

THE ROLE OF REGISTERED NURSES IN PRIMARY CARE AND PUBLIC HEALTH  
COLLABORATION: A SCOPING REVIEW

by

Monica Eleana Swanson

B.Sc.N., The University of British Columbia, 1994

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

MASTER OF SCIENCE IN NURSING

in

The Faculty of Graduate and Postdoctoral Studies

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

April 2017

© Monica Eleana Swanson, 2017

## Abstract

**PURPOSE** As the British Columbia (BC) government works to improve primary care (PC) performance, attention to collaboration between PC and Public Health (PH) has been studied, especially improving health promotion in PC. Human resources and role optimization considerations are needed to operationalize this strategy. Nurses are the largest health care provider in BC, and yet nurses are an underutilized resource in the PC system in BC. This research aims to identify the roles of registered nurses (RN) in PC and PH collaboration and confirm if the BC RN scope of practice sufficiently covers the identified roles.

**METHODS** A scoping review of the current literature from North America, Western Europe and Australia/New Zealand from Jan. 2009 to Jan. 2016 was conducted.

**RESULTS** Twenty-three articles were obtained. Various nursing roles were identified that benefit PC/PH collaboration including: relationship builder, outreach professional, program facilitator and care coordinator. Through these roles, nurses supported vertical and horizontal transitions in chronic disease, communicable disease care and maternity care. Nurse's roles were enacted at various levels from intrapersonal to organizational and systemic levels. The BC RN scope of practice supports the roles identified in this review, reaffirming that nurses are qualified to enact the roles.

**CONCLUSIONS** Based on their ability to work in a variety of roles and settings to promote collaboration between PC and PH, nurses could be more optimally utilized to support health care system change. Recommendations include political directives that support using nurses in system change. Health authorities could operationalize this by supporting more team-based nurses with an outreach role, especially for vulnerable populations, and utilizing nurses in inter-organization (such as PH to PC) program facilitation in chronic disease management.

Education institutions need to ensure RN students are exposed to outreach experiences, and have practice working in the PC system, as well inter-organizational collaborative skills.

## Preface

This master thesis is original, unpublished, and conducted by the principal investigator, Monica Eleana Swanson. Drs. Sabrina Wong, Ruth Martin-Misener, and Annette Browne served as the supervisory thesis committee and provide substantive content guidance as well as feedback throughout the stages of this thesis, including multiple edits of all five chapters. All of the work presented was conducted in the School of Nursing at the University of British Columbia (Point Grey campus).

A poster of the scoping review results was presented March 9 2017 for the UBC Centre for Health Service and Policy Research conference. Swanson, M., Wong, S., Martin-Misener, R., and Browne, A. (2017). The Roles of the Nurse in Primary Care and Public Health Collaboration.

The final results of the scoping review will be presented by oral presentation in June 2017 at the Canadian Community Health Nurses Conference.

## Table of Contents

Abstract .....	ii
Preface .....	iv
Table of Contents.....	v
List of Tables .....	viii
List of Figures.....	ix
List of Abbreviations .....	x
Glossary .....	xi
Chapter One: Introduction and Significance .....	1
Chapter Two: Background .....	4
2.1. Defining Collaboration .....	5
2.2. Conceptual Frameworks of Primary Care/Public Health Collaboration.....	6
2.3. Importance of Primary Care/Public Health Collaboration .....	10
2.4. Challenges Implementing Collaboration between Primary Care/Public Health .....	12
2.4.1. Systemic level.....	12
2.4.2. Organizational level.....	14
2.4.3. Interpersonal level.....	14
2.4.4. Intrapersonal level.....	15
2.5. Gaps in Knowledge .....	16
2.5.1. Gaps to the conceptual frameworks.....	16
2.5.2. Gaps from previous work.....	17
2.6. Public Health and Primary Care in BC .....	17
2.6.1. Public health.....	17
2.6.1.1. Governance and structure.....	18
2.6.1.2. Workforce.....	19
2.6.1.3. Strategies & mandates.....	20

