

**NURSING WITHIN PRIMARY CARE SETTINGS IN ATLANTIC CANADA: A
RESEARCH PRACTICUM**

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Abstract

Background: Newfoundland and Labrador (NL) ranks the highest in Canada for prevalence of chronic diseases and risk factors for chronic disease. To address this health system issue, the Government of NL has committed to primary healthcare reform, which includes implementing interdisciplinary team-based models of primary care. Successful integration of Nurse Practitioners (NP), Registered Nurses (RN), and Licensed Practical Nurses (LPN) into primary care teams requires better understanding of their current roles in primary care, barriers and facilitators of role optimization, and nursing contributions to patient and system-level outcomes.

Purpose: The goal of this Master of Nursing (MN) research practicum project was to develop quantitative research skills by engaging in a variety of nursing research activities, which included examining and synthesizing the current state of knowledge related to nursing within primary care settings in Atlantic Canada, and engaging in knowledge translation activities.

Methods: A scoping review of literature related to nursing in primary care settings in Atlantic Canada was conducted using Joanna Briggs Institute (JBI) methodology. The review was guided by the Nursing Role Effectiveness Model. A scoping review manuscript was prepared and submitted to the Canadian Journal of Nursing Research. Abstracts were submitted for oral presentations to three conferences taking place during Spring and Summer 2017, including the Community Health Nurses of Canada Conference, Primary Healthcare Partnership Forum, and Eastern Health Nursing Education and Research Council Nursing Research Symposium. In addition, a reflection article of research experiences was submitted to the Canadian Nurse.

Results: A total of 20 articles met inclusion criteria and were reviewed. Approximately half of these articles discussed RNs and half discussed NPs in primary care settings. No literature focused on LPNs. Four studies were conducted in NL. Emphasis on interdisciplinary collaboration was evident across studies. The function of nurses within teams was found to be limited by institutional constraints and influence of other providers. Roles of RNs and NPs in primary care settings consisted primarily of chronic disease management, education, and health promotion. Primary care settings that incorporate nurses were associated with positive patient health outcomes, improved access to services, and high patient satisfaction.

Conclusions: Emerging literature demonstrates the effectiveness of NPs and RNs in primary care settings across Atlantic Canada. However, there is a need to clarify the roles of NPs, RNs, and LPNs with respect to chronic disease management, health promotion, and preventive care within these settings. There is considerable opportunity for future research to investigate specific attributes of nursing within primary care teams that result in high-quality patient and system-level outcomes.

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Chapter 1

Introduction and Research Practicum Objectives

1.1 Introduction

The population of Newfoundland and Labrador (NL) ranks the highest in Canada for chronic diseases (Government of NL, 2011) and modifiable risk factors for chronic disease, such as smoking, alcohol consumption, and inactivity (Government of NL, 2002). In response to the incidence and burden of chronic disease, the Government of NL (2002) incorporated an objective into its strategic health plan to improve chronic disease management. This led to the publication of a policy framework aimed at prevention and management of chronic diseases in the province (Government of NL, 2011). The framework outlined a plan to improve coordination of health services, citing interdisciplinary primary healthcare team models as a potential strategy (Government of NL, 2011). Team-based primary care models have been found to improve outcomes for individuals with chronic diseases and reduce the economic burden of illness (Aggarwal & Hutchison, 2012; Health Council of Canada, 2009).

Primary care refers to the level of healthcare at which clients access and enter the system; and at which practitioners provide care for the majority of health-related needs and engage in ongoing health service provision and coordination (Starfield, 1998). The Government of NL's (2015) Primary Health Care Framework emphasizes improving the province's primary care model by transitioning to an interdisciplinary team-based approach to primary care and improving interdisciplinary collaboration. Interdisciplinary primary care teams will involve collaboration between various healthcare providers, including nurses (Government of NL, 2015). A shift of focus toward team-based primary care models will rely on a variety of nursing services and a practice environment that

supports Nurse Practitioners (NP), Registered Nurses (RN), and Licensed Practical Nurses (LPN) to exercise their full scopes of practice.

Emerging evidence suggests that the presence of NPs, RNs, and LPNs in primary care settings is associated with positive outcomes for patients, organizations, and the greater healthcare system (Griffiths, Murrells, Maben, Jones, & Ashworth, 2010; Griffiths, Maben, & Murrells, 2011; Horrocks, Anderson, & Salisbury, 2002; Keleher et al., 2009; Laurant et al., 2005; Lukewich, Williamson, Edge, VanDenKerkhof, & Tranmer, 2016; Swan, Ferguson, Chang, Larson, & Smaldone, 2015). However, nurses' roles in primary care settings are not well understood (Lukewich, Edge, VanDenKerkhof, & Tranmer, 2014). As the NL healthcare system transitions to interdisciplinary team-based models of care, there is a need to explore and synthesize available information related to nursing in primary care settings. A comprehensive summary of available information will inform future discussions related to primary care models that incorporate nurses and provide direction for future research opportunities.

1.2 Research Practicum Objectives

The goal and objectives for this MN research practicum were developed in consultation with my academic supervisor, Dr. Julia Lukewich. The overall goal was to develop quantitative research skills by engaging in a variety of nursing research activities. The practicum objectives that were addressed to achieve the stated goal were:

1. To demonstrate ANP competencies, specifically through engagement in research, leadership, clinical, and consultation/collaboration activities.

2. To identify and synthesize existing literature to draw evidence-based conclusions that will enhance nursing practice.
3. To contribute to the body of nursing knowledge through dissemination of research findings as evidenced by submitting a manuscript for publication and participating in knowledge translation activities.
4. To exemplify the ability to receive and apply peer, colleague, and supervisor feedback on scholarly work as evidenced by critically revising draft submissions of written course components.

1.2 Overview of Research Practicum Activities

The goal and objectives of the MN research practicum were addressed by engaging in a variety of research and knowledge translation (KT) activities. During N6660 (Fall 2016), my research practicum activities focused on conducting a Joanna Briggs Institute (JBI) scoping review related to nursing within primary care settings in Atlantic Canada (Curnew & Lukewich, 2017). This research project involved developing a scoping review protocol, conducting the scoping review according to JBI methodology, and composing a draft of a manuscript for publication in an academic journal. The report of my scoping review, entitled “Nursing within Primary Care Settings in Atlantic Canada: A Scoping Review”, was prepared according to the author guidelines for the Canadian Journal of Nursing Research (CJNR). A copy of the manuscript (See Chapter 3) was submitted for peer-review and publication to CJNR on March 25, 2017.

During N6661 (Winter 2017), my research practicum activities were focused on finalizing and submitting the scoping review manuscript for publication, and engaging in

KT activities; namely, submitting abstracts for oral presentations at local, provincial, and national conferences. In addition, I wrote a reflection paper of the most significant lessons learned through my research experiences and submitted the paper for publication. The following report contains summaries of each of the research practicum activities outlined above.

Chapter 2

Scoping Review Protocol

A scoping review protocol was developed according to the Joanna Briggs Institute (JBI) Reviewers' Manual 2015. The written protocol, as submitted during N6660, is included in this chapter. Please note, some details of the scoping review methods evolved during the early stages of the review process. For example, the wording of the research question was revised for improved reader clarity. Therefore, some details contained in this chapter may vary slightly from following sections of the research practicum report.

2.1 Abstract

Newfoundland and Labrador (NL) ranks among the highest in Canada for chronic diseases. The provincial government has committed to improving chronic disease management through improved access to primary health care services and an interdisciplinary team model of primary care. There is compelling evidence indicating nurses in primary care settings contribute significantly to positive outcomes, particularly for individuals with chronic diseases. However, little is known about the current state of nursing resources in primary care in NL. The objective of this review is to explore and map existing knowledge related to nursing resources in primary care in NL and the Atlantic Provinces. JBI scoping review methodology will be used to explore published and unpublished literature. Articles will be independently reviewed by two reviewers. Data will be extracted using standardized JBI data extraction tools and charted in literature summary tables. Synthesized results will be presented as a narrative summary, using charts and tables as appropriate.

2.2 Reviewer Information

The first reviewer is Ms. Deanne R. Curnew, Master of Nursing student at Memorial University of Newfoundland and Nursing Instructor at the Centre for Nursing Studies. The second reviewer is Ms. Samantha Taylor, Bachelor of Nursing student at Memorial University. In the event a third reviewer is required, Dr. Julia Lukewich, Assistant Professor at Memorial University School of Nursing will enact this role.

2.3 Objective and Research Question

The objective of the review is to explore the current knowledge related to nursing resources in primary care settings across Atlantic Canadian provinces. This scoping review will examine and synthesize the published and unpublished literature concerning nursing in primary care settings in Atlantic Canada; to understand the nature of existing nursing resources, determine the extent to which nursing resources are currently being utilized, establish the value of primary care nursing to health and system outcomes, and identify gaps in the evidence to define research priorities in this field.

The guiding research question is: what is currently known about the state of nursing resources in primary care in the Atlantic Provinces?

2.4 Background

The population of NL ranks among the highest in Canada for chronic diseases (Government of NL, 2011) and modifiable risk factors for chronic disease, such as smoking, alcohol consumption, and inactivity (Government of NL, 2002). In response to the incidence and burden of chronic disease, the Government of NL (2002) incorporated an objective into its strategic health plan to improve chronic disease management. This led to the publication of a policy framework aimed at prevention and management of chronic diseases in the province (Government of NL, 2011). Individuals living with chronic diseases in NL access healthcare services primarily through family physicians (Government of NL, 2002). However, high rates of family physician turnover have created a barrier to access and lack of continuity of care by many individuals in NL, particularly those in rural areas (Mathews & Park, 2007; Mathews, Edwards, & Rourke, 2008). The framework outlined a commitment to streamline healthcare delivery through

coordination of health services, citing primary healthcare team models as a potential strategy (Government of NL, 2011). Primary care team models have been found to improve outcomes for individuals with chronic illness and reduce the economic burden of illness (Aggarwal & Hutchison, 2012; Health Council of Canada, 2009).

The terms *primary care* and *primary healthcare* are sometimes used interchangeably. However, their distinction is significant. Primary healthcare is the philosophy that health and healthcare should be person-centered and equitable across geographic and socioeconomic categories, particularly in terms of quality and accessibility (World Health Organization, 2008). Primary care refers to the level of healthcare at which clients access and enter the system, for coordination of a full range of health services (Aggarwal & Hutchison, 2012). The Government of NL's (2015) Primary Health Care Framework emphasizes improving the province's primary care model. This will require transitioning to an interdisciplinary team approach to primary care and improving interprofessional collaboration. Interdisciplinary primary care teams will involve collaboration between physicians and other healthcare providers, such as nurses (Government of NL, 2015). A shift of focus toward interdisciplinary primary care models will rely on a variety of nursing services and a practice environment that supports nurses to exercise their full scopes of practice.

In NL, there are three professional nursing regulatory designations: Licensed Practical Nurse (LPN), Registered Nurse (RN), and Nurse Practitioner (NP). LPNs have earned a college diploma and are responsible for caring for patients who are in stable conditions (College of Licensed Practical Nurses of NL, 2015). RNs have a broader scope

of practice than LPNs and care for patients with a wide range of health needs (Association of Registered Nurses of NL [ARNNL], 2006). Since 2000, all newly graduated RNs in NL are required to achieve a baccalaureate degree in nursing. However, many RNs who graduated before that time are practicing with a college diploma. NPs are advanced practice nurses who have completed a graduate or post-undergraduate NP program through a college or university. NPs have a wide scope of practice, including authority to diagnose conditions, prescribe medications, and order diagnostic tests (ARNNL, 2006; Canadian Nurses Association, 2008). Emerging evidence suggests that the presence of RNs, LPNs, and NPs in primary care settings is associated with positive outcomes for patients, organizations, and the greater healthcare system (Griffiths et al., 2010; Griffiths et al., 2011; Horrocks et al., 2002; Keleher et al., 2009; Laurant et al., 2005; Lukewich et al., 2016; Swan et al., 2015). As the NL healthcare system transitions to interprofessional models of care, there is a need to explore and synthesise available information related to nursing in primary care settings. Although nurses are essential to the interdisciplinary team, their role in the primary care setting is not well understood (Lukewich et al., 2014). A comprehensive summary of available information will inform decisions related to primary care models that incorporate nurses.

Higher levels of nurse staffing in primary care settings has been found to be positively associated with favourable clinical outcomes and higher-rated care, particularly for patients with chronic diseases (Griffiths et al., 2010; Griffiths et al., 2011, Lukewich et al., 2016). Furthermore, patients attended to by nurses in primary care settings received more teaching (Laurant et al., 2005; Swan et al., 2015) and reported higher levels of

satisfaction with care (Horrocks et al., 2002; Laurant et al., 2005) than those not seen by nurses. In some studies, findings have suggested nurses in primary care are equally or more effective in providing care traditionally provided by physicians (Keleher et al., 2009; Laurant et al., 2005; Swan et al., 2015). Health outcomes were found to be equal between patients seen by primary care NPs or in nurse-led primary care centres than those seen by physicians (Keleher et al., 2009; Laurant et al., 2005; Swan et al., 2015). However, there is evidence that nurse-led care is more cost-effective (Swan et al., 2015), thus, there is compelling potential for greater emphasis on primary care nursing services.

Given that emerging evidence supports the value of nurses in primary care, it is necessary to explore and synthesize currently available knowledge of primary care nursing in NL. Scoping review methodology (JBI, 2015) will be used to conduct this literature review. The focus of the scoping review is to explore the current body of knowledge related to nursing in primary care in NL. A preliminary review of related literature in the PubMed, JBI, and Cumulative Index to Nursing and Allied Health Literature (CINAHL) databases was completed. Findings suggested insufficient NL sources are available to formulate a comprehensive set of data. Since the same regulatory nursing designations (i.e., LPN, RN, NP) and similar healthcare services exist in New Brunswick (NB), Nova Scotia (NS), and Prince Edward Island (PEI), the focus of the review was expanded to include all Atlantic Provinces. The synthesis of available knowledge will provide direction for further inquiry related to nursing in primary care across NL and may inform decisions related to nursing resources and chronic disease care.

2.5 Conceptual Framework

The conceptual framework guiding the review is the Nursing Role Effectiveness Model (Irvine, Sidani, & McGillis Hall, 1998). The Nursing Role Effectiveness Model is “used to guide the assessment of nurses’ contribution to healthcare” (p. 110). The Nursing Role Effectiveness Model names three types of structural variables related to patient and system outcomes. Nurse structural variables directly reflect characteristics of the nurse, and include experience, education, knowledge, and skill. Organization structural variables are related to staffing patterns that affect nursing care, and include availability of nursing staff and nursing assignment patterns (i.e., nursing care models). The third type of structural variables is patient variables. These are demographic and healthcare access-related characteristics of the patient (Irvine et al., 1998).

