Clinical Nurse Specialist Role and Practice in Canada

6

Denise Bryant-Lukosius

Abstract

In Canada, the clinical nurse specialist (CNS) role is recognized as an advanced practice nursing role focused on improving nursing practice and patient, population, and health system outcomes. The CNS role is multidimensional in nature involving the integration of knowledge, skills, and expertise in clinical care, leadership, consultation, collaboration, education, and research. The competencies for CNS practice have been organized into four main categories related to clinical practice, systems leadership, advancement of nursing practice, and evaluation and research. While recent progress has been made, full integration and optimal use of the CNS role within the Canadian healthcare system remains elusive. Pan-Canadian strategies to clarify and communicate the role to key stakeholders, develop national credentialing mechanisms, increase access to CNS-specific education, and create healthcare policies and funding mechanisms

This chapter has been written before the 2020 APN ICN guidelines were published and reflects the views of the authors.

D. Bryant-Lukosius (✉)
School of Nursing and Department of Oncology, McMaster University, Hamilton, ON, Canada

Canadian Centre for Advanced Practice Nursing Research (CCAPNR), McMaster University, Hamilton, ON, Canada

Canadian Centre of Excellence in Oncology Advanced Practice Nursing (OAPN) Juravinski Hospital and Cancer Centre at Hamilton Health Sciences, Hamilton, ON, Canada

Escarpment Cancer Research Institute, Faculty of Health Sciences, McMaster University, Hamilton, ON, Canada
e-mail: bryantl@mcmaster.ca

J. S. Fulton, V. W. Holly (eds.), *Clinical Nurse Specialist Role and Practice*, Advanced Practice in Nursing, https://doi.org/10.1007/978-3-319-97103-2_6

to support utilization of the role are required. Research to evaluate the outcomes and impact of the CNS role within the context of the Canadian healthcare system is also needed.

Keywords
Clinical nurse specialist · Advanced practice nurse · Role implementation · Competencies · Outcomes

The CNS is a strategically important role for addressing the health and health system needs of Canadians. It is one of two types of advanced practice nursing roles recognized in Canada, with the other being the nurse practitioner (NP) role. The early evolution of the CNS role dates back to the 1960s when it was introduced in acute care hospitals to provide specialized nursing expertise. Advances in medical treatment and technology and subsequent increases in patient acuity and the complexity of care resulted in the need for nurses with advanced specialized knowledge and skills to support nurses at the bedside and to improve the quality of nursing care (Bryant-Lukosius et al. 2010; Canadian Nurses Association 2018).

6.1 Definition of the CNS

The Canadian Nurses Association defines the CNS as a "registered nurse who holds a graduate degree in nursing and has a high level of expertise in a clinical specialty" (Canadian Nurses Association 2014: 1). The CNS role is a multidimensional clinical role focused on improving patient, population, and health system outcomes through the integration of knowledge, skills, and expertise in clinical care, leadership, consultation, collaboration, education, and research. Similar to the view of CNSs in the United States (National CNS Competency Task Force, National Association of Clinical Nurse Specialists 2010), the CNS role in Canada is felt to positively impact at three levels: the patient or client, nurses and interprofessional teams within practice settings, and organization/systems. CNSs work in a variety of specialty areas that may be defined by the type of illness (e.g., cancer), patient health needs (e.g., pain management), type of care (e.g., critical care), or the age of patient populations served (e.g., pediatrics, geriatrics) (Bryant-Lukosius et al. 2010).

6.2 Current Status and Deployment

Development and integration of the CNS role within the Canadian health system has fluctuated over the years due to the influence of several factors including geography, demographics, the economy, and healthcare policies (Bryant-Lukosius et al. 2018). Geographically, Canada is the second largest country in the world but also

one of the most sparsely populated countries with a population of 35 million people (Wikipedia 2018). Over 82% of Canadians live in urban centers in the southern regions of the country, and as a result healthcare resources are concentrated in these areas with disparate services in rural, northern, and remote communities (Statistics Canada 2017a). Healthcare legislation, funding, and policies at the federal level and regionally across 13 provinces and territories also impact on how nursing and healthcare services are organized and delivered.