2.6.1.4. Rural issues.....	20
2.6.2. Primary care. ....	21
2.6.2.1. Primary care governance and structure.....	22
2.6.2.2. Primary care workforce. ....	24
2.6.2.3. Rural issues.....	25
2.6.2.4. A comparison of primary care/public health workforce.....	26
2.7. Nursing. ....	27
2.7.1. Public health nursing. ....	29
2.7.2. Primary care nursing.....	32
2.7.3. Gaps and barriers to nurses' role in primary care/public health collaboration. ....	35
Chapter Three: Methods.....	38
3.1. Scoping Reviews .....	38
3.2. Stage 1 Identifying The Research Question.....	39
3.3. Stage 2 Identifying Relevant Studies .....	40
3.3.1. Inclusion and exclusion criteria.....	40
3.3.2. Search strategy. ....	40
3.4. Stage 3 Relevance Testing .....	41
3.5. Stage 4 Charting The Data.....	42
3.6. Stage 5 Collating, Summarizing And Reporting The Results.....	42
3.6.1. Approach to analysis of the scoping review articles.....	43
3.6.2. Coding.....	44
3.7. Credibility/Evaluation.....	44
3.8. Scope of Practice.....	45
Chapter Four: Results .....	46
4.1. Search Strategy Results .....	46
4.1.1. Countries.....	46

4.2. Examples of Collaboration of Public Health Into Primary Care .....	48
4.3. Lack of Large-Scale Collaboration of Public Health/Primary Care.....	48
4.4. Urban and Rural Considerations.....	50
4.5. Players in the Collaboration.....	52
4.6. Health Focus .....	53
4.7. Areas of Nurse Facilitated Primary Care/Public Health Collaboration .....	54
4.8. Intrapersonal/Interpersonal Level Considerations.....	54
4.8.1. Outreach.....	54
4.8.2. Relationship builder.....	56
4.8.3. Care coordinator.....	57
4.9. Organizational Level of Primary Care/Public Health Collaboration.....	59
4.9.1. Program facilitator.....	59
4.9.2. Relationship builder.....	59
4.9.3. Care coordinator.....	60
4.10. Systemic Level of Primary Care/Public Health Collaboration.....	60
4.11. Does the BC RN Scope of Practice Support the Nurse’s Role Identified in the Scoping Review? .....	61
Chapter Five: Discussion .....	65
5.1. Discussion of Findings.....	65
5.2. British Columbia’s Setting Priorities and Primary Care/Public Health Collaboration.....	67
5.3. Recommendations .....	68
5.4. Strengths and Limitations.....	71
References .....	72
Appendix A British Columbia Health Authorities .....	93
Appendix B Primary Care/Public Health Frameworks/Models of Collaboration .....	94

## List of Tables

Table 1. BC Core Public Health Programs.....	20
Table 2. A Geographic And Population Comparison Between A BC Rural And Urban Health Authority .....	21
Table 3. Programs of the General Practice Services Committee.....	23
Table 4. PC Funding Models In BC (BC Auditor General, 2013).....	24
Table 5. Primary Care and Public Health Registered Nurse/Physician Workforce in BC.....	26
Table 6. BC RN Scope of Practice and Activities.....	29
Table 7. PHN Roles and Activities (Community Health Nurses of Canada, 2009; Public Health Agency of Canada, 2008).....	31
Table 8. PC Nurse Roles and Activities (Canadian Family Practice Nurses (n.d.)) .....	33
Table 9. A Comparison Of The Nurse’s Role in Primary Care and Public Health from the Scoping Review .....	49
Table 10. Urban PC/PH Programs and the Nurse’s role .....	51
Table 11. Players in PC/PH Collaboration.....	53
Table 12. Health Foci of the Papers .....	53
Table 13. The RN Roles in PC/PH in Relation the CRNBC RN Scope of Practice (College of Registered Nurses of BC, 2016).....	62
Table 14. Alignment with BC’s Setting Priorities.....	68
Table 15. Recommendations .....	70

## List of Figures

Figure 1. BC RN Scope of Practice .....	28
Figure 2. Number of Papers per Year .....	46
Figure 3. Numbers of Studies from Countries of Origin .....	47