In addition to structural variables, Irvine, Sidani, and McGillis Hall (1998) identified three nursing role categories: independent, dependent, and interdependent. These role categories are referred to as the nursing process variables. The independent nursing role encompasses responsibilities for which the nurse is solely accountable. These include the fundamental elements of the nursing process, such as implementation and evaluation of planned nursing interventions (Irvine et al., 1998). The nurse’s dependent role involves functions that require medical prescription (Irvine et al., 1998). An example is medication administration requiring a physician order. The interdependent role entails responsibilities dependent on the role of other healthcare providers or those for which other healthcare providers depend on the nurse (Irvine et al., 1998). Examples are referrals for allied health consultations and community-based discharge planning

arrangements.

The Nursing Role Effectiveness Model is appropriate to guide this scoping review, as the objective of the review is to examine knowledge related to nurses' contributions to healthcare in the primary care setting. The conclusions drawn from findings will inform further research related to the effectiveness of nurses' roles in facilitating positive patient and system outcomes, and help provide direction for policy and practice related to nursing in primary care. The definition of nursing resources used for this scoping review is derived from the Nursing Role Effectiveness Model. For the purposes of this review, nursing resources include structural and nursing process factors that affect the effectiveness of the nurse's role in influencing clinical and functional health outcomes, satisfaction, and cost (Irvine et al., 1998).

2.6 Methodology

2.6.1 Study Design

JBI (2015) scoping review methodology will be used to conduct this review. JBI (2015) methodology consists of a five-stage framework that includes identifying the research question; searching for relevant studies; selecting studies; charting the data; and collating, summarizing, and reporting the results. Scoping reviews are used when the objective of a literature review is to explore imprecise knowledge on a subject (Grant & Booth, 2009). This type of review is appropriate when the researcher aims to assess the size and scope of available research on a topic (Grant & Booth, 2009); identify key concepts and formulate operational or conceptual definitions; and map characteristics of the available knowledge on a particular area of research (Arskey & O'Malley, 2005; JBI,

2015). Scoping review methodology was chosen to address the objective of this study, as the aim of the literature review is specifically to explore the current state of knowledge on the subject and to synthesize the knowledge into a manageable set of data that can be used to inform further inquiry.

There are limitations to scoping review methodology. A scoping review does not require appraisal of study quality. Therefore, results cannot be assumed to be generalizable and should not be used alone to inform policy and practice (Arksey & O'Malley, 2005; Grant & Booth, 2009; JBI, 2015). Large volumes of data may need to be reviewed, which may pose difficulties in setting limits related to depth and breadth of data to be explored (Arksey & O'Malley, 2005). Furthermore, some data may be overlooked, as it may not be feasible or possible to retrieve and review all sources of information on the topic, particularly unpublished literature (JBI, 2015).

2.6.2 Inclusion criteria

All articles retrieved will be independently reviewed for relevance to the review objective by the first and second reviewers. Those articles that meet the following inclusion criteria will be considered relevant and selected for data extraction.

Participants. The scoping review will include studies, articles, and reports that pertain to any nursing regulatory designation recognized in NL (i.e., LPN, RN, NP) working in a primary care setting and/or as part of a primary care team.

Concept. As previously discussed, for the purposes of this review, nursing resources include Nursing Role Effectiveness Model (Irvine et al., 1998) structural and/or process factors that influence the effectiveness of the nurse's role in influencing clinical

and functional health outcomes, satisfaction, and cost.

Structure variables. Articles will be considered for inclusion if they are related to nursing or organizational structure (Irvine et al., 1998). Nurse structural variables will include: experience, education, knowledge, and skill. Organization structural variables will include: staffing variables (i.e., skill mix, staffing levels, nurse/patient ratios), levels of autonomy, and nursing care delivery models.

Nurse process variables. Articles that pertain to the functions of the nurse in independent, interdependent, and medical-related roles (Irvine et al., 1998) will be considered for inclusion.

Context. The scoping review will include studies that pertain to nursing resources in primary care settings in NL, NB, NS, and PEI. A primary care setting is any healthcare setting directly accessed by clients, in which practitioners are responsible for addressing the majority of the client's health-related needs and engage in ongoing health service provision (Aggarwal & Hutchison, 2012). The organization and setting of primary care teams in Canada varies significantly, based on region and population (Health Council of Canada, 2009). Therefore, any article pertaining to nursing resources as part of a primary care team will also be considered. Literature pertaining to acute care, long-term care, discharge/transition services, occupational health, and inpatient mental health or addictions services will be excluded. Preliminary literature review findings indicated that a comprehensive synthesized data set cannot be achieved if the review is limited to NL only. The other three Atlantic provinces will be included due to their similarities to NL in proximity, population distribution, nursing regulations, and healthcare services.

Types of studies. The review will include published and unpublished literature. Unpublished, or ‘grey’, literature may include, but not be limited to, expert opinion, discussion papers, position papers, costs analyses, and reports. Both quantitative and qualitative study designs will be considered for the review. Quantitative designs will consist of experimental and epidemiological study designs, including randomized controlled trials, non-randomized controlled trials, quasi-experiments, systematic reviews, before and after studies, prospective and retrospective cohort studies, case control studies, and analytical cross-sectional studies. Descriptive epidemiological study designs will also be considered, including case series, individual case reports, and descriptive cross-sectional studies. Qualitative designs including phenomenology, grounded theory, ethnography, action research, and feminist research will also be considered.

2.6.3 Search Strategy

The search strategy aims to find both published and unpublished studies. A three-step search strategy will be utilized in this review. An initial limited search of PubMed and CINAHL will be undertaken followed by analysis of the text words contained in titles and abstracts, and of the index terms used to describe articles. A second search using identified keywords and index terms will then be undertaken across all included databases. Thirdly, the reference list of all identified reports and articles will be searched for key studies, authors, and organizations. Only English language articles will be considered for inclusion in this review. There will be no limitation on dates of publication, as historical trends may be relevant to overall findings.

The databases to be searched include: PubMed, CINAHL, AMED, GoogleScholar, JBI Database, Cochrane Database, Sociological Abstracts, OT Seeker, and PEDro. Initial keywords to be used will be: nurs* AND primary care OR primary health care AND Newfoundland and Labrador OR New Brunswick OR Nova Scotia OR Prince Edward Island. The term *primary health care* will be included to ensure that articles in which the term is used in place of *primary care* will not be overlooked. The use of the term will be reviewed for relevance, and only those articles in which the intended definition matches that of *primary care* will be considered.

The search for unpublished literature will involve searches of the worldwide web, including Google search engine, relevant government websites (e.g., provincial ministries of health), and nursing or healthcare-related websites (e.g., Canadian Nurses Association, provincial regulatory colleges and associations). In addition, key sources identified from the review of reference lists will be explored. Initial primary keywords inputted to the search engine will be: nursing and primary care. The primary keywords will together be combined with each Newfoundland and Labrador, New Brunswick, Nova Scotia, and Prince Edward Island.

2.6.4 Assessment of Methodological Quality

As the purpose of the review is to explore the overall state of knowledge related to nursing resources in primary care settings in the Atlantic Provinces, methodological quality will not be a factor for inclusion in the scoping review. All relevant published and unpublished studies, reports, and analyses will be included. However, methodological quality will be assessed for the purpose of drawing conclusions about the credibility and

persuasiveness of current knowledge, and making recommendations for subsequent research, practice decisions, and policy-making. All articles will be reviewed by two independent reviewers for methodological validity and/or authenticity. Any disagreements between reviewers will be resolved through discussion, or with a third reviewer.

All studies selected for inclusion will be assessed by two independent reviewers for methodological validity using standardized critical appraisal instruments from JBI (2015). Quantitative papers will be assessed using the JBI Meta-Analysis of Statistics Assessment and Review Instrument (JBI-MAStARI). Qualitative papers will be assessed using the JBI Qualitative Assessment and Review Instrument (JBI-QARI). Economic papers selected for retrieval will be assessed using the JBI Analysis of Cost, Technology, and Utilization Assessment and Review Instrument (JBI-ACTUARI).

Textual articles selected for retrieval, including expert opinions and agency reports, will be assessed by two independent reviewers for authenticity prior to inclusion in the review using the JBI (2015) Narrative, Opinion, and Text Assessment and Review Instrument (JBI-NOTARI). Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer.

2.6.5 Data Collection

A Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram will be used to provide a detailed description of search results and the inclusion/exclusion process (JBI, 2015). The PRISMA diagram will indicate the total number of records identified, screened, and assessed for eligibility. The diagram will

also indicate the number of articles excluded at each stage, reasons for exclusion, and the final number of records selected for inclusion.

Data will be extracted from all articles deemed relevant for inclusion in the review using the associated standardized data extraction tools from JBI-MAStARI, JBI-QARI, JBI-NOTARI, and JBI-ACTUARI (JBI, 2015). Data will be organized into a literature summary table (See Figure 1). Reviewers will take an iterative approach to data charting, whereby the literature summary table may be continually updated as additional unforeseen useful data is identified. The data extracted will include:

- Author(s) and/or institution
- Year of publication
- Province of origin
- Aim/purpose
- Description of participants and/or sample
- Description of primary care setting (ex. location, population(s) served, services, model of care, funding structure)
- Methods
- Theoretical foundation
- Nursing resources studied/discussed
- Key findings, conclusions, implications, and/or recommendations

Figure 1: Literature Summary Table

Title, Author, Date, Purpose	Participants/ Sample and Setting	Design and Methods	Theoretical Foundations	Nursing Resource Variables	Key Findings, Conclusions, Implications

A trial of data extraction and charting will be conducted on two to three sources by both reviewers, independent of one another. Reviewers will then meet to determine whether their approach to data extraction and charting is consistent with the research objective and question (Arksey & O'Malley, 2005).

2.6.6 Data Synthesis

Considering the breadth of the scoping review objective and the likelihood that relevant studies will be heterogeneous in terms of methods, populations, and variables, meta-analysis of data is neither necessary nor feasible. Therefore, overall findings and conclusions will be assembled and categorized based on similarities to produce synthesized conclusions that can be used as a basis for evidence-based practice, policy-making, and further research. Findings will be reported as a narrative summary and presented using tables and figures as appropriate.

The collation, summarizing, and reporting strategy suggested by Arksey and O'Malley (2005) will guide data synthesis. The approach will be iterative and will be revisited during the extraction and synthesis process. First, results will be organized geographically, according to province. Second, results will be categorized according to Nursing Role Effectiveness Model variables. Data will be reported in the same or similar

manner.

Chapter 3

Scoping Review

This chapter includes the scoping review manuscript (Curnew & Lukewich, 2017), as submitted to the Canadian Journal of Nursing Research (CJNR). The manuscript was submitted for peer-review and publication on March 25, 2017.

3.1 Abstract

Background: To address the prevalence of chronic diseases in Newfoundland and Labrador, the province has committed to primary healthcare reform, including implementing interdisciplinary primary care (PC) teams. To inform discussions regarding integrating Nurse Practitioners (NP), Registered Nurses (RN), and Licensed Practical Nurses (LPN) into these teams, better understanding of their roles in primary care is needed. **Purpose:** A scoping review was conducted to examine and synthesize evidence related to nursing in PC settings across Atlantic Canada (Newfoundland and Labrador, New Brunswick, Nova Scotia, Prince Edward Island). **Methods:** Joanna Briggs Institute scoping review methodology was used. The Nursing Role Effectiveness Model guided the review. **Results:** Twenty articles met inclusion criteria. Roles of RNs and NPs in PC included chronic disease management, education, and health promotion. No literature focused on LPNs. Interdisciplinary collaboration was evident across studies. However, nurses' functions within teams were limited by institutional constraints and other providers. PC settings with nurses had positive clinical outcomes, improved access to services, and high patient satisfaction. **Conclusions:** The prevalence of nursing in PC throughout Atlantic Canada and how nurses' roles are enacted is unclear. There is opportunity for future inquiry into specific attributes of nursing and PC teams that result in positive patient and system outcomes.

Keywords: primary care, nurses, Newfoundland and Labrador, Nursing Role Effectiveness Model

3.2 Background and Purpose

Newfoundland and Labrador ranks among the highest in Canada for the prevalence of chronic diseases (Government of Newfoundland and Labrador, 2011) and modifiable risk factors for chronic diseases (Government of Newfoundland and Labrador, 2002). Individuals living with chronic diseases in Newfoundland and Labrador access healthcare services primarily through family physicians (Government of Newfoundland and Labrador, 2002). However, high rates of family physician turnover have created a barrier to access and lack of continuity of care for many individuals in the province, particularly in rural areas (Mathews & Park, 2007; Mathews, Edwards, & Rourke, 2008). In response to the prevalence and burden of chronic diseases, the Government of Newfoundland and Labrador (2011) published a policy framework aimed at preventing and managing chronic diseases in the province. The framework outlined a commitment to optimize health service delivery, citing primary healthcare team models as a potential strategy. Primary care (PC) teams have been found to improve outcomes for individuals with chronic diseases and reduce the economic burden of illness (Aggarwal & Hutchison, 2012; Health Council of Canada, 2009).

In Canada, there are three licensure categories for nurses; Nurse Practitioners (NPs), Registered Nurses (RNs), and Licensed Practical Nurses (LPNs) (known as Registered Practical Nurses in Ontario). Emerging evidence suggests nursing presence in PC is associated with positive outcomes for patients and the healthcare system. Higher levels of nurse staffing in PC settings is associated with favourable clinical outcomes and higher-rated care, particularly for patients with chronic diseases (Griffiths, Maben, & Murrells, 2011; Griffiths, Murrells, Maben, Jones, & Ashworth, 2010; Lukewich,

Williamson, Edge, VanDenKerkhof, &Tranmer, 2016). Furthermore, patients cared for by nurses in PC settings received more teaching (Laurant et al., 2005; Swan, Ferguson, Chang, Larson, & Smaldone, 2015) and reported higher satisfaction with care (Horrocks, Anderson, & Salisbury, 2002; Laurant et al., 2005) than those not seen by nurses. Health outcomes were found to be equal between patients seen by PC NPs or in nurse-led PC centres when compared to those seen by physicians (Keleher, Parker, Abdulwadud, & Francis, 2009; Laurant et al., 2005; Swan et al., 2015). However, there is evidence that nurse-led care is more cost-effective (Swan et al., 2015), which highlights potential for greater emphasis on PC nursing services to reduce healthcare costs.

