et al. (2005a), reporting on the same study, found that self-identified CNSs without a master's degree focused their activities on the care of individual patients, while in contrast, CNSs with a master's degree implemented their roles in a manner more consistent with national standards for advanced practice (CNA 2008). They applied a broader depth of research, education and administrative knowledge and skills to improve patient care at the individual, unit and institutional level.

Our survey of Canadian nursing graduate programs described above revealed that there are very few CNS-specific graduate programs. A review from the United States indicated CNS programs there are expanding (Fulton and Baldwin 2004). The following quotes from three APNs from different provinces convey concerns about the absence of programs specific to the CNS role:

I have concern at the education level about how CNSs are being able to access their education. [The university] master's program used to have a CNS role. Now they have one course on advanced practice. They have a whole NP program, but if you want to become a CNS, it's becoming more and more difficult to get that kind of system thinking [and] system-support level of education to be able to understand where your role is at the systems level.

Well, my understanding is that there aren't that many master's programs that have a CNS stream. Now, they're being developed as an advanced practice nursing role – that's the stream. It's [CNS] no longer a clinical specialty that you develop at the master's level of preparation, and that's unfortunate.

The key concern around the CNS role which is of grave concern to me is the lack of specific education for the CNS role. There used to be programs that had a very well designed course content that would prepare them for evaluation, for project management, for the whole piece of work at the systems level, policy, developing policy and protocols. All of those pieces are not necessarily lumped together in a nice package so that when you come out you can really step out in the role and fly, and in the United States there are some of those educational programs directed for the CNS. There were in Canada, but there aren't anymore.

Specialty education is important for developing APN role confidence and job satisfaction (Bryant-Lukosius et al. 2007) and for establishing the clinical competence and credibility necessary for successful role implementation (Richmond and Becker 2005). Consistent with our earlier findings about the general nature of advanced practice education provided by the majority of graduate nursing programs in Canada, CNS interview participants felt their educational preparation for the role was too broad. Educators, CNS and administrator participants also identified that lack of consistent and clearly defined CNS competencies and shortages of faculty with CNS experience limited opportunities to promote role understanding and role socialization and to develop skills for managing challenges to role implementation. As these participants explained,

There is a lack of consistency amongst education programs for CNSs. Generally speaking they don't have a clear sense of what should be involved in CNS education. So you end up with very broad and multidimensional characters who are out there carrying out what they think is the role of the CNS, but everyone is doing it differently.

I don't necessarily know that faculty always understand the differences between these [APN] roles. If all their education has been at the master's level as administrators, educators or NPs, then how can they fully understand the CNS role? They don't. So I think as educators we have to do a better job at making certain ... what we teach our students and how to operationalize their role.

Limited access to CNS-specific education may also contribute to role shortages in areas with identified needs. A major barrier to recruitment of CNSs for First Nations

communities was the limited pool of nurses available to fill the positions (Health Canada 2006; Veldhorst 2006). Key informants identified similar concerns about health human resource planning and the need for recruitment efforts to ensure a sufficient supply of CNSs to fill future roles. One CNS key informant explained,

Well, number one, the biggest barrier is they aren't preparing them out of university. This is a very specific role. The CNSs that are practising right now, we've been around a long time, and a lot of retirements are occurring right now. There's no succession planning.

The CHSRF roundtable recommended that APN educational standards, requirements and processes across the country be standardized.

Discussion

It is possible that inconsistent use of CNS role titles and the use of different terms to describe CNS practice in the literature contributed to the low number of Canadian publications identified in our scoping review. However, a recent international review of the CNS literature identified a similar number of Canadian articles that accounted for only 4% of total publications (Lewandowski and Adamle 2009). This suggests that our scoping review has been effective in capturing most Canadian publications. Factors contributing to the low output of CNS-related research have not been systematically identified. Possibilities include the lack of funding opportunities and a limited supply of PhD-prepared CNSs and other investigators interested in developing research programs in this area. Also, CNSs may be more involved in research on clinical issues relevant to their specialty than in health services research focused on their role (Bryant-Lukosius 2010).