## List of Abbreviations

WHO	World Health Organization
IHI	Institute for Health Care Improvement
IOM	Institute of Medicine
PHAC	Public Health Agency of Canada
PC	Primary Care
PH	Public Health
RN	Registered Nurse
NP	Nurse Practitioner
LPN	Licensed Practical Nurse
MHO	Medical Health Office
GP	General Practitioner
CHC	Community Health Centre
PCMH	Primary Care Medical Home
COPC	Community Oriented Primary Care

## Glossary

**COLLABORATION** The World Health Organization (WHO) defines collaborative practice in health care as occurring “when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, caregivers and communities to deliver the highest quality of care across settings” (2010, p.13).

From a Canadian health care perspective at the sectorial level, the Public Health Agency of Canada (PHAC) defines collaboration as “a recognized relationship among different sectors or groups, which is formed to take action on an issue in a way that is more effective or sustainable than might be achieved by the public health sector acting alone” (PHAC, 2007, p.9).

**PRIMARY HEALTH CARE** Essential health care based on practical, scientifically sound and socially acceptable methods and technology make universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country’s health system, of which it is the central function and main focus. And of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work and constitutes the first element of a continuing health care process. Primary health care has been used to describe both a philosophical approach to care delivery and differentiate the types of health services delivered. It can encompass various social institutions, different sets of scientific and professional disciplines and technologies, and different forms of practice” (WHO, 1978, p. 1).

**PRIMARY CARE** “Primary care is the first point entry to a health care system; the provider of person-focused (not disease-oriented) care over time; the deliverer of care for all but the most uncommon conditions; and the part of the system that integrates or co-ordinates care provided elsewhere or by others” (Starfield, 1998).

**PUBLIC HEALTH** An organized activity of society to promote, protect and improve, and when necessary, restore the health of individuals, specified groups, or the entire population. It is a combination of sciences, skills and, values that function through collective societal activities and involve programs, services and institutions aimed at protecting and improving the health of all people. The term “public health” can describe a concept, a social institution, a set of scientific and professional disciplines and technologies and a form of practice. It is a way of thinking, a set of disciplines, an institution of society, and a manner of practice. It has increasing number and variety of specialized domains and demands of its practitioners (and) increasing array of skills and expertise” (PHAC, 2007, p. 13).

**PRIMARY CARE TRUSTS** Primary Care trusts were local administrative bodies responsible for primary, community and secondary health services to specific populations. Primary Care Trusts were dissolved in 2013 and have been replaced with clinical commissioning groups, which are groups of general practices that come together to decide on the best services for their patients and populations. The Trust’s Public Health role was transferred to local authorities and Public Health England ([www.england.nhs.uk](http://www.england.nhs.uk)).

**PATIENT CENTRED MEDICAL HOMES** Also known as the Primary Care Medical Home, care delivery model where comprehensive patient treatment is coordinated through their primary care physician and team-based care providers such as nurses, pharmacists, and social

workers. Care philosophy includes patient-centered, accessible, coordinated with high quality and safety ([www.pcmh.ahrq.gov](http://www.pcmh.ahrq.gov)).

**COMMUNITY ORIENTED PRIMARY CARE (COPC)** The COPC model is a community driven approach that focuses on the distribution of health care resources aligning with local priority health issues. Health promotion and prevention are key features of the model (Gofin, 2007).

## **Chapter One: Introduction and Significance**

Health care is becoming increasingly fragmented, lacking collaboration and continuity, as disease management becomes increasingly specialized and siloed (World Health Organization, 2008). These issues are reiterated in today's context, for example, in the Institute for Health Care Improvement (IHI)'s reports calling for improvement in access to high quality collaborative care (Farmanova et al., 2016). This results in health care systems that are inefficient, expensive and not equipped to handle the potential 'tsunami wave effect' of chronic diseases such as heart disease, diabetes, cancer and mental illness (Millar, Bruce, Cheng, Masse, & McKeown, 2013) in addition to episodic crises such as avian flu or fentanyl overdose epidemics. Effective and efficient health care systems are based on high performing primary care (PC) systems (Akhtar-Danesh, Valaitis, O'Mara, Austin, & Munroe, 2013). As the government of British Columbia (BC) looks to improve health care and to ensure that care is accessible and equitable, collaboration within health care has come to the forefront as a way of 'getting us there' (BC Ministry of Health, 2014; Browne et al., 2012; Hutchison, Levesque, Strumpf, & Coyle, 2011)