As Canadian healthcare systems transition to interdisciplinary models of care, there is a need to explore and synthesize available information related to nursing in PC. Although nurses are essential to the interdisciplinary team, their role in PC settings is not well understood (Lukewich, Edge, VanDenKerkhof, & Tranmer, 2014; Martin-Misener et al., 2014). A comprehensive summary of available information is needed to inform decisions related to PC models that incorporate nurses, particularly within Newfoundland and Labrador where PC is currently largely provided by physicians.

The research question guiding this review was: what is the current state of knowledge of nursing roles and resources within PC settings in Atlantic Canada?

The Nursing Role Effectiveness Model guided the study. This model depicts a structure-process-outcome approach that can guide assessment of nursing contributions to healthcare (Irvine, Sidani, & McGillis Hall, 1998). Structural variables include characteristics of patients (e.g., age, physical condition), nurses (e.g., education,

designation, skill level), and organizations (e.g., staffing patterns, models of care) that purportedly affect nurses' ability to perform their role functions. The process component of the model includes nurses' functions categorized as independent, interdependent, and medical-related roles. According to the Nursing Role Effectiveness Model, structure and process variables influence patient and system outcomes, including physical and functional health outcomes, knowledge, satisfaction, and cost (Irvine et al., 1998).

3.3 Methods and Procedures

This study used the Joanna Briggs Institute (JBI) (2015) scoping review methodology. All articles retrieved were reviewed independently by two reviewers for relevance and inclusion in the review. As per JBI (2015) scoping review methodology, the quality of literature was not a factor in determining eligibility for inclusion. The review included published literature, including qualitative and quantitative primary research studies, reports, and discussion papers; and unpublished literature, including expert opinions, discussion papers, position papers, and reports. The scoping review included literature that pertained to NPs, RNs, or LPNs working in a PC setting and/or as part of a PC team in Newfoundland and Labrador, New Brunswick, Nova Scotia, or Prince Edward Island. A PC setting was defined as any healthcare setting directly accessed by clients, in which practitioners provide care for the majority of the client's health-related needs and engage in ongoing health service provision and coordination (Starfield, 1998). Literature pertaining to settings/services other than PC, such as acute care, long-term care, and emergency services were excluded. Articles were considered for inclusion if they were related to variables outlined within the Nursing Role Effectiveness

Model (Irvine et al., 1998). Only English language articles were considered eligible for review (See Appendix A).

3.4 Results

A summary of search results is included in Figure 1: PRISMA Diagram for Scoping Review (See Appendix B). A total of 20 articles were eligible for inclusion and were reviewed.

Included literature consisted of 11 primary research studies (Barrett et al., 2011; Chambers, Bruce-Lockhart, Black, Sampson, & Burke, 1977; Chambers & West, 1978; Goss Gilroy, 2001; Graham, Sketris, Burge, & Edwards, 2006; Lawson, Dicks, MacDonald, & Burge, 2012; Martin-Misener, Downe-Wamboldt, Cain, & Girouard, 2009; Martin-Misener, Reilly, & Vollman, 2010; Murphy, Martin-Misener, Cooke, & Sketris, 2009; Paterson, Duffett-Leger, & Cruttenden, 2009; Todd, Howlett, MacKay, & Lawson, 2007), three position papers (Agnew, 1974; Bristow et al., 1974; Faculty of Nursing University of New Brunswick [UNB], 1974), two feature columns (Jaimet, 2012; Magee, Hodder-Malloy, & Mason, 2011), and four reports (Health Council of Canada, 2009; Jones, 2015; Labrosse, 2016; Martin-Misener, McNab, Sketris, & Edwards, 2004) (See Appendix C).

Nova Scotia had the greatest amount of literature related to nursing within PC settings (n=11) compared to other Atlantic provinces, including four quantitative (Barrett et al., 2011; Graham et al., 2006; Lawson et al., 2012; Murphy et al., 2009) and three mixed methods (Martin-Misener et al., 2009; Martin-Misener et al., 2010; Todd et al., 2007) research studies, and four non-research articles (Bristow et al., 1974; Magee et al.,

2011; Health Council of Canada, 2009; Martin-Misener et al., 2004). Six articles were from Newfoundland and Labrador (Agnew, 1974; Barrett et al., 2011; Chambers & West, 1978; Chambers et al., 1977; Goss Gilroy, 2001; Health Council of Canada, 2009) and five articles were from New Brunswick (Faculty of Nursing UNB, 1974; Health Council of Canada, 2009; Jaimet, 2012; Jones, 2015; Paterson et al., 2009). New Brunswick was represented in only one primary research study, which was qualitative (Paterson et al., 2009), while PC nursing in Newfoundland and Labrador was studied in three randomized controlled trials (RCT) (Barrett et al., 2011; Chambers et al., 1977; Chambers & West, 1978) and a mixed methods study (Goss Gilroy, 2001). Prince Edward Island was represented in one report discussing the role of NPs in PC (Labrosse, 2016). In the RCT by Barrett et al. (2011) and the report by the Health Council of Canada (2009), more than one Atlantic province was examined.

3.4.1 Nurse Structural Variables in Primary Care Settings

The RN and NP designations were most represented in PC literature from Atlantic Canada. Nurses within the RN and NP designations were the focus in 10 and 11 articles, respectively. Specifically, the role of the RN as a family practice nurse was explored in five articles (Agnew, 1974; Chambers & West, 1978; Chambers et al., 1977; Magee et al., 2011; Todd et al., 2007). No articles focused on LPNs. However, LPNs were mentioned as part of a PC team in a case study of one clinic (Labrosse, 2016). In three articles, 'nurse' was not otherwise specified. There were no studies that explored the relationships between nursing designation or education-level on outcomes.

In early publications, there was emphasis on promoting baccalaureate education for RNs in the Atlantic provinces and expanding nursing curricula to include additional clinical skills (Agnew, 1974; Bristow et al., 1974). This enhanced knowledge and skill translated to an 'expanded nursing role' (Agnew, 1974; Bristow et al., 1974; Faculty of Nursing UNB, 1974) that became pivotal in PC in Atlantic Canada (Chambers & West, 1978; Chambers et al., 1977). However, the overall education-level of nurses in PC is unclear. A survey of a small sample of 41 participants by Todd and colleagues (2007) reported that 85% of family practice RNs in Nova Scotia had a diploma in nursing, while the remaining 15% had a baccalaureate degree. No such descriptive data were reported for NPs or LPNs, or for RNs working in other Atlantic provinces.

3.4.2 Organizational Structure: Models of Primary Care Delivery

Interdisciplinary collaboration took various forms in the literature. Nurse-led care in consultation with physicians and other professionals was identified in Newfoundland and Labrador and New Brunswick (Barrett et al., 2011; Chambers & West, 1978; Health Council of Canada, 2009; Paterson et al., 2009). Alternatively, NPs and physicians in Nova Scotia engaged in formal collaborative practice agreements (Graham et al., 2006; Lawson et al., 2012; Martin-Misener et al., 2004). An innovative NP-physician-paramedic model for providing PC to a remote location in Nova Scotia was examined in a longitudinal mixed method study by Martin-Misener et al. (2009). Findings from this study indicated this model reduced emergency room visits, improved patient satisfaction, and reduced healthcare costs over a three-year period.

Historically in Atlantic Canada, nurse autonomy was exercised almost exclusively in areas where no other PC provider was available (Agnew, 1974; Chambers et al., 1977). The expanded nursing role of the 1970s was expected to enhance nurse autonomy and oppose the hierarchical structure of healthcare (Bristow et al., 1974; Faculty of Nursing UNB, 1974). Nurses began to practice independently or in collaboration with physicians (Chambers & West, 1978; Chambers et al., 1977). PC practice environments have continued to evolve to promote nurse autonomy and nurse-led models of care (Barrett et al., 2011; Chambers & West, 1978; Chambers et al., 1977; Goss Gilroy, 2001; Jaimet, 2012; Paterson et al., 2009). Yet, placement of nurses in PC continues to be motivated by a need to improve access to PC practitioners, particularly in response to challenges with recruiting and retaining family physicians (Chambers et al., 1977; Martin-Misener et al., 2009; Goss Gilroy, 2001; Labrosse, 2016). Goss Gilroy (2001) reported NPs had no effect on recruitment and retention of other care providers in Newfoundland and Labrador, and that settings in which NPs reported practicing autonomously were primarily those without family physicians.

3.4.3 Nurse Process Variables: Nursing Roles in Primary Care

The reported role of nurses in PC principally involved managing chronic diseases (Barrett et al., 2011; Health Council of Canada, 2009; Jones, 2015, Magee et al., 2011), and providing education and counselling to patients (Jaimet, 2012; Jones, 2015; Health Council of Canada; Magee et al., 2011; Todd et al., 2007). In particular, risk factor modification (Barrett et al., 2011; Health Council of Canada, 2009; Jones, 2015, Magee et al., 2011) and promoting self-management (Barrett et al., 2011; Health Council of

Canada, 2009; Jones, 2015) were cited as aspects of nurses' roles in chronic disease management. Patient education and counselling roles included diabetes education (Jones, 2015), one-on-one smoking cessation counselling (Jaimet, 2012), behaviour modification (Magee et al., 2011), and general provision of health-related information (Magee et al., 2011; Todd et al., 2009). Other nursing roles included advocating for social justice for marginalized populations (Health Council of Canada, 2009; Paterson et al., 2009), facilitating clinician education (Jones, 2015), organizing health and fitness programs (Jaimet, 2012), and providing direct interventions, such as screening tests and medication administration (Martin-Misener et al., 2010; Todd et al., 2007).

With respect to NPs, literature described their role in diagnosing, treating, and managing chronic diseases, including diabetes, pulmonary disease, kidney disease, mental illness, and cardiovascular disease; and episodic illnesses, such as infections (Goss Gilroy, 2001; Graham et al., 2006; Labrosse, 2016; Lawson et al., 2012; Martin-Misener et al., 2009; Martin-Misener et al., 2004; Martin-Misener et al., 2010; Murphy et al., 2009). Prescribing and managing medications and monitoring clinical outcomes were also cited as part of the NP role (Goss Gilroy, 2001; Lawson et al., 2012; Martin-Misener et al., 2010).

Nurse role implementation and integration into PC settings was affected by various governmental, financial, and sociopolitical factors (Goss Gilroy, 2001; Martin-Misener et al., 2004; Paterson et al., 2009). Nursing roles were found to be responsive to the needs of populations and communities (Paterson et al., 2009). Based on qualitative data, strong governmental support, in the form of regulation, legislation, and funding

facilitated nurses' roles in practice (Goss Gilroy, 2001; Martin-Misener et al., 2004). Barriers to performing role functions included financial constraints (Paterson et al., 2009), lack of understanding and acceptance of roles (Goss Gilroy, 2001; Martin-Misener et al., 2004), and lack of substantial planning for the future direction of nurse roles (Goss Gilroy, 2001). In collaborative settings, lack of role clarity led to concerns about potential effects on the roles and responsibilities of other professionals. In particular, concerns from physicians regarding the scope of practice of NPs and the legal implications of collaborative practice were identified (Goss Gilroy, 2001; Martin-Misener et al., 2004). Although the NP role was meant to alleviate some of the pressure on family physicians, some physicians found the NP role disruptive to their practice (Goss Gilroy, 2001; Labrosse, 2016). In a survey conducted by Goss Gilroy (2001), physicians cited concerns such as increased complexity of caseload as NPs took on patients with less complicated conditions.

3.4.4 Patient and System Outcomes

Eleven articles discussed patient and system outcomes related to nurses within PC. In Atlantic Canada, PC settings that incorporate nurses have resulted in better (Chambers & West, 1978; Chambers et al., 1977; Graham et al., 2006; Jones, 2015; Lawson et al., 2012) or equal (Barrett et al., 2011; Chambers & West, 1978; Labrosse, 2016; Lawson et al., 2012) patient health outcomes when compared to settings that do not include nurses. In particular, clinical outcome measures for patients with chronic diseases were improved (Graham et al., 2006; Jones, 2015; Lawson et al., 2012) or unchanged (Barrett et al., 2011) with the addition of nurses when compared to usual care. Nurses in

PC settings are also associated with improved access to health services (Health Council of Canada, 2009; Labrosse, 2016; Magee et al., 2011; Martin-Misener et al., 2009) and high levels of patient satisfaction (Health Council of Canada, 2009; Jones, 2015; Labrosse, 2016; Martin-Misener et al., 2009). Reports suggested implementing interdisciplinary PC teams with nurses increased initial healthcare expenditures (Chambers et al., 1977; Labrosse, 2016; Martin-Misener et al., 2009; Murphy et al., 2009). Only one study examined costs longitudinally, and overall costs were found to decrease over a three-year period (Martin-Misener et al., 2009). Many of these studies identified reliance on chart abstraction of existing health records (Chambers et al., 1977; Graham et al, 2006; Labrosse, 2016; Lawson et al., 2012; Murphy et al. 2009) as a limitation to conducting research of this nature.

3.5 Discussion

Overall, there was limited evidence related to nursing within PC in Atlantic Canada. Much of the literature consisted of position papers and reports that did not provide new evidence, or did not clearly outline the sources and methods from which information was derived. Only 11 out of 20 articles reviewed were primary research studies. Of these, only three were experimental studies (Barrett et al., 2011; Chambers et al., 1977; Chambers & West, 1978), two of which were nearly 40 years old. The literature was well dispersed over three of the four Atlantic provinces. Prince Edward Island was considerably underrepresented in the literature. This may be due in part to the comparatively small population and geographic area of Prince Edward Island in relation to the other provinces. Also, it is noteworthy that Newfoundland and Labrador, New

Brunswick, and Nova Scotia have all released frameworks for or developed initiatives to improve PC using interdisciplinary healthcare teams that include nurses (Government of NB, n.d.; Government of NL, 2015; Martin-Misener et al., 2004), while Prince Edward Island has not. In addition to the Strengthening Primary Care Initiative, a provincial initiative aimed at reforming PC delivery using interdisciplinary healthcare teams across the province (Graham et al., 2006; Lawson et al., 2012; Martin-Misener et al., 2004), the large number of articles from Nova Scotia may be related to the existence of the Family Practice Nurses Association of Nova Scotia (a provincial affiliated group of the Canadian Family Practice Nurses Association), and the availability of a Family Practice Nursing Education Program offered through the Registered Nurses Professional Development Centre (Canadian Family Practice Nurses Association, 2016; Registered Nurses Professional Development Centre, n.d.).