Perhaps the peak development of CNS roles occurred in the late 1990s. Although there were no specific CNS education programs, the introduction of graduate nursing programs in most provinces in the 1970s and 1980s stimulated the development of nursing in general and also the CNS role. In the 1980s, the Canadian Clinical Nurse Specialist Interest Group was established to support the national development of the role by creating practice standards, hosting national conferences, and disseminating regular newsletters (Bryant-Lukosius et al. 2010). In 1992, this interest group evolved to become the Canadian Association of Advanced Practice Nurses as the national voice for CNSs and also NPs, whose roles were also progressing (Easson-Bruno n.d.). By 2000, many CNS leaders in Canada had transitioned to become acute care NPs, especially in the largest province of Ontario, where a master's program specifically for this role had been introduced. The enhanced scope of practice and autonomy associated with the acute care NP role may have influenced these transitions. Job security may have also been a factor as the number of CNS positions was declining due to a downturn in the economy and financial constraints within the healthcare system (Bryant-Lukosius et al. 2010).

The actual numbers of master's prepared CNSs in Canada are difficult to determine because the role is not title protected and there are no regulatory or credentialing systems in place to identify and monitor nurses working in these roles. Only self-identified CNSs can be captured through provincial/territorial nurse regulating bodies. Best estimates from current data suggest that the number of CNS in Canada continues to decline. From 2000 to 2016, the number of self-identified CNSs decreased from 2624 (with and without a master's degree) to 550 (with a master's degree) (Canadian Nurses Association 2006; Canadian Institute for Health Information 2017). If the current number is accurate, CNSs make up less than 0.02% of the registered nurse workforce, compared to NPs who account for 1.6%. A national study indicated that more than 33% of self-identified CNSs were working in positions that were akin to but not titled as a CNS role (Jokiniemi et al. 2018). Thus, it is possible that the actual number of CNSs is underestimated with additional nurses working in CNS-type roles, but because the job title is not CNS, they do not identify as such. Lack of consistent reporting about which CNSs are master's prepared also makes it difficult to accurately assess deployment trends of CNSs who meet international criteria for advanced practice.

Recent studies demonstrate that 80–90% of CNSs work in urban communities (Jokiniemi et al. 2018; Kilpatrick et al. 2013). There is also evidence of increased

health system integration with over 40% of CNSs now working outside of hospitals in diverse practice settings including the community, home care, primary care, long-term care, hospice, government agencies, and correctional institutions. The majority (68%) of CNSs report working these five specialty areas: gerontology-rehabilitation, medical-surgical, emergency-critical care, psychiatry-mental health, and community health (Kilpatrick et al. 2013).

6.3 Models of CNS Practice

CNS practice is highly variable as the roles are shaped to address the unique contexts of the practice settings in which CNSs work and the patient populations they serve. As a result, there is no one common model of CNS practice. In a national survey of CNSs, almost 40% reported they were not involved in the direct provision of patient care, 30% worked in a consultative role, and 28% provided direct care to a broad range of patients or those with specific needs related to risk factors, chronic conditions, case management, or acute episodic illness (Kilpatrick et al. 2013).

The paucity of publications about CNS roles in Canada limits current understanding about the scope and impact of various models of CNS practice. One area for which there are several publications relates to geriatric care as new models of CNS practice have evolved to address the health needs of a rapidly aging Canadian population (Statistics Canada 2017b). One model is the geriatric emergency nurse where the CNS screens for high-risk patients, conducts comprehensive assessments, and facilitates care planning and care coordination (Asomaning and Van Den Broek 2011). Another proactive model with a strong focus on health promotion and illness prevention involves the CNS providing expert coaching and guidance, consultation, leadership, and collaboration to provide care to older adults in long-term care facilities in rural communities (Smith Higuchi et al. 2006). New models of CNS practice in oncology and palliative care emphasize triage and patient navigation as important aspects of the role requiring in-depth knowledge and comprehensive assessment, interprofessional collaboration, and care coordination skills (Desrochers et al. 2016; Stilos and Daines 2013; Marchand 2010). Several publications highlight the essential leadership role CNSs play to improve patient safety and quality of care by designing and implementing innovative evidence-based services, practices, and policies related to breast cancer screening and assessment (Marchand 2010), geriatric care (McDonald 2012; Smith Higuchi et al. 2006), pain management in long-term care (Kaasalainen et al. 2015), a search protocol in psychiatric inpatient units (Abela-Dimech et al. 2017), wound care (Canadian Nurses Association 2012a), and pediatric vascular access devices (Gordon and Kenny 2017). A frequently reported theme in the literature is that CNSs are focused on addressing complex patient care needs and clinical situations and that their activities extend beyond practice settings to impact on the health of populations and communities and the regional delivery of healthcare services (Canadian Nurses Association 2012a; Marchand 2010; McDonald 2012; Smith Higuchi et al. 2006.