One way to improve the effectiveness of our health system in BC is collaboration between PC and public health (PH), (Hutchison, 2013; Institute of Medicine, 2012; Strumpf et al., 2012; Valaitis et al., 2013) due to their combined strengths of patient contact and health promotion. Examples of the positive characteristics of PC/PH collaboration include: (a) care that is driven by an inter professional team approach, (b) more streamlined communication such as referral processes and treatment, such as during communicable disease outbreaks like H1N1 (Hogg et al., 2006), and (d) providing an increased prevention/health promotion focus to PC. Collaboration between PC/PH systems has been shown to be especially beneficial in circumstances where the care delivery and management is complex (Akhtar-Danesh et al., 2013;

Valaitis et al., 2013) including: communicable disease management (National Collaborating Centre for Methods and Tools, 2012; Sherer et al., 2002; Underwood et al., 2009), chronic disease care (Butt, Markle-Reid, & Browne, 2008), complex maternal/child health care (Chao et al., 2010; Morton, Withers, Konrad, Buterbaugh, & Spence, 2015), and especially for care delivery to vulnerable (Appendix A) populations who require multiple health care professionals and have difficulty accessing care (Browne et al., 2009).

The current PC/PH systems in BC have limited collaboration (Millar, 2012). Implementing more collaboration between PC/PH in BC requires a review of workforce, resources, and policy. In relation to workforce, analyzing the nurse's role in system change is warranted due to their relatively large numbers in the health system in BC, role and scope of practice in health promotion, collaboration, chronic disease care (College of Registered Nurses of BC, 2016; Community Health Nurses of Canada, 2009). This study focuses on the registered nurse (RN); the term nurse will be used synonymously with RN. Other nurse designations such as the nurse practitioner (NP) and licensed practical nurse (LPN) will not be included in this review.

There is a clear need to optimize the nurse's role in PC (Martin Misener & Bryant-Lukosius, 2014), with an emphasis on deploying their skills in the areas of population health focus (College of Registered Nurses of BC, 2016), yet, the lack of role clarity of PC nurses impedes this process (Martin Misener & Bryant-Lukosius, 2014). Other limitations to the implementation of nurses in PC/PH collaboration include lack of research about the effectiveness of nurses' roles and capabilities within collaborative PC/PH models (Valaitis et al., 2013; Whitehead, 2009), few reproducible collaborative PC/PH practice models (Hutchison et al.,

2011) and PC structural challenges such as restrictive funding models that inhibit team-based care (BC Ministry of Health, 2015a).

Research can provide evidence of nurses' role in PC/PH in BC to support overall improvement in population health. This research will examine the role of the nurse in PC/PH collaboration in relation to a review of RN scope of practice and activities. As a secondary focus, urban and rural impacts to the RN role in PC/PH collaboration will be considered.

The specific research questions for this study are: 1. based on this scoping review of the literature, what are the roles of registered nurses in PC/PH collaboration? and, 2. Is the current RN scope of practice in BC adequate to support their roles and activities in PC/PH collaboration? I propose that nurses are health care professionals that can be utilized in PC/PH collaboration to provide health promoting, preventive care, and that by working together, access to coordinated quality care will be increased especially by vulnerable<sup>1</sup> populations.

---

<sup>1</sup> For the purpose of this thesis, the term 'vulnerable populations' will be used to refer to those groups of people who often have difficulty accessing timely care due to multiple intersecting issues such as those with stigmatizing health conditions, people stigmatizing health conditions, people experiencing discrimination, populations living on low incomes, people with major mental health issues, people with problematic substance use issues (Browne et al., 2012; Browne, Varcoe, Ford-Gilboe, & Wathen, 2015).