Some articles discussed ‘nurses’ without specifying a designation. Future studies should attempt to be clear about designations when designing and reporting studies of nurses. Also, it is conceivable that LPNs may be among the cohort of nurses in PC in Atlantic Canada, as they are in other locations (Freund et al., 2015). However, the applicability of research findings to LPN practice is limited by the lack of LPN-specific data. There is a need for future research to establish the value of this group of nurses to PC, especially within Atlantic Canada.

Active involvement and understanding of nursing roles by stakeholders is essential to successful role implementation (Sangster-Gormley, Martin-Misener, Downe-Wamboldt, & DiCenso, 2011). The transition to collaborative practice teams in Atlantic

Canada has required extensive commitment from government, institutions, and professionals (Health Council of Canada, 2009; Martin-Misener et al., 2004; Martin-Misener et al., 2009), and much work remains to be done. Although outcomes are promising, there is resistance and perceived lack of support by some stakeholders concerning integration of nursing roles into PC teams. It is in the best interest of professionals, authorities, and the public to explore means of identifying and addressing issues of resistance (Sangster-Gormley et al., 2011). However, the literature did not indicate what, if any, strategies have been implemented to address this issue.

Consistent with other Canadian and international literature (Griffiths et al., 2010; Griffiths et al., 2011; Horrocks et al., 2002; Keleher et al., 2009; Laurant et al., 2005; Lukewich et al., 2016; Swan et al., 2015), the findings of studies included in the review indicated the presence of nurses in PC settings is associated with positive patient and system outcomes. However, researchers did not attempt to identify specific nursing resources and attributes of PC teams that contribute to outcomes. Incorporating a structure-process-outcome framework, such as the Nursing Role Effectiveness Model, into future studies would help clarify the nature of relationships between variables. Furthermore, there were only six published, peer-reviewed research studies examining the relationships between nursing and patient or system outcomes in PC settings. These points represent substantial gaps in evidence in this field and important opportunities for future research.

While the authors attempted to retrieve all available literature, it is possible that additional studies and articles exist that could further enhance our understanding of the use of nursing resources within PC settings in Atlantic Canada.

3.6 Conclusion

This scoping review has examined literature related to nursing roles and resources within PC settings in Atlantic Canada. Nurses are present and active in PC settings, particularly as members of collaborative teams. However, the extent to which nursing resources are being utilized remains unclear. Continued commitment by health professionals, health authorities, and provincial governments is needed to support optimization of nursing resource utilization in PC. For this to be accomplished, further inquiry is needed to enhance understanding of the value of nursing roles and resources in achieving desired patient and system outcomes. There is potential for greater understanding of the relationships between variables identified in this review using the Nursing Role Effectiveness Model in research frameworks.

Chapter 4

Research Experience and Knowledge Translation Report

The purpose of this chapter is to summarize the research experiences that I undertook during N6661. The chapter will include a summary of each research activity and a discussion of the key learning points from the overall research experience.

The Canadian Nurses Association (CNA) (2008) identifies generation, synthesis, and utilization of research evidence as a core advanced nursing practice (ANP) competency. Responsibilities of ANP include conducting research that benefits nursing practice and disseminating research findings (CNA, 2008). Prudent and ethical dissemination of research findings involves the complex process of knowledge translation (KT). KT is defined as “a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically sound application of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the health care system” (Canadian Institutes of Health Research [CIHR], 2015, p. 1). There are two methods of KT: integrated KT (iKT) and end-of-grant KT. An iKT plan involves directly engaging potential knowledge users in the entire research process, including developing the project purpose and methods. With end-of-grant KT, knowledge users are not engaged or are engaged to a lesser extent. Instead, the researcher develops a plan for disseminating findings to knowledge users (CIHR, 2015).

The goal of my Master of Nursing (MN) research practicum was to develop quantitative research skills by engaging in a variety of research activities, including evidence synthesis and dissemination. Practicum activities completed in N6660 (Fall 2016) focused on conducting a scoping review using Joanna Briggs Institute (JBI) (2015) methodology and drafting a manuscript to be submitted for publication. During N6661 (Winter 2017), my practicum activities focused on finalizing the manuscript and submitting it for review and publication in a peer-reviewed journal and engaging in research activities related to knowledge translation.

4.1 Summary of Scoping Review Project

In the Fall of 2016, I conducted a scoping review to examine and synthesize the current state of knowledge of nursing roles and resources within primary care settings in Atlantic Canada (Curnew & Lukewich, 2017) (see Chapter 3). The study was guided by the Nursing Role Effectiveness Model, which is a structure-process-outcome model for evaluating nurses' contributions to healthcare within their practice settings (Irvine, Sidani, & McGillis Hall, 1998). The model identifies three types of structural variables that purportedly influence the role functions of nurses: patient structure (e.g., demographic characteristics, physical and functional condition); nurse structure (e.g., education level, experience, skill); and organizational structure (e.g., staffing, models of nursing care, levels of nurse autonomy). In turn, nurses' roles influence outcomes for patients and the healthcare system. The variables of interest for the scoping review were nurse and organizational structure, nurse roles, and patient and system outcomes.

Findings from the review indicated that there is opportunity for further inquiry into the relationships proposed in the Nursing Role Effectiveness Model (Irvine et al., 1998) within primary care settings in Atlantic Canada (Curnew & Lukewich, 2017). While Nurse Practitioners (NP) and Registered Nurses (RN) were reported to be practicing in primary care settings, Licensed Practical Nurses (LPN) were not discussed. Furthermore, the role of NPs and RNs in primary care was unclear. The primary reported roles included chronic disease management and education for both RNs and NPs; as well as diagnosing and treating chronic and episodic illnesses for NPs. Primary care nursing was found to be associated with positive patient and system outcomes, including

improved or equal clinical outcomes, improved access to health services, high patient satisfaction, and decreased costs over time when compared to physician-led care or settings that did not incorporate nurses. However, in order to appropriately inform decisions about policy and practice, there is a need to clarify concepts and further evaluate the relationships between variables (Curnew & Lukewich, 2017).

The KT approach for this project models the end-of-grant KT approach. This is the preferred approach for research that is not intended for immediate application and primarily relevant to researchers and scholars who will potentially contribute further to the body of knowledge (CIHR, 2015). End-of-grant KT activities are aimed at raising awareness of findings and promoting further action. Strategies, such as journal publications and conference presentations, are selected based on who the knowledge users are expected to be (CIHR, 2015). The anticipated knowledge users of the findings from my scoping review are nurses and other health professionals working within primary care settings across Newfoundland and Labrador, and throughout Canada; advisory groups related to interdisciplinary primary care teams (e.g., Team-Based Models of Care Working Group, Department of Health and Community Services, Government of Newfoundland and Labrador [NL]); and decision-makers for healthcare systems at the provincial/territorial and national levels. Furthermore, there is potential that the findings could be applicable to interested stakeholders internationally. The KT strategies are aimed at delivering knowledge to these groups.

4.2 Knowledge Translation Activities

The methods of KT selected for this project included a journal publication and submission of abstracts for three oral conference presentations. In addition, I chose to submit a reflection of my practicum experiences to the Canadian Nurse, as a method of sharing important aspects of the process with future and novice researchers. To support travel and registration for conferences, I applied for funding through various sources.

In the following section, I provide a summary of each research activity outlined above. As the scoping review was an activity completed during N6660, the following discussion focuses on the process of preparing and finalizing the manuscript for peer-review and publication, which occurred during N6661.

4.2.1 Scoping Review Manuscript

The scoping review, entitled “Nursing within Primary Care Settings in Atlantic Canada”, was prepared according to the author guidelines for the Canadian Journal of Nursing Research (CJNR). I chose to submit to CJNR because the findings from the scoping review are primarily relevant within the context of Canadian healthcare systems, particularly in Atlantic Canada. Furthermore, the purpose of the scoping review aligned with the aim of the journal, which includes highlighting contributions of nurses to health service delivery and identifying opportunities for further inquiry (Sage Publications, 2017). The author guidelines for systematic review submissions included: a 200-word scientific abstract; a maximum of 12 pages of main text; and a maximum of three attachments, including tables and figures.

Prior to submission, my supervisor, Dr. Julia Lukewich, and the Associate Dean of Graduate Studies (School of Nursing), Dr. Donna Moralejo, arranged an opportunity

for me to receive feedback from students enrolled in the PhD in Nursing program. I submitted a draft of the manuscript to the class for their review, and attended a PhD seminar during which the students and faculty provided peer-review (e.g., asked questions and offered feedback for improving the manuscript). The purpose of this experience was to simulate the process of journal submission peer-review, as well as to provide an opportunity to enhance the quality of the manuscript by applying constructive feedback received during the seminar.

A number of constructive points were made during the seminar, many of which were incorporated into the manuscript prior to submission. It was noted that the Nursing Role Effectiveness Model (Irvine et al., 1998) was well explained in the background section, but was not clearly threaded throughout the results and discussion sections. Consequently, I renamed the headings throughout the results section to explicitly communicate how findings were organized according to structure, process, and outcome variables of the model. I also added a statement to the discussion section, highlighting the opportunity for further evaluation of relationships between variables identified in the scoping review using the Nursing Role Effectiveness Model. In addition, reviewers suggested the length of the manuscript could be reduced by modifying the description of the study purpose and search strategy. In response, I removed the original description of the study purpose and replaced it with the research question. I also removed the list of included databases and search terms from the body of the paper and added this information to a table. It was not feasible or necessary to incorporate all suggestions. For example, several reviewers suggested including an image of the Nursing Role

Effectiveness Model for reader convenience and clarity. Although this was a helpful suggestion, it would have resulted in exceeding the maximum number of attachments allowed by CJNR. Thus, the image was not added.

The PhD seminar peer-review experience was the first time I shared the scoping review with someone other than Dr. Lukewich. It was a valuable opportunity to receive and respond to feedback. By incorporating feedback from peers with a variety of perspectives and research experience, I was more confident in the final manuscript. As peer-review is an essential component of research integrity, participating in this experience was important to my introduction to the overall research experience. The scoping review manuscript was originally submitted to CJNR for publication on March 5, 2017. However, following preliminary review, the editors requested the length of the manuscript be reduced and the paper resubmitted. The manuscript was revised as requested and resubmitted on March 25, 2017.

4.2.2 Conference Presentations

I have prepared abstracts for oral presentations to three conferences: the Nursing Education and Research Council (NERC) Annual Nursing Research Symposium, Primary Healthcare Partnership Forum (PriFor), and the Community Health Nurses of Canada (CHNC) Conference. Each of these conferences were chosen because their goals and objectives aligned with the purpose of the scoping review, and their target audiences include those expected to utilize and benefit from the findings, such as primary care researchers and practitioners.

Nursing Education and Research Council Research Symposium 2017. The NERC 12th Annual Nursing Research Symposium is a local conference hosted by Eastern Health NERC. It will be held in St. John's, NL on May 11, 2017. The conference is open to all NPs, RNs, and LPNs practicing within or affiliated with Eastern Health. Abstracts are welcomed from any nurse completing a project that involves applying evidence in practice, using research to question or evaluate current practices, or using innovative methods in education (Eastern Health NERC, 2017). The purpose of the scoping review most closely aligns with the criterion of questioning practice with research; namely, questioning current models of primary care delivery and role functions of nurses within primary care settings. Moreover, I chose to submit an abstract to this conference because the target audience includes nurses who are practicing within the NL healthcare system, including those working in primary care settings, research, and professional practice consultation (Eastern Health NERC, 2017). Conference participants are expected to be users of the findings, as well as potential contributors to the evidence that informed the study. I submitted an abstract for a 20-minute oral presentation to NERC on March 14, 2017 (See Appendix D). On March 27, 2017, I was notified that the abstract was accepted.

The Primary Healthcare Partnership Forum 2017. PriFor is an annual conference hosted by Memorial University Faculty of Medicine. It will be held in St. John's, NL from June 1-2, 2017. The conference is intended for all health professionals working within primary healthcare, including nurses, administrators, policy-makers, and researchers (Memorial University of Newfoundland, 2017). PriFor is a primary

healthcare conference in NL, and attracts a variety of professionals to whom my scoping review findings would be relevant. For this reason, I chose to submit an abstract for an oral presentation. I prepared an abstract according to the submission guidelines and submitted it on March 23, 2017 (See Appendix E). As the call for abstracts is open until April 1, 2017, I do not expect to receive notification from conference administrators until after N6661 is complete.

Community Health Nurses of Canada Conference 2017. The CHNC Conference is an annual national conference that will take place in Niagara Falls, Ontario from June 20-22, 2017. This year, the theme of the conference is “Blueprint for Action: Building the Future” (CHNC, 2017). The theme is focused around enhancing healthcare delivery in Canada, and subthemes include *health system transformation*. Attendance is made up of community health nurses from all Canadian provinces and territories, who are working in a variety of settings, including direct clinical practice, administration, policy, and research (CHNC, 2017).

The scoping review is relevant to the CHNC Conference, as my target audience includes nurses practicing in community primary care settings, and those involved in administration, policy, and research. I chose to submit an abstract to the conference under the subtheme of *health system transformation*. The scoping review was conducted in response to a need to transform primary care delivery in NL (Government of NL, 2002; 2011) and the Government of NL’s plan to reform primary care delivery by implementing interdisciplinary primary care teams that include nurses (Government of NL, 2015). The

findings are expected to inform future discussions about primary care delivery in NL and other Atlantic provinces, and future studies related to nursing in primary care settings.

I prepared an abstract for an oral presentation according to the CHNC guidelines and submitted it on January 13, 2017 (See Appendix F). I received notification on February 26, 2017 that the abstract was accepted for a 13-minute oral presentation. I have accepted the invitation to present and will be presenting on June 22, 2017.

4.2.3 Funding

There will be expenses incurred by each of the conferences to which I have applied. Costs will include registration fees, air fare, accommodations, and meals. To facilitate my participation, I applied for funding from a number of sources. I have received three awards, and am waiting for notice of decision about the status of one application. The names and amounts of successful and pending awards are as follows:

- Eastern Health Health Care Foundation Scholarship

Amount: \$2000.00

Received: December 20, 2016

- Ruby Dewling Memorial Award in Nursing

Amount: \$656.00

Received: March 7, 2017

- St. John's Home Care Scholarship for Excellence in Community Health Nursing

Amount: \$1275.00

Received: March 7, 2017

- Canadian Institutes for Health Research Travel Awards – Institute Community Support (CIHR-ICS)

Amount: \$1500.00

Submitted: January 24, 2017; decision pending

The first three awards listed were awarded primarily on the basis of academic merit. While the application processes were valuable experiences, they did not reflect the level of preparation and complexity required for research project funding. The CIHR-ICS Travel Award application process was similar to the process required for research grant proposals. In my future research endeavors, I anticipate I will prepare additional travel and research funding proposals for CIHR and other funding organizations. For that reason, applying for the CIHR-ICS award was a particularly valuable research experience.