6.4 Outcome Measures and Evaluation

Although CNSs have existed in Canada for over 50 years, evidence about their effectiveness and impact is largely anecdotal. Systematic reviews of CNS roles document the absence of randomized controlled trials or comparative studies conducted in Canada (Bryant-Lukosius et al. 2015a, b; Donald et al. 2013; Kilpatrick et al. 2014a, 2015). Capacity to evaluate the impact of CNS roles is constrained by the ad hoc nature and short timeline in which the roles are introduced, limited access to research and role evaluation expertise, insufficient electronic documentation systems to track CNS activities and outcomes, and health services research funding priorities that are not aligned with needs for research focused on nursing roles. In a national study, CNSs were asked to report on the frequency (scale 1 (seldom) to 4 (constantly)) in which they achieved specific outcomes (Kilpatrick et al. 2013). Highest mean scores (2.5 to 2.91) related to improvements in patient outcomes including knowledge, satisfaction, comfort level, quality of life, anxiety, and self-care ability. CNSs also perceived they positively impacted on family outcomes related to knowledge, satisfaction, and anxiety (mean scores 2.8 to 2.89). CNSs felt that they had less frequent impact on system outcomes related to health care or treatment costs (mean scores 2.05 to 2.12). Narrative reports by CNSs and their key stakeholders (e.g., patients, nurses) indicate that CNSs contribute to improved system outcomes such as timely access to care and patient referrals to appropriate community services (Desrochers et al. 2016; Marchand 2010; McDonald 2012; Canadian Nurses Association 2012a), reduced emergency department visits (Canadian Nurses Association 2012a) and hospital admissions (Smith Higuchi et al. 2006), better quality of care (McDonald 2012), fewer patient safety incidents (Abela-Dimech et al. 2017), increased team efficiency (Stilos and Daines 2013), and the delivery of tailored, individualized, and patient-centered care (Desrochers et al. 2016).

6.5 CNS Competencies

In 2014, new pan-Canadian competencies for the CNS were established (Canadian Nurses Association 2014). These competencies build on a national framework for advanced nursing practice (Canadian Nurses Association n.d.). There were several aims for developing these competencies including to promote CNS role clarity, increase awareness and understanding of the CNS role for improving health and healthcare services, inform the development of CNS education programs, support CNSs to implement their roles, and guide employers who are introducing CNS roles in their organizations. A total of 65 competencies are organized into 4 categories related to clinical care, systems leadership, advancement of nursing practice, and evaluation and research. In a recent role delineation study, Canadian CNSs reported spending some or a great extent of their work time enacting most of the competencies (Jokiniemi et al. 2018). No competencies were not enacted. While there was a high degree of variability in time spent, these finding suggests that the new competencies reflect CNS practice.

6.6 CNS Education

A major barrier to the development of CNS roles in Canada is limited access to CNS-specific graduate nursing education programs and specialty-based education. Canada's geographic size and small population base make it difficult to recruit sufficient numbers of CNS students for any one university, and most universities do not have faculty resources or expertise to offer specialty education (Martin-Misener et al. 2010). It is only recently that a few universities have offered a graduate program stream specific to CNSs. As a result, most CNSs graduate from generic master's programs and may not have a good understanding of the role or the knowledge, skills, and confidence to successfully implement the role (Bryant-Lukosius et al. 2010). The lack of CNS education programs has also resulted in a shortage of CNSs in areas of identified need.