Research will play a critical role in establishing the foundation for the continued evolution of the CNS role. The PEPPA framework outlines a nine-step participatory, evidence-based and patient-centred process that utilizes research methods to determine the need for, define the role of, promote implementation for, and evaluate the outcomes of APN roles (Bryant-Lukosius and DiCenso 2004). The model can be applied to introduce new or redesign existing CNS roles from a local practice setting, or regional, provincial or national perspective and would be useful for developing a strategic research plan. An important benefit of this framework for CNSs is the extent of decision-maker and stakeholder involvement. This involvement has been shown to facilitate the development of well-defined roles and promote stakeholder understanding, acceptance and support for the APN role (Bakker et

al. 2010; McAiney et al. 2008; McNamara et al. 2009).

In applying the PEPPA framework, a key area for CNS research is to provide a more accurate assessment of the current supply and demand for CNSs and to monitor trends in CNS employment and integration within the health-care system. The framework encourages needs-based health human resource planning to provide rational data for decision-making about the introduction of APN roles and helps to maintain a focus on patient health needs and avoid undue emphasis on the self-interest of APNs and other stakeholders (Myers 1988). Role delineation studies that engage key stakeholders and utilize consensus-based research strategies to determine CNS role priorities and the competencies required to implement the role will be important for achieving role clarity and role understanding and refining CNS curricula. National roundtable participants who reviewed the DSS report also recommended a similar approach for the future planning of CNS roles.

There is substantial international data about the effectiveness of CNS roles. However, interview and national roundtable participants identified the need for better evidence about the cost-effectiveness of these roles from a Canadian context. Studies that assess CNS role outcomes and identify how various components of the role contribute to these outcomes will be important for ongoing role clarification. If decision-maker uncertainty about role benefits persists, CNS roles will remain vulnerable to layoffs and potential replacement by other providers. The shortfall of CNS-related research in Canada is very striking. Strategies are required to increase capacity to conduct CNS research and to develop an academic community of APN faculty, researchers and CNSs in this field.

The role of advanced practice nurses in global and Canadian healthcare systems has never been stronger. As clinical experts, leaders, and change agents, APN roles are in high worldwide demand as a strategy for developing sustainable models of healthcare (Bryant-Lukosius et al. 2004; Schober and Affara 2006). The same cannot be said about the CNS role in Canada. Despite four decades of experience, growing international evidence about their effectiveness, and recognition among some study participants about the potential benefits of CNSs for patients, providers and the health system, there is a lack of national vision about the role of the CNS in Canada. This lack of vision corresponds with absent provincial or national policies or investments to support CNS role development and integration.

While the evidence indicates that CNSs can positively impact the health of Canadians and address important policy priorities related to patient access to care, patient safety, quality of care, healthcare costs, evidence-based practice and improved nursing practice, they have no national voice or influential champions to communicate this information to key policy and healthcare decision-makers. The declining number of CNSs over the last decade suggests that the future of CNSs in Canada is in jeopardy. Several factors known to be important for the development of professional and advanced nursing roles and for role legitimacy within the Canadian healthcare system are limited or absent. They include the collective commitment of the nursing profession, ongoing development of the scientific basis for the role, and access to relevant education and curricula to ensure role clarity and the competency of CNS practitioners (Brown 1998; Bryant-Lukosius et al. 2004; Registered Nurses' Association of Ontario 2007). The sustainability of CNS roles will depend on the extent to which CNSs, the nursing profession, APN educators, regulatory agencies, healthcare funders and decision makers can be galvanized to address these role barriers.

If the role is to survive over the next decade, CNSs will need to regain their national voice and prominence as clinical leaders in the health system. Stronger national leadership by CAAPN and its CNS Council to facilitate networking and relationship building with key stakeholders and champions will be important for gaining CNS access to policy tables. CNSs also need to re-establish their own vision for their role. A good model for these activities has occurred in the United States, where CNSs also experienced a declining workforce. Over the past six years there has been an influx of CNS-related publications and policy activities driven by the National Association of CNSs (NACNS 2003, 2004). They encompass efforts to establish a national vision (Goudreau et al. 2007), clarify credentialing and certification issues (Goudreau and Smolenski 2008), establish an empirical base for CNS education (Stahl et al. 2008), increase enrolment in CNS education programs (NACNS 2004) and document the impact of the role on patient, provider and health systems outcomes (Fulton and Baldwin 2004). There are also numerous reports of recent innovations in CNS practice, including perioperative care (Glover et al. 2006), cardiovascular care (Aloe and Ryan 2008), emergency care (Chan and Garbez 2006), rapid response teams (Polster 2008) and a shared care CNS–MD model (Sanders 2008). In the United States, “Magnet” status is a prestigious designation awarded to hospitals that attract and retain highly qualified nurses and that have achieved excellence in professional nursing practice. In a recent study of Magnet-status hospitals,

87% and 92% of administrators reported that CNSs were important for, respectively, achieving and maintaining Magnet status (Walker et al. 2009).