If awarded, the CIHR-ICS Travel Award will be used to fund my travel to the CHNC Conference. The award application was prepared and submitted via ResearchNet, which is an online research network that facilitates access to funding proposals by granting agencies and peer-reviewers (Government of Canada, 2017). The application required preparation and submission of a Canadian Common Curriculum Vitae (CCV). I will continue to build upon my existing CCV and use it for future funding opportunities. The application process involved rationalizing my request for funding by detailing how my research project aligned with the research objectives of CIHR and the aims of the CHNC Conference, and providing a budget of conference-related expenses. Supporting documents were required for submission, including a sponsorship form from my

academic supervisor and a signed routing slip from Memorial University Research Grant and Contract Services (RGCS), indicating the application has undergone institutional review. The application package was submitted on January 24, 2017 (notice of decision is pending).

4.2.4 Canadian Nurse Reflection Article

The Canadian Nurse invites RNs and nursing students throughout Canada to submit reflection articles highlighting important personal or professional learning experiences (Canadian Nurse, 2017). I chose to share a reflection on my experiences as a novice researcher (See Appendix G). In the article, I reflected on the aspects of the research experience that have been most helpful in facilitating my transition from consumer to producer of research. I described the appropriateness of using the JBI scoping review methodology when leading a research project for the first time. I also included a reflection on my experience of coming to fully appreciate the professional and ethical responsibility of delivering research evidence to knowledge users, through publication and conference presentations. Lastly, I reflected on the importance of exercising good leadership skills by collaborating with other professionals; namely, I recounted the experience of receiving and incorporating feedback from PhD seminar participants, many of whom were experienced researchers and scholars. The process of reflection was very important to me. It caused me to actively contemplate what valuable lessons I had learned from the MN research practicum. Most importantly, it compelled me to consider what effect the practicum would have on my decision to pursue a future in nursing research. In addition, this experience was valuable in that it allowed me the

opportunity to experience preparing and submitting a piece of non-research writing for publication. The reflection article was submitted to the Canadian Nurse on March 20, 2017.

4.3 Key Learning

I have learned many important lessons about nursing research through the completion of N6661. The key learning gained throughout this course will be applied to my future research experiences.

4.3.1 Diffusion and Dissemination Approaches

Prior to enrolling in the MN research practicum, I was not clear about the difference between diffusion and dissemination of research. Diffusion refers to the process of communicating research knowledge through mechanisms that require minimal engagement with the target audience (CIHR, 2015). Diffused knowledge is usually accessed by knowledge users who actively seek out the information themselves. Journal publication is an example of knowledge diffusion. In contrast, dissemination involves delivering knowledge in a manner that is tailored to the anticipated knowledge users (CIHR, 2015). Conference presentations are an example of knowledge dissemination, as conferences attract individuals with a specific set of interests and area of expertise. The conference presenter prepares his or her presentation specifically with the conference attendees in mind, and delivers the information to the knowledge users.

I have had the opportunity to engage in both diffusion (manuscript submission) and dissemination (conference abstract submissions) throughout N6661. My initial plan was to submit the scoping review manuscript to CJNR and submit an abstract for an oral

presentation to PriFor. However, I have now submitted abstracts to three conferences and will continue to seek out other KT activities in the future. The objective of health research is to enhance health services and health systems, thereby improving the health of individuals and populations (Government of Canada, 2012). Therefore, it is the ethical duty of health researchers to ensure evidence is accessible to knowledge users by actively engaging in KT. Throughout N6661, I have come to better understand and value this responsibility. I have learned the importance of selecting KT strategies that will most appropriately deliver research findings to the knowledge users. I will continue to seek out conferences whose themes, objectives, and target audiences align with those of my project.

Although an approach resembling end-of-grant KT was appropriate for this research project, I would like to employ an iKT approach in future projects. Any future studies pertaining to the relationships between nursing variables and patient or system outcomes would benefit from a high degree of knowledge user engagement in the research process. For this reason, I plan to pursue training opportunities available through NL's Support for People and Patient-Oriented Research and Trials (www.nlsupport.ca, n.d.).

4.3.2 Formatting for Publication

I found it challenging to prepare the scoping review abstract and manuscript according to the CJNR author guidelines. The CJNR guidelines dictated that abstracts must be 200 words or less and that manuscripts of systematic reviews must not exceed 12 pages. The abstract I had prepared for the CHNC Conference was nearly 300 words, and

at the time of the PhD seminar, the manuscript was 13.5 pages in length. This resulted in having to make major revisions to meet the journal requirements. In the future, I would exercise more careful planning in outlining the content of the paper. I would assign page or word limits to each section to avoid exceeding the page limit allowed by the journal.

At the beginning of the project, I felt inclined to submit to a Canadian nursing journal. For that reason, I did not compare the author guidelines for many journals before deciding to format for CJNR. I have since learned the formatting guidelines for CJNR are more restrictive than many other journals. As a novice author, it may have been appropriate for me to consider my limited experience and attempt to select a journal with less restrictive guidelines. When preparing future manuscripts, in addition to the scope and aim of journals, I will always be sure to consider the appropriateness and feasibility of formatting guidelines.

4.3.3 Canadian Institutes of Health Research Funding Process

The process of applying for funding through CIHR revealed many important lessons I will apply to future funding opportunities. I was not prepared for the time commitment required to complete the CCV, and other components of the award application. Furthermore, I had not sufficiently familiarized myself with the application package and institutional guidelines. Therefore, I overlooked important deadlines, including the deadline for institutional review by RGCS within Memorial University. Prior to this deadline, I was supposed to have fully completed my CIHR-ICS Travel Award application and have submitted it to the RGCS office for institutional approval and signature. As a result, Dr. Lukewich and I had to seek special permission from Dr.

Karen Parsons (Associate Dean of Research, School of Nursing) and RGCS to submit the application for institutional approval after the deadline. From this experience, I gained valuable insight into the level of preparation and commitment required when applying for funding through CIHR. When completing this process for future projects, I will be sure to carefully review the funding application as soon as I decide to apply. I will also seek help from my institution and experienced researchers early in the process, to confirm my understanding of regulations for the application process.

4.3.4 Unexpected Events

The completed research activities for N6661 were adapted from the original practicum outline. The initial research experience plan involved completing database work (e.g., data entry, coding, descriptive analysis) for a quantitative research project by Dr. Lukewich, examining the effects of nursing in primary care settings on outcomes for individuals with type II diabetes. Late in the fall semester, it became apparent the data would not be ready in time for me to complete this activity. We then explored the possibility of database work for another project, studying predictors of success on the NCLEX-RN for nursing graduates. However, this dataset was also unavailable in time for me to complete the activity. As a result, Dr. Lukewich and I incorporated additional research experiences, including the PhD seminar, additional KT activities, and the Canadian Nurse reflection article into the research practicum experience. This experience was indicative of the unpredictability of circumstances involved in completing a research project. It clarified the necessity of implementing a clear project timeline while including allowances for interruptions. I realized the importance of optimizing the use of time and

resources, and planning research activities in manner that allows projects to continue despite the occurrence of unexpected disruptions.

4.4 Conclusion

The purpose of MN practicum activities during N6661 was to gain experience in a variety of research activities, including KT. Throughout the course, I engaged in knowledge diffusion and dissemination activities by submitting a manuscript for publication to CJNR and submitting abstracts for oral presentations at three conferences. I had the opportunity to receive and incorporate feedback from peers and faculty into a scoping review manuscript for publication, which resembled the process of peer-review. With respect to KT strategies, I applied for and obtained funding from several sources, including three academic scholarships and a travel award available through CIHR. Although I will not receive notification concerning the CIHR-ICS Travel Award until after March 27, 2017, the process of applying for this award was especially valuable, as it replicated the process of submitting a research grant proposal.

Throughout this course, I have learned valuable lessons about various aspects of the research process. Writing a reflection article for the Canadian Nurse served to consolidate the learning process. Through the process of reflection, I had many realizations about which aspects of this experience were most valuable to my future career in research. As a result of completing research activities throughout N6661, I am much better prepared to embrace future research opportunities. I will continue to pursue further learning opportunities and draw upon the knowledge and expertise of experienced researchers as I establish my role as a nursing researcher.

Chapter 5 Advanced Nursing Practice Competencies

Throughout my Master of Nursing (MN) research practicum, I have developed and demonstrated each of the four advanced nursing practice (ANP) competencies outlined by Canadian Nurses Association (CNA) (2008). These competencies include: clinical, research, leadership, and consultation and collaboration competencies. The purpose of this chapter is to describe the means by which I demonstrated each of the four ANP competencies.

5.1 Clinical

ANP clinical competency involves delivering comprehensive, specialized nursing care by integrating clinical experience with thorough comprehension of nursing theory and research (CNA, 2008). In ANP, a nurse uses this integration of knowledge and experience to “identify and assess trends or patterns that have health implications for individuals, families, groups, or communities” (p. 23) and to “generate or incorporate new nursing knowledge and develop new standards of care, programs and policies” (p. 23).

I indirectly developed clinical competencies through the completion of a scoping review which identified the nature and extent of nursing role and resource utilization in primary care settings across Atlantic Canada. The results of the scoping review identified trends within primary care settings that have implications for individuals across Atlantic Canada. Notably, nurses within primary care settings were associated with positive clinical outcomes, especially for individuals with chronic diseases. However, their roles within their practice settings are unclear. Specifically, the review identified that advanced practice nurses (e.g., Nurse Practitioners) are prominent within primary care, but there are constraints on the extent to which their roles are being fully exercised. Although much more work will need to be completed before actions can be developed around these findings, the intention of this project was ultimately to inform the direction of policies and practices that will result in the optimization of nursing practice within primary care settings.

5.2 Research

Knowledge generation, synthesis, and utilization are foundations of ANP (CNA, 2008). My MN research practicum was a formal introduction to conducting nursing research. I had the opportunity to employ Joanna Briggs Institute (JBI) scoping review methodology to examine and synthesize literature to generate conclusions about the role of nurses in primary care in Atlantic Canada. Conducting a scoping review using JBI methodology involved developing a review protocol in consultation with Dr. Julia Lukewich (my academic supervisor) and Ms. Michelle Swab (Public Services Librarian, Memorial University Health Sciences Library) and collaborating closely with a research assistant. Throughout the research practicum, I have engaged in ongoing knowledge translation (KT) activities, including submitting my scoping review manuscript to a nursing journal and submitting abstracts to local, provincial, and national conferences. The anticipated outcome of my research and KT activities is that the findings from the scoping review will contribute to enhancing nursing practice and the healthcare system within Newfoundland and Labrador (NL). I expect the findings to guide further data generation as the results are used to inform future studies related to primary care nursing in Atlantic Canada. Furthermore, the project findings will contribute to primary care reform initiatives pertaining to the development of interdisciplinary team-based models of care that include nurses.

5.3 Leadership

ANP involves acting as a leader within one's practice setting or organization by advocating for changes that improve care delivery and health service policy to promote

optimum outcomes for individuals and populations (CNA, 2008). I developed this competency by serving as the leader of the scoping review study. I was responsible for the successful completion of the study and dissemination of the findings. As team leader, I provided direction and/or mentorship to other members of the team. For example, prior to initiating the review phase, I ensured the research assistant, Ms. Samantha Taylor, was adequately equipped to fulfill her role as second reviewer. I provided her with literature that would support her understanding of the project methods (i.e., JBI Reviewer's Manual, scoping review protocol) and the Nursing Role Effectiveness Model, and met with her to discuss her understanding of the project. In addition, I was responsible for deciding the direction and timeline of project activities and ensuring timelines were met. This was especially important when reviewing articles for eligibility in the scoping review. I had to be diligent about setting and enforcing deadlines for selecting articles, to ensure the second reviewer and I were operating at the same pace and allowing sufficient time to discuss and resolve any conflicts.

The scoping review elucidated several gaps in the literature concerning nursing within primary care, as well as opportunities for further inquiry in this field. Part of my role as project leader involves ensuring the findings are disseminated and applied in future studies and decisions made by key stakeholders. Following the completion of the MN program, I will continue to take a leadership role in KT strategies, including publication, conference presentations, and networking with stakeholders in the field, to share study findings. This will require continued effort to identify and pursue KT

activities. Furthermore, I plan to lead future research projects related to nursing in primary care, notably by pursuing PhD studies in this field.

5.4 Consultation and Collaboration

According to CNA (2008), ANP requires effective professional and intersectoral collaboration at any organizational level. The success of my research project relied on effective collaboration with research team members. As the project leader, I was responsible for providing direction to a research assistant as we worked together to review articles. An important part of this collaborative relationship was clear, consistent communication of mutual expectations; and conflict resolution related to disagreements about which articles should be excluded from the review. Dr. Lukewich and I engaged in mutual decision-making regarding the requirements of the practicum project, and associated timelines. I had to consult with her frequently to draw upon her research knowledge and experience. I also consulted Ms. Michelle Swab (Public Services Librarian, Health Sciences Library) for her professional guidance to develop and implement the scoping review protocol. The expertise of Dr. Lukewich and Ms. Swab was instrumental in carrying out the project.

In addition to the research team, I collaborated with Dr. Karen Parsons (Associate Dean of Research, School of Nursing) and faculty and staff from Research Grant and Contract Services (RGCS) to prepare and submit an application for funding from the Canadian Institutes of Health Research (CIHR). These individuals reviewed, revised, and approved my application, provided required signatures for submission, and offered

guidance for future funding applications. Lessons learned from this collaborative experience will be valuable to my future research endeavors.

As I continue to engage in KT activities beyond the completion of the MN practicum, I will have the opportunity to develop partnerships with other leaders in practice, research, policy, and administration. It is my hope that I can collaborate with other individuals and groups across various sectors to help facilitate further discussion and inquiry into nursing within primary care across NL.

Chapter 6 Future Directions and Conclusion

Following completion of the Master of Nursing (MN) research practicum, there are a few clear directions for this research project. Specifically, findings will be further disseminated at conferences, the manuscript will be revised as needed to ensure it is published in a peer-reviewed journal, and additional studies will be performed related to nursing in primary care across Newfoundland and Labrador (NL). The next steps and overall conclusions for the research practicum are described in this chapter.