6.7 Credentialing: Regulatory, Legal, and Certification Requirements

In Canada, the regulation of nurses occurs at the provincial/territorial level and is governed by a nursing college or association. In most provinces, the CNS has the same scope of practice as a registered nurse, and as such, the role is not regulated or title protected. In Quebec, title protection exists for CNSs in infection prevention and control (Ordre des infirmières et infirmiers du Québec 2011), and work is in progress to establish CNS regulation and graduation education (Ordre des infirmières et infirmiers du Québec 2016). In Alberta, the "specialist" title is protected for registered nurses who have relevant graduate nursing education and 3 or more years of experience in a specialty area (College and Association of Registered Nurses of Alberta n.d.). However, the specialist title is not specific to the CNS role. Except for Quebec, there are no provincial credentialing systems in place to ensure that nurses have the minimum requirements to be a CNS related to education, specialty certification, or experience. Specialty certification available through the Canadian Nurses Association is not a requirement for the CNS role, and only exists at a basic and not advanced level. The lack of regulation, title protection, and required credentials contributes to role confusion, poor stakeholder understanding of the role, and variability in the extent to which all CNS role domains and competencies can be fully implemented (Bryant-Lukosius et al. 2010; Kilpatrick et al. 2013).

6.8 Moving Forward: Challenges and Opportunities

In 2010, following completion of a national study of advanced practice nursing roles, a number of recommendations were made to improve the integration of CNSs within the health system: conduct research to examine workforce trends and factors influencing successful implementation and role impact, establish a common vision

for the role in Canada, develop and establish national standards and competencies for CNS practice, and develop CNS-specific education (Bryant-Lukosius et al. 2010).

Since 2016, some progress has been made in implementing these recommendations (Bryant-Lukosius et al. 2018). Pan-Canadian strategies have raised the national profile and improved understanding of CNS practice. For example, two practice pattern studies were conducted to examine the CNS workforce and delineate the role (Jokiniemi et al. 2018; Kilpatrick et al. 2013). The results of both studies have or will be presented at national and provincial nursing forums. The Canadian Nurses Association developed a policy document (Canadian Nurses Association 2012b) and hosted a roundtable meeting (Canadian Nurses Association 2013) that led to the subsequent development of pan-Canadian CNS competencies. A national association of CNSs has been created to provide a voice for CNS practice and policy issues, and CNS education programs have been implemented in at least two provinces.

To maintain this momentum moving forward, CNSs and nursing leaders including regulators, educators, researchers, managers, and policy-makers will need to work collectively to agree on a common vision for the CNS role, establish a credentialing system, and articulate a clear business case, supported by national and international evidence, for how the role aligns to support policy priorities for improving the health of Canadians and creating sustainable healthcare services. Research is required to evaluate the impact and outcomes of CNS roles within the Canadian context. Priorities for research should parallel health system improvement priorities to demonstrate the value of CNSs for improving patient safety and quality of care, increasing access to care, providing chronic disease prevention and management, strengthening health systems integration, and addressing social determinants of health and health inequities (Canadian Nurses Association 2012a).

Lack of role clarity and poor stakeholder understanding of the CNS role are associated with underutilization and sub-optimal implementation of the role and poor CNS job satisfaction. These factors impact on CNS recruitment and retention and have contributed to a shrinking CNS workforce (Bryant-Lukosius et al. 2010; Kilpatrick et al. 2014b, 2016). Pan-Canadian efforts by national and provincial nursing associations and regulators will be necessary to stem the declining numbers of CNSs through policies to clarify the role; establish standardized role requirements and credentials; and educate the public, nurses, healthcare administrators, and government policy-makers about the role. Pan-Canadian approaches are needed to document master's prepared CNSs in each province in order to effectively monitor workforce trends and gaps in deployment.

A challenge for CNSs is that they are not well represented at decision-making and policy tables across all levels of the health system, and as a result CNS solutions for addressing healthcare needs are not considered (Bryant-Lukosius et al. 2010). CNSs tend to invest their energy to improve practice in their specialty area and not to advocate for the optimal development and utilization of the CNS role. If the role is to be sustained, CNSs must take a stronger leadership role, become more politically savvy, and be visible and influential at decision- and policy-making forums within healthcare organizations and professional nursing associations and in government.