CNSs will also need to do a better job of communicating their roles and how they make a difference to key stakeholders. In contrast to the five integrated sub-roles (clinician, educator, researcher, consultant and leader) that define the CNS role in Canada (CNA 2009), CNSs in the United States are described as having three spheres of influence: patients/populations, nurses/nursing practice and organizations/health systems (NACNS 2004). A recent international review of the CNS literature supports the spheres of practice identified by the NACNS (2004) and confirms three areas of CNS practice: managing the care of complex and vulnerable populations, educating and supporting interdisciplinary staff, and facilitating change and innovation within the health system (Lewandowski and Adamle 2009). Examining this model and its relevance to the Canadian healthcare system may be a first step in clarifying the CNS role and in particular coming to consensus about the nature of the clinical aspects of the role. The CNA (2008) emphasizes the clinical role of the CNS enacted through direct interactions with patients or through supportive and/or consultative activities. Lack of clear direction about clinical role responsibilities that reflect advanced practice or what constitutes supportive and consultative clinical activities has made this aspect of CNS roles open to various interpretations.

The goal of regulation and title protection is the protection of the public. The arguments put forth for CNS title protection have more to do with role clarity and role preservation than public safety. We found few reports of CNS involvement in expanded practice, and thus the need to expand CNS scope of practice beyond that of the registered nurse with the associated regulatory changes has not been established. Furthermore, we know from experience with the integration of NP roles that significant policy changes such as title protection occur slowly, with small incremental changes over many years and only when the policy change is consistent with government agendas (Hutchison et al. 2001). Thus energy focused on obtaining title protection will be misspent and unsuccessful, given the lack of political support for this policy among nursing regulators and government decision-makers. Finally, title protection will not address the fundamental barriers to role integration, namely the lack of CNS role clarity and the need for a national stakeholder consensus about the role CNSs should play in the Canadian healthcare system. These issues must be addressed first, before the need for title protection can be determined.

A more comprehensive examination of APN education programs and the barriers to providing CNS-specific curricula is required. However, the generic nature of some advanced practice programs or course offerings suggests that compared to the CNA (2008), graduate programs may view advanced practice more broadly as a level of practice relevant to a number of nursing roles rather than relating to specific clinical roles such as the CNS or NP that integrate education, leadership, research and consultative expertise. National roundtable and interview participants were in agreement about the need for improved consistency and national standards for CNS education. Given that the last national review of CNS role competencies occurred in 1997, a pan-Canadian initiative to evaluate and update these competencies and to provide the basis for educational review and curricula development is warranted. Clear education standards and role competencies will provide faculty and prospective students with a better understanding of the CNS role and may facilitate recruitment to education programs with curricula that offer a good match with CNS practice.

Conclusion

This decision support synthesis provides the most comprehensive examination of CNS roles in Canada to date. While the published data are limited, the integration of data from key informant interviews and focus groups was particularly useful in providing a current snapshot of this role. Important issues and challenges confronting CNSs include the lack of empirical data to support role development, the lack of national leadership and a clear vision of the role, and the need for more relevant and consistent CNS education. The consistency between study participant perceptions of these challenges and those reported in the national and international literature lends strength to our study findings.

CNSs have much to offer Canadian patients, health providers, organizations and health systems. Full integration of the CNS role could address many key policy issues confronting the healthcare system. These include improving timely patient access to highly specialized and complex care, particularly for vulnerable and high-risk populations; containing healthcare costs through improved coordination of services and evidence-based care; and maximizing nursing health human resources through improved clinical support and retention of nurses at the bedside. Achieving this potential and the long-term sustainability of the CNS role in Canada will require intersectoral approaches and the national commitment of CNSs and the nursing profession.

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