6.1 Conference Presentations

I plan to present at three conferences over the next several months. I will deliver a 20-minute oral presentation of the scoping review at the Eastern Health Nursing Education and Research Council (NERC) Annual Research Symposium on May 11, 2017. At this conference, I will be presenting to Nurse Practitioners (NP), Registered Nurses (RN), and Licensed Practical Nurses (LPN) practicing or affiliated with Eastern Health. I will also deliver a 13-minute oral presentation at the Community Health Nurses of Canada (CHNC) Annual Conference in Niagara Falls on June 22, 2017. The audience for the presentation will consist of community health nurses across Canada, including those working in primary care settings, as well as key stakeholders interested in primary care nursing in Canada (e.g., representatives from Canadian Nurses Association [CNA] and Canadian Family Practice Nurses Association). In addition, I have submitted an abstract to the Primary Healthcare Partnership Forum (PriFor) (anticipated notice of decision: May, 2017).

6.2 Revision of Scoping Review Manuscript

My scoping review manuscript was originally submitted to the Canadian Journal of Nursing Research (CJNR) for publication on March 5, 2017. However, following preliminary review, the editors requested the length of the manuscript be reduced and the paper resubmitted. The manuscript was revised as requested and resubmitted on March 25, 2017. The manuscript is currently awaiting peer-review. The next steps will be to incorporate suggested revisions, write a response to the peer-reviewers, and await notice

of acceptance for publication. If the manuscript is not accepted to the CJNR, it will be re-submitted to another journal for review and publication.

6.2 Future Research

There is considerable opportunity for further inquiry related to nursing in primary care settings, particularly in NL (Curnew & Lukewich, 2017). First, there is a clear need to examine the roles of nurses within each nursing regulatory designation (i.e., NP, RN, LPN) in primary care practices. In addition, further research is required to examine how the specific attributes of nurses and their roles in primary care settings impact patient and system-level outcomes. The findings from the scoping review are currently being used to inform a study led by Dr. Julia Lukewich, examining the roles of nurses in primary care settings across NL and their impact on clinical outcomes (e.g., hemoglobin A1C levels) for individuals with type II diabetes.

6.3 Conclusion

The overall goal and objectives of this MN research practicum have been met. I successfully led and completed a scoping review of nursing within primary care settings in Atlantic Canada, and have begun to contribute to the body of nursing knowledge through various knowledge translation activities. Throughout the practicum, I have exemplified the ability to apply constructive feedback from others into my written work, including my course submissions, scoping review manuscript, funding applications, and conference abstract submissions. Through engaging in each of these experiences, I have successfully demonstrated the CNA (2008) competencies for advanced nursing practice: clinical, research, leadership, and consultation and collaboration.

Successful integration of NPs, RNs, and LPNs into primary care teams requires better understanding of their current roles within primary care; barriers and facilitators of role optimization; and contributions of nurses to patient and system-level outcomes. Emerging literature demonstrates the effectiveness of NPs and RNs in primary care settings across Atlantic Canada. Findings from the scoping review revealed that NPs and RNs are participating in chronic disease management, education, and health promotion. Primary care settings that incorporate nurses were associated with positive patient health outcomes, improved access to services, and high patient satisfaction. However, there is a need to clarify the roles of NPs, RNs, and LPNs with respect to chronic disease management, health promotion, and preventive care within these settings, particularly in NL. Furthermore, there is considerable opportunity for future research to investigate specific attributes of nursing within primary care teams that result in positive patient and system-level outcomes.

Throughout this course, I have learned many valuable lessons about various aspects of the research process. As a result of completing research activities throughout N6661, I am much better prepared to embrace future research opportunities. I will continue to pursue further learning opportunities related to systematic reviews and quantitative research methodologies, the publication process, and funding applications. I will continue to draw upon the knowledge and expertise of experienced researchers as I establish my role as a nursing researcher.

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Appendix A

Scoping Review Phase Two Search Terms

Database	Search Terms
PubMed	1. Primary health care (subject heading)
	2. Primary care nursing (subject heading)
	3. Primary care (keyword)
	4. 1 or 2 or 3
	5. Newfoundland and Labrador (subject heading)
	6. New Brunswick (subject heading)
	7. Prince Edward Island (subject heading)
	8. Nova Scotia (subject heading)
	9. Newfoundland (keyword)
	10. Labrador (keyword)
	11. “New Brunswick” (keyword)
	12. “Prince Edward Island” (keyword)
	13. “Nova Scotia” (keyword)
	14. 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
	15. Nurses (subject heading)
	16. nurs* (keyword)
	17. 15 or 16
	18. 4 and 14 and 17
	19. Limit 18 to English language
Embase	1. Primary health care (subject heading)
	2. Primary medical care (subject heading)
	3. Primary care (keyword)
	4. 1 or 2 or 3
	5. Newfoundland and Labrador (subject heading)
	6. New Brunswick (subject heading)
	7. Prince Edward Island (subject heading)
	8. Nova Scotia (subject heading)
	9. Newfoundland (keyword)
	10. Labrador (keyword)
	11. “New Brunswick” (keyword)
	12. “Prince Edward Island” (keyword)
	13. “Nova Scotia” (keyword)
	14. 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
	15. Nurse (subject heading)
	16. Registered nurse (subject heading)
	17. Nurse Practitioner (subject heading)
	18. Licensed practical nurse (subject heading)
	19. nurs* (keyword)
	20. 15 or 16 or 17 or 18 or 19
	21. 4 and 14 and 20
	22. Limit 21 to English language

CINAHL	S1.	nurs* and “primary care” and (Newfoundland OR Labrador OR “Nova Scotia” OR “New Brunswick” OR “Prince Edward Island” OR Atlantic)
	S2.	Primary health care (subject heading)
	S3.	Newfoundland (subject heading) or Nova Scotia (subject heading) or New Brunswick (subject heading) or Prince Edward Island (subject heading)
	S4.	Nurses (subject heading) or nurs* (keyword)
	S5.	S2 and S3 and S4
	S6.	S1 or S2
	S7.	Limiters – English language
Cochrane Library	1.	Primary health care (subject heading)
	2.	Primary care nursing (subject heading)
	3.	Primary care (keyword)
	4.	1 or 2 or 3
	5.	Newfoundland and Labrador (subject heading)
	6.	New Brunswick (subject heading)
	7.	Prince Edward Island (subject heading)
	8.	Nova Scotia (subject heading)
	9.	Newfoundland (keyword)
	10.	Labrador (keyword)
	11.	“New Brunswick” (keyword)
	12.	“Prince Edward Island” (keyword)
	13.	“Nova Scotia” (keyword)
	14.	5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
	15.	Nurses (subject heading)
	16.	nurs* (keyword)
	17.	15 or 16
	18.	4 and 14 and 17
	19.	Limit 18 to English language
Joanna Briggs Institute EBP Database	1.	Primary health care (subject heading)
	2.	Primary care (keyword)
	3.	1 or 2
	4.	Newfoundland and Labrador (subject heading)
	5.	New Brunswick (subject heading)
	6.	Prince Edward Island (subject heading)
	7.	Nova Scotia (subject heading)
	8.	Newfoundland (keyword)
	9.	Labrador (keyword)
	10.	“New Brunswick” (keyword)
	11.	“Prince Edward Island” (keyword)
	12.	“Nova Scotia” (keyword)
	13.	4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12
	14.	Nurses (subject heading)
	15.	nurs* (keyword)
	16.	14 or 15
	17.	3 and 13 and 16

	18.	Limit 17 to English language
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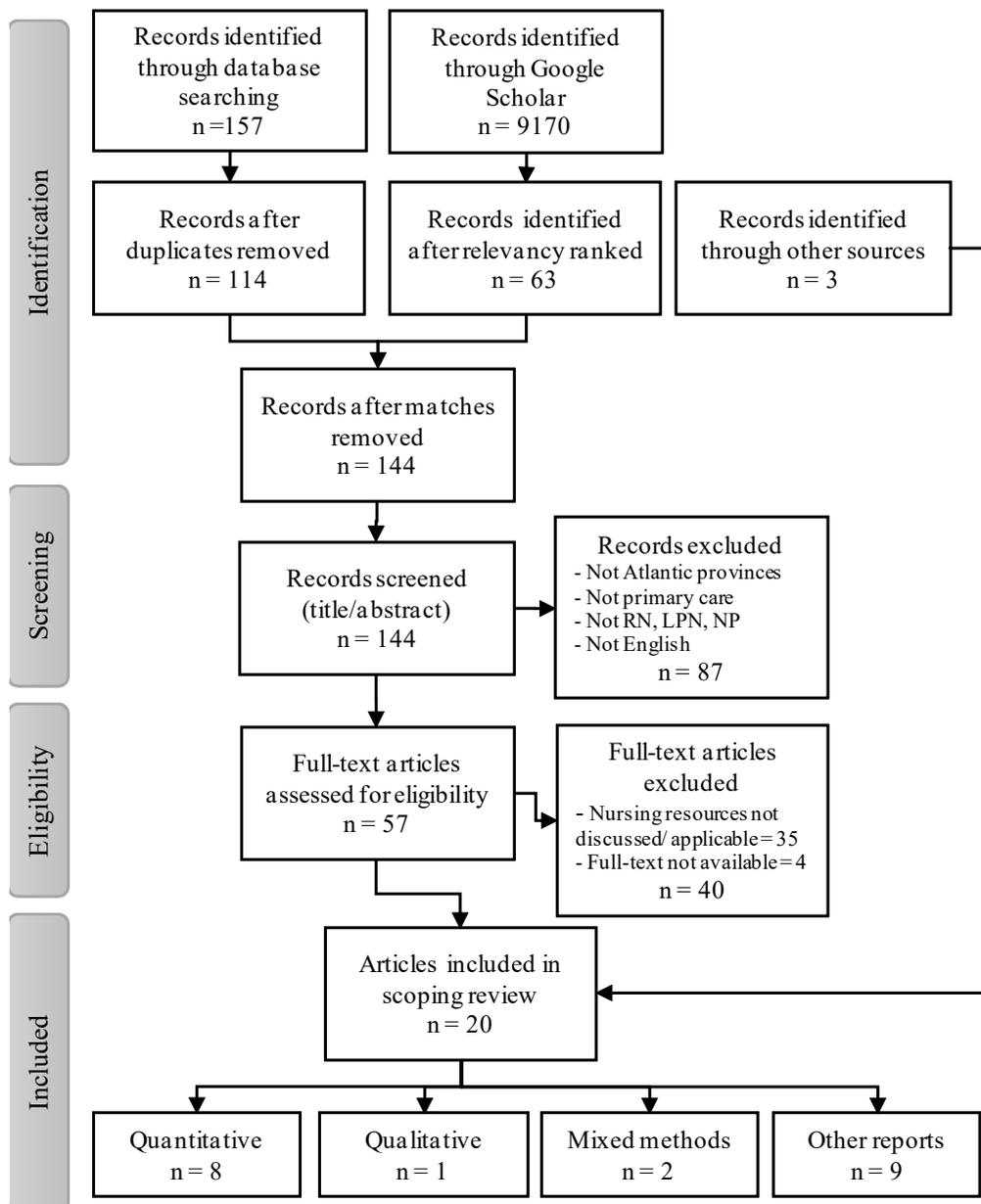
OTseeker	1.	Primary health care (any field)
	2.	Primary care (any field)
	3.	1 or 2
	4.	Newfoundland (any field)
	5.	Labrador (any field)
	6.	New Brunswick (any field)
	7.	Nova Scotia (any field)
	8.	Prince Edward Island (any field)
	9.	4 or 5 or 6 or 7 or 8
	10.	nurs* (any field)
	11.	3 and 9 and 10

PEDro	1.	Primary health care (any field)
	2.	Primary care (any field)
	3.	1 or 2
	4.	Newfoundland (any field)
	5.	Labrador (any field)
	6.	New Brunswick (any field)
	7.	Nova Scotia (any field)
	8.	Prince Edward Island (any field)
	9.	4 or 5 or 6 or 7 or 8
	10.	nurs* (any field)
	11.	3 and 9 and 10

Google Scholar		“primary care” and Newfoundland or Labrador or “New Brunswick” or “Nova Scotia” or “Prince Edward Island” and nurse
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Appendix B

PRISMA Diagram for Scoping Review



Appendix C

Summary Table of Included Literature

NL	Agnew, 1974	
	Purpose	To highlight the need for baccalaureate curriculum that supports expanded RN role in NL and throughout Canada
	Participants and Setting	Family practice RNs in Atlantic Canada
	Model of Care	N/A
	Type of Study/Article	Position paper
	Key Findings/Observations	Expanded role of nurses not well understood. Working group consisting of nursing and medical organizations/institutions working toward defining expanded role of nurses in primary care and toward tailoring roles to meet needs of rural and urban general practice.
	Conclusions/ Recommendations	Need to build a nursing education program with portability between provinces. Bachelor of Nursing curriculum should support expanded role by incorporating history taking, physical examination, diagnosis and treatment of common illnesses, and chronic disease management.
	Barrett et al., 2011†	
	Purpose	To compare a nurse-coordinated model of care to usual care for chronic kidney disease (CKD)
	Participants and Setting	Referred sample of 474 adults, aged 40 to 75 years, living with stage 3 or 4 CKD. Primary care community and nephrology clinics in five urban Canadian centres (including NS and NL)
	Model of Care	Nurse-coordinated team with nephrologist
	Type of Study/Article	Quantitative - Unblinded RCT
	Key Findings/Observations	Compared with usual care, nurse-coordinated care did not affect rate of decline of GFR or control of most risk factors in individuals with CKD. IG was more likely than control group (CG) to be using RAAS blockers (P=0.06) and lipid-lowering agents (P=0.0003) over time. IG was extremely satisfied with care. Score = 31 out of a possible 32 at 8, 16, and 24 months.
	Conclusions/Recommendations	Primary health care teams are effective in providing care to patients with stage 3/4 CKD. Nurse-coordinated model of care had similar effects on control of risk factors as usual care and was associated with greater use of some medications. Further assessment recommended.
	Chambers & West, 1978	
	Purpose	To compare effectiveness of primary care provided by a family practice nurse (FPN) to conventional care
	Participants and Setting	Purposive sample of 877 families attending one St. John's, NL family practice clinic over a one-year period in 1974
	Model of Care	FPN-led with physician or other clinician referral as needed
	Type of Study/Article	Quantitative - RCT
	Key Findings/Observations	After one year, 50% of CG and 61% of IG were classified as physically healthy (P < 0.01). No significant difference between groups in emotional or social functioning
	Conclusions/Recommendations	Results support patients receiving first contact care from a FPN experience favourable health outcomes, comparable to those receiving standard care from a family physician
	Chambers et al., 1977	
	Purpose	To determine the effect of a FPN on the volume, quality, and cost of rural health services
	Participants and Setting	Residents of all ages from an isolated area of rural NL
Model of Care	All regular primary care services provided by one salaried FPN, practicing out of a community-based health clinic	
Type of Study/Article	Quantitative - RCT	