In this time of economic restraint in health care, current funding models in which CNS salaries are paid through agency operating budgets are a major barrier to the introduction and sustainability of the role (Bryant-Lukosius et al. 2018). This has required courageous and creative nursing leaders to seek nontraditional sources of funding to recruit and develop novice CNSs in areas of high need for specialized expertise, such as mental health and addiction (Gehrs et al. 2016). Specific funding for priority healthcare needs has been useful for deploying CNSs where their expertise can be best utilized. For example, in 2005 Health Canada strategically recruited CNSs for 600 First Nations and Inuit communities to address population health needs and improve nursing practice in targeted areas including maternal/child health, mental health/addictions, chronic disease management, and diabetes (Veldorst n.d.). Healthcare leaders and CNSs should advocate for new funding envelopes and models to support CNS practice in areas of priority. Pay for performance models providing organizations with incentives to reach benchmarks for access and quality of care and bundled funding models for patients with complex chronic conditions are examples of potential funding approaches that may help to leverage CNS expertise.

6.9 Exemplar of CNS Practice in Oncology Palliative Care

This exemplar features a CNS working in palliative care in a cancer center offering highly specialized ambulatory cancer care services across large region in Southern Ontario, Canada. Patients (and their family members) diagnosed with cancer requiring complex symptom management and supportive care to address treatment side effects, manage the consequences of advanced disease, or receive comfort at end of life are the focus of the CNS role. This CNS demonstrates exemplary practice by fully operationalizing all four categories of Canadian CNS competencies (i.e., clinical practice, systems leadership, advancement of nursing practice, and evaluation and research) (Canadian Nurses Association 2014). These actions result in positive impacts at the patient, practice setting, and organizational/systems levels that are regional, provincial, national, and international in scope. This CNS has achieved exemplary practice through graduate and continuing education, national certification in both oncology and in palliative care, and 15+ years of CNS experience—she is an expert CNS (De Souza 2018).

Related to clinical care, the CNS has advanced in-depth knowledge and skills in cancer and palliative care. Working collaboratively within the interprofessional team, she conducts comprehensive patient and family assessments, triages patients to appropriate providers, navigates and refers the patient to community services, facilitates patient goal setting and care planning, provides patient education and self-management support, provides consultation to cancer center and community providers, and proactively assesses and manages patient symptoms and concerns through nurse-led clinics and telephone follow-up.

The CNS provides systems leadership to influence, implement, and manage change to improve care delivery within and across systems. In this regard she is

politically strategic and goal and outcome oriented and effectively communicates and negotiates with the healthcare team and community stakeholders to innovate care. She improves access to and the quality of care by leading the implementation of evidence-based guidelines and policies and by assessing gaps in clinical care and designing new services to address these gaps. For example, she led the regional implementation of evidence-based strategies to improve cancer symptom screening and developed an interprofessional clinic to improve the management development of dyspnea for patients with advanced cancer. Within the cancer center, she develops palliative care expertise and services by mentoring students, nurses, and other providers.

Relevant to the advancement of nursing, this CNS leads initiatives to improve nursing practice as a board member for the national oncology nursing association, presents at conferences, and publishes her work. Nationally and internationally she improves nursing practice by developing and delivering palliative care education courses and programs. She fosters the development of CNS practice by articulating a clear vision of the CNS role to stakeholders (e.g., patients, team members, managers) and mentoring potential CNSs as a tutor in a graduate nursing education program. Provincially, she champions the development of CNS practice in cancer care by co-leading a community practice for advanced practice nurses.

In terms of evaluation and research, the CNS improves the quality of care at the cancer center by participating in interprofessional research, utilizing research evidence to design new policies, practices, and services; contributing to quality improvement initiatives; and leading the evaluation of new service delivery models, such as the dyspnea clinic described above.

References

Abela-Dimech F, Johnston K, Strudwick G (2017) Development and pilot implementation of a search protocol to improve patient safety on a psychiatric inpatient unit. Clin Nurs Spec 31(2):104–114

Asomaning N, Van Den Broek K (2011) Can Nurse 107(8):12

Bryant-Lukosius D, Carter N, Kilpatrick K, Martin-Misener R, Donald F, Kaasalainen S et al (2010) The clinical nurse specialist role in Canada. Can J Nurs Leadersh 23(Special Issue):140–166

Bryant-Lukosius D, Carter N, Reid K, Donald F, Martin-Misener R, Kilpatrick K et al (2015a) The clinical effectiveness and cost-effectiveness of clinical nurse specialist-led hospital to home transitional care: a systematic review. J Eval Clin Pract 21:763–781

Bryant-Lukosius D, Cosby R, Bakker D, Earle C, Burkoski V (2015b) Practice guideline on the effective use of advanced practice nurses in the delivery of adult cancer services in Ontario. Cancer Care Ontario, Toronto, ON. file:///C:/Users/Windows/Downloads/pebc16-4f_0.pdf. Accessed 16 May 2018

Bryant-Lukosius D, Martin-Misener R, Roussel J, Carter N, Kilpatrick K, Brousseau L (2018) Policy and the integration of advanced practice nursing roles in Canada: are we making progress? In: Goudreau KA, Smolenski M (eds) Health policy and advanced practice nursing, impact and implications, 2nd edn. Springer, New York, pp 357–374

Canadian Institute for Health Information (2017) Regulated nurses 2016. https://www.cihi.ca/sites/default/files/document/regulated-nurses-2016-report-en-web.pdf. Accessed 14 May 2018

Canadian Nurses Association (2006) 2005 workforce profile of registered nurses in Canada. Canadian Nurses Association, Ottawa, ON

Canadian Nurses Association (2012a) National expert commission. http://www.cna-aiic.ca/expert-commission/. Accessed 15 May 2018

Canadian Nurses Association (2012b) Strengthening the role of the CNS in Canada. Background paper. https://www.cna-aiic.ca/-/media/cna/files/en/strengthening_the_cns_role_background_paper_e.pdf?la=en&hash=E130029CE85AA0A8B3AD5FC96CF451E90415A4B3. Accessed 16 May 2018

Canadian Nurses Association (2013) Strengthening the role of the CNS in Canada. Pan-Canadian roundtable discussion summary report. https://www.cna-aiic.ca/-/media/cna/page-content/pdf-fr/clinical_nurse_specialist_role_roundtable_summary_e.pdf?la=en&hash=9994CE9E732B48FDA11FE6F51E4F0C4E3A4DCC08. Accessed 16 May 2018

Canadian Nurses Association (2014) Pan-Canadian core competencies for the clinical nurse specialist. https://www.cna-aiic.ca/-/media/cna/files/en/clinical_nurse_specialists_convention_handout_e.pdf?la=en&hash=E9DE6CADB7C0260D9CD969121DA79EB408B8466F. Accessed 13 May 2018

Canadian Nurses Association (2018) Clinical nurse specialists. https://www.cna-aiic.ca/en/nursing-practice/the-practice-of-nursing/advanced-nursing-practice/clinical-nurse-specialists. Accessed 13 May 2018

Canadian Nurses Association (n.d.) Advanced nursing practice. A national framework. https://www.cna-aiic.ca/~/media/cna/page-content/pdf-en/anp_national_framework_e.pdf. Accessed 16 May 2018

College and Association of Registered Nurses of Alberta (n.d.) Standard for the use of the title "Specialist" in registered nurse practice. http://nurses.ab.ca/content/dam/carna/pdfs/DocumentList/Standards/Standard-for-the-Use-of-the-Title-Specialist-in-RN-Practice.pdf. Accessed 16 May 2018

De Souza (2018) Cathy Kiteley. https://www.desouzainstitute.com/team_member/cathy-kiteley/

Desrochers F, Donivan E, Mehta A, Laizner AM (2016) A psychosocial oncology program: perceptions of the telephone-triage assessment. Support Care Cancer 24:2937–2944

Donald F, Martin-Misener R, Carter N, Donald EE, Kaasalainen S, Wickson-Griffiths A et al (2013) A systematic review of the effectiveness of advanced practices nurses in long-term care. J Adv Nurs 69(1):2148–2161

Easson-Bruno S (n.d.) Incoming President's address. Canadian Association of Advanced Practice Nurses Newsletter; 16: 1

Gehrs M, Ling S, Watson A, Cleverley K (2016) Capacity building through a professional development framework for clinical nurse specialist roles: addressing addiction population needs in the healthcare system. Can J Nurs Leadersh 29(3):23–36

Gordon J, Kenny E (2017) Bringing together a health region. Vascular Access 11(2):1–3

Jokiniemi K, Bryant-Lukosius D, Carr M, Kilpatrick K, Martin-Misener R, Rietkoetter S, et al Delineation of specialized and advanced practice nursing roles. Oral presentation accepted for the international nurse practitioner/advanced practice nurse network conference, Rotterdam, the Netherlands, 2018