Key Findings/Observations	<p>Primary care visits increased by 136% and hospital visits decreased by 35% in IG during study period.*</p> <p>Acute days hospitalized decreased by 5% in IG and increased by 39% in CG.*</p> <p>Total annual health service cost per 1000 persons increased by 26% in IG and by 21% in CG.*</p> <p>* P values not reported</p> <p>Health outcome indicators comparable between groups.</p>	
Conclusions/Recommendations	<p>There was no measurable change in quality of care before and after study period. Incorporation of FPN resulted in more primary care services provided, primary care services being provided in the community rather than hospital, and a focus on preventive care. Service costs increased slightly in the short term.</p>	
Goss Gilroy, 2001		
Purpose	To evaluate the implementation, extent of integration, and impact of the NP-Primary Health Care Role in NL, and to identify plans for future deployment	
Participants and Setting	NPs from first two graduating classes in NL (1998 and 1999), managers and health professionals who worked with them, and key informants involved in NP role implementation and integration in NL and two other Canadian provinces	
Model of Care	Variable	
Type of Study/Article	Mixed methods - survey; key informant interviews; and collection of service, workload, and activity data over a one-week reference period	
Key Findings/Observations	<p>NP role accepted, but not clearly understood by public or other health professionals.</p> <p>NPs worked collaboratively with other professionals. Collaboration with physicians was primarily informal consultation.</p> <p>Role integration facilitated by provincial legislation, funding, regulatory framework, and championing by managers and NPs.</p> <p>Role integration constrained by lack of understanding of role, lack of acceptance by fee-for-service physicians, inadequate management, lack of clarity regarding implications of collaborative relationships with physicians, and lack of clear direction for future of NP role.</p> <p>NP role had no effect of recruitment and retention of physicians. Slightly decreased workload and increased job satisfaction of physicians and other health professionals. Physicians reported being concerned about an increase in complexity of caseload and potential legal liabilities of collaborative relationships.</p>	
Conclusions/ Recommendations	<p>More research needed to examine effect of NP role on health services. Need formal engagement of provincial and regional leadership to clarify roles and responsibilities of professionals, and to develop policies around the same. Need to develop a plan for future deployment of NPs and to continue to pursue funding that will support interdisciplinary collaboration in health service delivery.</p>	
Health Council of Canada, 2009††		
Purpose	To report the characteristics of primary health care teams across Canada and potential implications for patients and taxpayers	
Participants and Setting	Primary care clinic providing mental health and addictions services in NL	
Model of Care	Collaborative primary care team, including nurses (unspecified) and allied health professionals	
Type of Study/Article	Organization report	
Key Findings/Observations	Collaborative primary care team, including nurses and allied health professionals, effectively delivers mental health and addictions services to individuals of all ages	
Conclusions/Recommendations	<p>Primary care teams expanding across Canada, but access still limited for many Canadians. Data about primary care teams is limited and unclear.</p> <p>More research is needed to determine the value of primary care teams in delivering care to average, uncomplicated populations, and to determine the nature of valuable primary care teams.</p>	
NS	Barrett et al., 2011‡	
	Purpose	To compare a nurse-coordinated model of care to usual care for chronic kidney disease (CKD)

Participants and Setting	Referred sample of 474 adults, aged 40 to 75 years, living with stage 3 or 4 CKD. Primary care community and nephrology clinics in five urban Canadian centres (including NS and NL)
Model of Care	Nurse-coordinated team with nephrologist
Type of Study/Article	Quantitative - Unblinded RCT
Key Findings/Observations	Compared with usual care, nurse-coordinated care did not affect rate of decline of GFR or control of most risk factors in individuals with CKD. IG was more likely than control group (CG) to be using RAAS blockers (P=0.06) and lipid-lowering agents (P=0.0003) over time. IG was extremely satisfied with care. Score = 31 out of a possible 32 at 8, 16, and 24 months.
Conclusions/Recommendations	Primary health care teams are effective in providing care to patients with stage 3/4 CKD. Nurse-coordinated model of care had similar effects on control of risk factors as usual care and was associated with greater use of some medications. Further assessment recommended.
Bristow et al., 1974	
Purpose	To raise questions concerning the nature and impact of an expanded nursing role in NS and other Atlantic provinces
Participants and Setting	N/A
Model of Care	N/A
Type of Study/Article	Position paper
Key Findings/Observations	Common for nurses to practice expanded role in remote settings. Nursing in Atlantic provinces is controlled by institutions and other professionals, which restricts nursing role.
Conclusions/Recommendations	Expanded nursing role should be incorporated in primary care settings in which physicians are present. Clients are best served when health professionals collaborate.
Graham et al., 2006	
Purpose	To assess the impact of primary care reform involving collaborative practice primary care teams on the quality of process-of-care, self-care, and proxy measures for health outcomes of individuals with diabetes and hypertension
Participants and Setting	Recruited from a record of all patients in four Strengthening Primary Care Initiative sites in NS with diabetes or hypertension who had at least one billing for care of their condition during the period January 1998-January 2000
Model of Care	Collaborative practice teams with NP and at least one physician, using 'alternative funding arrangements', not fee-for-service
Type of Study/Article	Quantitative - Observational pre-post intervention chart audit
Key Findings/Observations	Diabetes: Post-intervention, patients approximately twice as likely to have achieved satisfactory blood pressure ($p < 0.05$), have been screened for nephropathy ($p < 0.01$), and to be monitoring blood glucose levels at home ($p < 0.01$); and 1.6 times more likely to have been screened for retinopathy ($p < 0.05$). No statistically significant differences before and after for other indicators. Hypertension: Post-intervention, patients were three times as likely to have achieved satisfactory systolic BP and twice as likely to have achieved satisfactory diastolic BP ($p < 0.001$). Percentage of patients having BP measured twice per year decreased by 4.1%. Patients were more likely to have had blood glucose ($p < 0.001$) and lipid levels ($p < 0.05$) checked. No statistically significant differences before and after for other indicators.
Conclusions/Recommendations	More resources should be allocated to evaluation of primary care initiatives. Collaborative teams may improve health of Canadians. More research is needed to explore the relationships between specific contributions and outcomes.
Health Council of Canada, 2009††	
Purpose	To report the characteristics of primary health care teams across Canada and potential implications for patients and taxpayers

Participants and Setting	Physicians, nurses, and dieticians collaborate to deliver ANCHOR program for cardiovascular risk management
Model of Care	Collaborative interdisciplinary team
Type of Study/Article	Organization report
Key Findings/Observations	Nurses provide education, counselling, referral, and support. Patients decrease cardiovascular risk by modifying risk behaviours and using medications appropriately.
Conclusions/Recommendations	Primary care teams expanding across Canada, but access still limited for many Canadians. Data about primary care teams is limited and unclear. More research is needed to determine the value of primary care teams in delivering care to average, uncomplicated populations, and to determine the nature of valuable primary care teams.
Lawson et al., 2012	
Purpose	To evaluate the effect of an enhanced collaborative care model on the quality of healthcare delivery among a community primary healthcare population
Participants and Setting	Patients with certain health conditions of interest (DM, HTN, asthma, CAD), plus a random 'tape measure method' sample of additional patients seen one or more times by a primary care provider at one NS community practice over a specified 12-month period
Model of Care	Collaborative practice team with NP and three physicians, using 'alternative funding arrangement' involving shadow-billing, not fee-for-service
Type of Study/Article	Quantitative - Observational, retrospective pre-post intervention chart audit
Key Findings/Observations	Preventive care: Post intervention, statistically significant increase in percentage of patients aged 7-18 years receiving full course of MMR immunization ($p < 0.01$) and women 50 years and over receiving recent mammogram ($p < 0.05$); decrease in males 40 years and over having full lipid profile ($p < 0.05$). Results otherwise insignificant. Chronic disease management: Post-intervention, statistically significant increase in recommended screening tests for patients with diabetes, and greater proportion of patients at or below HbA1C and systolic BP targets ($p < 0.05$).
Conclusions/Recommendations	Primary care teams can improve access to services and facilitate higher quality of care delivery. Greater gains may be seen over time with team-building and physician support. NPs and family doctors have an important role to play in strengthening primary healthcare system.
Magee et al., 2011	
Purpose	To highlight the rise of FPNs in fee-for-service practice settings in NS
Participants and Setting	One FPN and one family physician working at a family practice in Halifax, NS
Model of Care	FPN and physician work together in fee-for-service family practice
Type of Study/Article	Feature column
Key Findings/Observations	Wait times at practice reduced. Additional time available for education and counselling, including behaviour modification.
Conclusions/Recommendations	Family practice nursing is cost-effective, patient-centered, and improves comprehensiveness of care. FPN is effective in providing preventive care and chronic disease management.
Martin-Misener et al., 2009	
Purpose	To determine whether primary care and emergency services provided by a nurse-practitioner-paramedic-family physician team would, over time, improve psychosocial adjustment of adults in a rural community and reduce healthcare expenditure
Participants and Setting	English-speaking residents of the geographically isolated Long and Brier Islands, aged 40 years or over, with a diagnosis of at least one chronic disease. Complete data set collected for 50 subjects; partial data set for 36 subjects
Model of Care	Following education program to broaden skill set of paramedics, a NP-paramedic-physician model of primary and emergency care introduced. Paramedic and NP on-site, physician off-site with regular visits
Type of Study/Article	Mixed methods - Longitudinal three-year study

Key Findings/Observations	<p>Over three years, total costs were decreased, with reductions attributable to reduced travel ($p = 0.02$) and medication ($p = 0.02$) costs. Total physician visits decreased by 28%* and ER visits decreased by 40%*. No measurable change in psychosocial adjustment scores.</p> <p>*P values not reported.</p> <p>Participants reported increase in accessibility to a broader range of services (ex. health promotion, screening, disease management) and were highly satisfied with health services, structure, and provider collaboration.</p>
Conclusions/Recommendations	<p>Implementation of change required great effort. Supportive organizational structures are key to model reform. NP-paramedic-physician model is effective for rural communities with low emergency call volumes. Sufficient time following implementation is required before results become evident.</p>
Martin-Misener et al., 2004	
Purpose	To convey the experience of planning and implementing the Strengthening Primary Care Initiative in NS
Participants and Setting	Authorities and health professionals involved in implementing the Strengthening Primary Care Initiative in four communities in NS from 2000-2002
Model of Care	NPs and family physicians engage in formal collaborative practice agreements with an alternative non fee-for-service funding model
Type of Study/Article	Institutional report
Key Findings/Observations	<p>Strengthening Primary Care Initiative (SPCI) involved extensive collaboration between NPs, physicians, other health professionals, and authorities.</p> <p>Formal NP-physician collaborative practice agreements were instituted to allow NPs to practice in absence of legislation.</p> <p>Introduction of NPs was met with some resistance, with concerns from physicians and pharmacists about liability.</p> <p>Many NP functions limited by regulations from various authorities.</p>
Conclusions/Recommendations	<p>Interdisciplinary primary care teamwork is the approach that best utilizes resources to meet patient care needs.</p> <p>Collaboration between NPs and physicians was central to the goals of the SPCI, and reception was variable.</p> <p>Collaborative practice in primary care requires substantial commitment by health professionals, organizations, and institutions.</p>
Martin-Misener et al., 2010	
Purpose	To describe how rural health board chairpersons and healthcare personnel define nurse practitioner roles in Nova Scotia
Participants and Setting	Purposive sample of health board chairpersons ($n = 6$), and NPs, FPs, public health nurses, and FPNs ($n = 51$) in rural NS
Model of Care	Physician-led family practices and community-based nurse-led clinics
Type of Study/Article	Mixed methods - Triangulation model of concurrent qualitative (interview) and quantitative (questionnaire) data collection with subsequent analysis and integration
Key Findings/Observations	<p>Chairpersons and providers perceived NP role as focused on wide range of holistic health services. Participants indicated an overlap of NP and FP services, which they reported serves to improve care. Potential overlap exists between NP, public health, and FPN in health promotion activities.</p> <p>When asked if current supply of care providers was adequate to meet community needs, 70% of nurse respondents said 'no' and 62% of FPs said 'yes'.</p> <p>39% said NPs perform assessment and diagnostic activities; 91% of said NPs should.</p> <p>35% said NPs perform consultation, referral, and admission activities; 80% said they should consult/refer and 79% said they should admit.</p>

Conclusions/Recommendations	There was disagreement between nurses and physicians regarding adequacy of health services. NP role provides opportunity to improve accessibility of rural residents to primary care services, namely, health promotion, illness prevention, and chronic and episodic disease care.	
Murphy et al., 2009		
Purpose	To identify the patterns of prescribing by primary care NPs for a cohort of older adults	
Participants and Setting	Practicing primary care NPs in NS (n = 15) for fiscal years 2004/05-2006/07	
Model of Care	Not discussed	
Type of Study/Article	Quantitative - Retrospective analysis of prescription claims data	
Key Findings/Observations	Average age of patients was 77 in first year and 79 in last two years Antimicrobials and anti-inflammatories were most prescribed and ranked highest in cost. Over three years, prescription volume per NP doubled and cost per prescription increased by 20%.	
Conclusions/Recommendations	NP prescribing practices in NS consistent with those reported elsewhere. Further study needed to link patient characteristics and conditions to prescriptions.	
Todd et al., 2007		
Purpose	To describe the role of family practice/primary healthcare (FP/PHC) nurses in Nova Scotia and to determine whether they are practicing to full scope of practice	
Participants and Setting	Purposive sample of 41 RNs in NS who indicated on licence renewal application their place of employment in 2004 was a physician's office/family practice unit	
Model of Care	N/A	
Type of Study/Article	Mixed descriptive	
Key Findings/Observations	Education: Highest level of education by 85% of respondents was diploma in nursing. Remaining 15% had BN. FP/PHC nurses collaborated with a variety of health professionals. Patient education related to health promotion and chronic disease was a major function of respondents. Over 90% said practice setting supports their ability to function within RN scope of practice. Respondents had concerns regarding infrastructure (numbers of nurses, leadership/support for FP/PHC role), education/scope of practice (understanding of role and scope, continuing education), and remuneration (benefits, job security, wages, non-nursing duties).	
Conclusions/Recommendations	Study helped identify key concerns and challenges RNs reported impede working to full scope in family practice/primary care. Need for clarification of nursing roles and continued leadership and support.	
NB	Faculty of UNB, 1974	
	Purpose	To clarify and provide support for the expanded role of the nurse
	Participants and Setting	N/A
	Model of Care	N/A
	Type of Study/Article	Position paper
	Key Findings/Observations	Nursing in Atlantic provinces is focused on responsibilities to institutions and other professionals, which restricts nursing role. Expanded nursing role in primary care is not well understood.
	Conclusions/Recommendations	Need to broaden current nursing role by expanding nurse functions, independence, and accountability; and improving health professionals' attitudes about expanded nursing role. Communication and collaboration between health professionals is necessary. Focus of nursing responsibilities must shift to direct patient care.
	Health Council of Canada, 2009††	
	Purpose	To report the characteristics of primary health care teams across Canada and potential implications for patients and taxpayers
	Participants and Setting	Collaborative primary care team, including NP, nurses (unspecified), physicians, and other health professionals working out of a community health centre that serves marginalized populations
Model of Care	Collaborative team, including nurses, physicians, and other health professionals	
Type of Study/Article	Organization report	

Type of Study/Article	Organization report	
Key Findings/Observations	Team empowers individuals and community to make changes by delivering standard primary care and other services, such as recreational activities, after-school program, and computer access.	
Conclusions/Recommendations	Primary care teams expanding across Canada, but access still limited for many Canadians. Data about primary care teams is limited and unclear. More research is needed to determine the value of primary care teams in delivering care to average, uncomplicated populations, and to determine the nature of valuable primary care teams.	
Jaimet, 2012		
Purpose	To highlight nurses' responses to the changing healthcare system in NB	
Participants and Setting	One nurse manager (RN) at a health centre in Rogersville, NB	
Model of Care	One nurse and one physician	
Type of Study/Article	Feature column	
Key Findings/Observations	Nurse led programs for smoking cessation, fitness, and weight loss are having success.	
Conclusions/Recommendations	Great potential for expanding currently limited nursing role in primary care: focus on prevention, screening, counselling, and chronic disease management.	
Jones, 2015		
Purpose	To report initial results of an evaluation of Outreach Diabetes Case Managers in primary care	
Participants and Setting	An unspecified number of patient with diabetes receiving care in primary care settings in NB	
Model of Care	Interdisciplinary teams that include RNs as Diabetes Case Managers	
Type of Study/Article	Report	
Key Findings/Observations	Outreach diabetes case managers (ODCMs) as part of primary care teams improved patient outcomes and resulted in high levels of patient-centered care. Case managers typically seeing patients > 65 years of age with multiple comorbidities.	
Conclusions/Recommendations	ODCMs being well integrated into NB health system. ODCMs as part of primary care teams improve chronic disease self-management, promote knowledge transfer for patients and professionals, and enhance interdisciplinary team collaboration.	
Paterson et al., 2009		
Purpose	To describe how the changing context of a nurse-managed clinic resulted in changes in nurses' roles	
Participants and Setting	Purposive sample of 23 stakeholders of a community health clinic (CHC), including clients, volunteers, staff from other community agencies, and nursing or social work students who completed clinical rotations at the CHC. Clinic serves marginalized groups, such as those with drug addictions	
Model of Care	NP-managed, with outreach nurse, social worker, and support staff	
Type of Study/Article	Qualitative - Interpretive description	
Key Findings/Observations	Social, political and economic factors determined nursing roles in the CHC.	
Conclusions/Recommendations	Nurses contribute to resolving health inequities and are committed to social justice.	
PE	Labrosse, 2016	
	Purpose	To evaluate the effect of integrating NP role into collaborative primary care models, and to compare relationship of collaborative and non-collaborative models on quality of and access to care
	Participants and Setting	Health professionals at the Harbourside Health Center in Summerside, PE
	Model of Care	Collaborative team consisting of 3.6 FTE salaried family physicians, two NPs, two RNs, four LPNs, one diabetes educator RN, and two registered dieticians
	Type of Study/Article	Report with case study
	Key Findings/Observations	Addition of two NPs during time of physician shortage reduced wait times and improved patient satisfaction, while having no effect on quality of care.
	Conclusions/Recommendations	NP should increase clinic capacity in PEI by 600-800 patients, seeing 9-15 patients per day each. NP practice on PEI is meant to be collaborative, not competitive, with other professionals. Clear communication of role is necessary. Physician engagement is necessary. Some physicians view NP integration as disruptive.

Appendix D

Abstract for Eastern Health Nursing Education and Research Council 12th Annual Nursing Research Symposium

Nursing within Primary Care Settings in Atlantic Canada: A Scoping Review

Background: Newfoundland and Labrador (NL) ranks amongst the highest in Canada for risk factors for and prevalence of chronic diseases. To address this health system issue, the province has committed to primary healthcare reform, including implementing interdisciplinary primary care teams. To inform discussions regarding integrating Nurse Practitioners (NP), Registered Nurses (RN), and Licensed Practical Nurses (LPN) into these teams, better understanding of their roles in primary care is needed. **Purpose:** A scoping review was conducted to examine and synthesize evidence related to nursing in primary care settings across Atlantic Canada (NL, New Brunswick, Nova Scotia, Prince Edward Island). **Methods:** Joanna Briggs Institute scoping review methodology was used. The Nursing Role Effectiveness Model was used to define variables of interest and organize study findings. **Results:** Twenty articles met inclusion criteria. Roles of RNs and NPs in primary care primarily included chronic disease management, education, and health promotion. No literature focused on LPNs. Interdisciplinary collaboration was evident across studies. However, nurses' functions within teams were limited by institutional constraints and other providers. Primary care settings that included nurses reported positive clinical outcomes, improved access to services, and high patient satisfaction. **Conclusions:** There is a need to clarify the role of nurses in chronic disease management, health promotion, and preventive care within primary care settings in Atlantic Canada. There is considerable opportunity for future research to investigate

specific attributes of nursing and primary care teams that result in positive patient and system outcomes.

Appendix E

Abstract for Primary Healthcare Partnership Forum 2017

Nursing within Primary Care Settings in Atlantic Canada: A Scoping Review

Context: To address the prevalence of chronic diseases in Newfoundland and Labrador (NL), the province has committed to primary healthcare reform, including implementing team-based models of primary care (PC). Successful integration of Nurse Practitioners (NP), Registered Nurses (RN), and Licensed Practical Nurses (LPN) into PC teams requires better understanding of their current roles in PC, barriers/facilitators of role optimization, and contributions to patient and system-level outcomes.

Objective: To examine and synthesize evidence related to nursing in PC settings across Atlantic Canadian provinces (i.e., NL, New Brunswick, Nova Scotia, Prince Edward Island).

Design: Scoping review using Joanna Briggs Institute (JBI) methodology.

Search Strategy: Eight databases were searched. Published and unpublished literature was considered for eligibility. Articles were considered for inclusion if they discussed any aspect of NPs, RNs, and/or LPNs practicing in PC in any of the Atlantic provinces.

Intervention/Instrument: N/A

Outcome Measures: Data extracted from articles was guided by the Nursing Role Effectiveness Model, including any information that related to nurse structure (e.g., education-level, skill, designation), organizational structure (e.g., staffing levels, models of care, levels of nurse autonomy), nurses' role functions, and patient and system outcomes (e.g., clinical outcomes, satisfaction, cost).

Results: A total of 20 articles met inclusion criteria. Approximately half of these articles discussed RNs and half discussed NPs in PC settings. No literature focused on LPNs. Four studies were conducted in NL. Emphasis on interdisciplinary collaboration was evident across studies. The function of nurses within teams was found to be limited by institutional constraints and influence of other providers. Roles of RNs and NPs in PC settings consisted primarily of chronic disease management, education, and health promotion. PC settings that incorporate nurses were associated with positive patient health outcomes, improved access to services, and high patient satisfaction.

Conclusions: Emerging literature demonstrates the effectiveness of NPs and RNs in PC practices across Atlantic Canada. However, there is a need to clarify the roles of NPs, RNs, and LPNs with respect to chronic disease management, health promotion, and preventive care within these settings. There is considerable opportunity for future research to investigate specific attributes of nursing within PC teams that result in high-quality patient and system-level outcomes.

Keywords: primary care, nurses, Atlantic Canada

Appendix F

Abstract for Community Health Nurses of Canada Conference 2017

Nursing within Primary Care Settings in Atlantic Canada: A Scoping Review

Background: Newfoundland and Labrador (NL) ranks among the highest in Canada for chronic diseases and risk factors for chronic disease. The province has committed to working towards reforming primary care delivery through the integration of interdisciplinary primary health care teams. As interdisciplinary models of care are becoming more prominent within Canadian health care systems, so are the roles of nurses, including nurse practitioners (NP), registered nurses (RN), and licensed practical nurses (LPN). **Purpose:** A scoping review was conducted to examine and synthesize evidence related to nursing in primary care settings across Atlantic Canadian provinces (i.e. New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island). **Methods:** Joanna Briggs Institute scoping review methodology was used. The Nursing Role Effectiveness Model was used to define nursing variables of interest and organize study findings. **Results:** A total of 20 articles were included in the review. RNs and NPs in primary care settings were well-represented in the literature, while no articles focused on LPNs. Emphasis on interdisciplinary collaboration was evident. However, the function of nurses in primary care was found to be limited by institutional constraints and influence of other providers. Nursing roles in primary care settings consisted primarily of chronic disease management, education, and health promotion. Primary care settings that incorporate nurses were found to be related to positive patient health outcomes, improved access to services, and high patient satisfaction. **Conclusions:** Nurses are a valuable part of interdisciplinary primary health care teams in Atlantic Canada. Clarification of the role

of nurses in chronic disease management, health promotion, and preventive care is needed. There is considerable potential for future research into the specific attributes of nursing and primary care teams that result in positive patient and system outcomes.

Appendix G

Canadian Nurse - Reflection Article

Moving from Consumer to Producer: A Novice Researcher's Reflection

In the final year of the Master of Nursing (MN) Program within the School of Nursing at Memorial University of Newfoundland, students are given the option of completing a research practicum under the direction of an academic supervisor. During this program, graduate-level nursing students undergo a transition from consumers of research to producers of research. At this academic level, students are expected to demonstrate the Canadian Nurses Association Advanced Nursing Practice Competencies which include conducting research and/or participating in knowledge translation.

I enrolled in the MN program in 2013 and pursued the research practicum route under the supervision of Dr. Julia Lukewich. For many years, I have been an enthusiastic consumer of research. I eagerly read and critiqued studies, and regularly inundated my colleagues with current practice evidence, new methods, and frameworks that could be applied to practice. I soon realized that the successful shift from consumer to producer of research requires an intentional approach. I learned that a novice researcher is poised for success when initiated into the process with a manageable project, a responsible attitude, and plenty of support.

Doing the Right Project

As an MN research practicum student, I had the opportunity to lead a Joanna Briggs Institute (JBI) scoping review focused on nursing within primary care settings in Atlantic Canada. I learned that conducting a review using JBI methodology is an excellent entry point for novice researchers, as it allows for a gradual transition from

consumer to producer of research. The methodology involves systematically reviewing existing published and unpublished literature. There is no designing of interventions or manipulation of variables; only examination and synthesis of results that have already been produced. In addition, I found the JBI Reviewers' Manual 2015 provided very clear guidelines for developing the review protocol and reviewing literature. This allowed me to also commit myself to developing other aspects of project leadership, such as knowledge translation and teamwork.

Learning to Share

From the outset of my MN practicum, I planned to prepare and submit a manuscript for publication, and submit an abstract for an oral presentation at a conference. At the time, this seemed like a sufficient knowledge translation plan. However, other dissemination opportunities arose, and my supervisor encouraged me to participate. I admit I had many conversations with myself, trying to weigh the benefits of participating in knowledge translation against the effort involved. Each time, I arrived at the same conclusion: knowledge translation is a responsibility and I must be held accountable to share the findings from the research I completed. Being an ethical and accountable researcher requires commitment to sharing knowledge with those who can use it or benefit from it. This knowledge sharing process is dynamic and interactive. Publication is a valuable tool, but the onus is on all researchers to do more than leave their work out there for others to find. Instead, researchers go to where the users are, delivering knowledge through interactive formats, such as posters, oral presentations, and

round-table discussions. It is reasonable to expect this process to continue long after the project is done.

The resources available to support knowledge translation are plentiful. In particular, there are myriad local, provincial, and national funding opportunities available to nurses who wish to travel to conferences or produce presentation materials. Over the course of this project, I have learned that obtaining ample funding is realistic. I have successfully received a number of awards for this project over the past few months. Without this funding, I would not have been able to accept the invitation to the Community Health Nurses of Canada national conference this summer.

Getting By with a Little Help

With the responsibility to produce and disseminate knowledge, comes the need for good help. A good project leader knows the importance of surrounding herself or himself with a network of experienced and qualified people. Although it was my responsibility as an MN student to demonstrate my ability to complete the research project independently, the successful completion of the project is in large part due to the team I worked with. I continuously drew upon the knowledge, expertise, and personal qualities of others who contributed to the project in various ways, including Dr. Lukewich, Ms. Michelle Swab (Public Services Librarian) and Ms. Samantha Taylor (Research Assistant).

Sometimes, receiving help was daunting. One example involved receiving feedback on my scoping review manuscript from a group of graduate nursing students. Prior to submitting the manuscript for publication, I distributed it the PhD class and

supervisors. I then joined them for one of their weekly seminars, during which they asked questions about the project and offered suggestions to improve the paper. Prior to the meeting, I remember feeling very exposed; as though it was *me*, and not my work, they would be scrutinizing. Still, I recognized the value of having feedback from experienced authors before submitting the manuscript for peer review. The seminar experience turned out to be wonderful. I was impressed by the insightful, constructive suggestions they offered. Despite my insecurity, I received several positive comments about the manuscript, which was reassuring.

Decidedly Uncertain

I now know for certain that nursing research is for me. Every challenge I have faced has served only to motivate me onward. I have come through the MN research practicum wanting, more than ever, to know and share. I was never fully prepared for the weight of ownership associated with such a comparatively small research project. Amidst the excitement of leading a project and disseminating my own work lives a powerful entity, embodied by looming deadlines, restrictive word limits, and constraining author guidelines. I still sometimes wonder how I got here, on the path to being a researcher. I wonder, whatever led me to think I was qualified? At times, it feels like someone might throw back the curtain and reveal that I have no business doing this. But, perhaps, that is only fitting. Researchers do not become researchers because they know everything; they do it because there is so much unknown.