Kaasalainen S, Ploeg J, Donald F, Coker E, Brazil K, Martin-Misener R, DiCenso A, Hadjistavropoulos T (2015) Positioning clinical nurse specialists and nurse practitioners as change champions to implement a pain protocol in long-term care. Pain Manag Nurs 16(2):78–88

Kilpatrick K, DiCenso A, Bryant-Lukosius D, Ritchie JA, Martin-Misener R, Carter N (2013) Practice patterns and perceived impact of clinical nurse specialist roles in Canada: results of a national survey. Int J Nurs Stud 50(11):1524–1536. https://doi.org/10.1016/j.ijnurstu.2013.03.005

Kilpatrick K, Kaasalainen S, Donald F, Reid K, Carter N, Bryant-Lukosius D et al (2014a) The effectiveness and cost effectiveness of clinical nurse specialists in outpatient roles: a systematic review. J Eval Clin Pract 20(6):1106–1123

Kilpatrick K, DiCenso A, Bryant-Lukosius D, Ritchie JA, Martin-Misener F, Carter N (2014b) Clinical nurse specialists in Canada: why are some not working in the role? Can J Nurs Leadersh 27(1):62–75

Kilpatrick K, Reid K, Carter N, Donald F, Bryant-Lukosius D, Martin-Misener R et al (2015) A systematic review of the cost effectiveness of clinical nurse specialists and nurse practitioners in inpatient roles. Can J Nurs Leadersh 28(3):56–76

Kilpatrick K, Tchouaket E, Carter N, Bryant-Lukosius D, DiCenso A (2016) Relationship between clinical nurse specialist role implementation, satisfaction, and intention to stay. Clinical nurse specialist. Int J Adv Nurs Pract 30(3):159–166

Marchand P (2010) The clinical nurse specialist as nurse navigator: ordinary role presents and extraordinary experience. Can Oncol Nurs J 20(3):80–83

Martin-Misener R, Bryant-Lukosius D, Harbman P, Donald F, Kaasalainen S, Carter N (2010) Education of advanced practice nurses in Canada. Can J Nurs Leadersh 23(Special Issue):61–84

McDonald D (2012) Who is the clinical nurse specialist. Can Nurse 108(6):22–25

National CNS Competency Task Force, National Association of Clinical Nurse Specialists (2010) Clinical nurse specialist core competencies. Executive summary 2006-2008. http://www.nacns.org/wp-content/uploads/2017/01/CNSCoreCompetenciesBroch.pdf. Accessed 13 May 2018

Ordre des infirmières et infirmiers du Québec (2011) A new specialty in infection prevention and control, A first in Canada. The Journal 5:1

Ordre des infirmières et infirmiers du Québec (2016) Pratique infirmière avancée. Réflexion sur le rôle de l'infirmière clinicienne spécialisée (Advanced practice nursing: Reflections on the role of the clinical nurse specialist). Publication no. 8456. http://www.anfiide-gic-repasi.com/wp-content/uploads/2014/07/8456-reflexion-role-ics.pdf. Accessed 16 May 2016

Smith Higuchi KA, Hagen B, Brown S, Zieber M (2006) A new role for advanced practice nurses in Canada. J Gerontol Nurs 32(7):49–55

Statistics Canada (2017a) Population size and growth in Canada: key results from the 2016 census. http://www.statcan.gc.ca/daily-quotidien/170208/dq170208a-eng.htm?HPA=1. Accessed 14 May 2018

Statistics Canada (2017b) Population trends by age and sex: 2016 census of population. https://www12.statcan.gc.ca/census-recensement/2016/rt-td/as-eng.cfm. Accessed 14 May 2018

Stilos K, Daines P (2013) Exploring the leadership role of the clinical nurse specialist on an inpatient palliative care consulting team. Nurs Res 26(1):70–78

Veldorst AJ (n.d.) Practice patterns of clinical nurse specialists working with first nations and Inuit communities. Master's thesis. McMaster University, Hamilton, ON

Wikipedia (2018) Geography of Canada. http://en.wikipedia.org/wiki/Geography_of_Canada. Accessed 14 May 2018