## Chapter Two: Background

Collaboration has been studied for decades by scholars from fields such as nursing, medicine, business, psychology and education and has been touted as a 21<sup>st</sup> century skill (Trilling & Fadel, 2012). Health care reform, driven by the Triple Aim approach<sup>2</sup> suggests a targeted primary and population health approach to drive health care delivery (Canada Health Council, 2013). This has led researcher and policy makers to study collaboration between PC/PH systems as a means to health care improvement (Brandt et al., 2014). Public health's mandate of population level health objectives necessitates development of its collaborative role with other health care sectors in order to see population level health improvement that is integral to improved system performance (Canada Health Council, 2013). Collaboration between PC/PH health systems has come to the forefront as a way to address the complexities of modern societal health from chronic diseases and injury to communicable disease management (Akhtar-Danesh et al., 2013; Taylor, 2014; Valaitis et al., 2013) These afflictions, often rooted and exacerbated in the social determinants of health such as poverty, lack of education, and social isolation (Raphael, Rioux, & Bryant, 2010), would benefit from PH and PC collaboration to create more effective approaches to prevention and treatment.

A well-functioning PC system is considered the foundation of an efficient and effective health care system (Haggerty, Lévesque, Hogg, & Wong, 2013; Hutchison et al., 2011; Starfield, Shi, & Macinko, 2005). Primary care's unique attributes include providing comprehensive, first point of contact care, and a focus on building relationships and coordinating care across other health services (Haggerty et al., 2013). Leveraging PC strengths with PH support can be an

---

<sup>2</sup> The Triple Aim was established in 2007 by the United States Institute of Health Improvement as a health system improvement strategy based on improving care for individuals, health for populations, and lower per capita costs and health equity considerations (IHI, 2016).

effective way to decrease morbidity and mortality through integration of a prevention focus, for example, in the management of chronic and communicable disease, injury, and maternal and child health, and by increasing access to PH expertise in these areas (Valaitis et al., 2013).

Past work provides abundant evidence as to the benefits of PC/PH collaboration (Akhtar-Danesh et al., 2013; Brown & Sullivan, 2013; Ferrari & Rideout, 2005; Jakab, 2013; Lebrun LA et al., 2012; Shim & Rust, 2013; Stevenson Rowan, Hogg, & Huston, 2007a). Recent large Canadian and United States (US) reviews provide some models for practice (Appendix B) (Institute of Medicine, 2012; Valaitis et al., 2013). The following chapter will: (a) define collaboration, (b) outline conceptual frameworks meant to inform implementation of PC/PH collaboration, (c) discuss the importance of PC/PH collaboration and challenges implementing PC/PH collaboration and (e) highlight the gaps in knowledge of PC/PH collaboration.

## **2.1. Defining Collaboration**

Collaborate has its origins in Latin, meaning to ‘work together’. The World Health Organization defines collaborative practice in health care as occurring “when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, caregivers and communities to deliver the highest quality of care across settings” (World Health Organization, 2010, p.13). The Public Health Agency of Canada (PHAC) definition of collaboration is “a recognized relationship among different sectors or groups, which is formed to take action on an issue in a way that is more effective or sustainable than might be achieved by the public health sector acting alone” (Public Health Agency of Canada, 2008, p. 9). Perhaps a combination of the two definitions would be a useful description of PC/PH collaboration in that it requires coming together over a common problem, providing comprehensive services, and that the most effective collaborations occur when all members are

united by an issue that benefits a collaborative effort. The United States (US) based Institute of Medicine (IOM) also recently completed a large scale review of ‘integration’ between PH and PC (summary in Appendix B) (Institute of Medicine, 2012). Their definition of integration moved beyond the WHO and PHAC definitions to include a system level view and stated that integration “promotes overall efficiency and effectiveness and achieve(s) gains in population health” (p.3); the concept of integration ranged from mutual awareness to collaboration with partnership being the highest level of integration. For this study, collaboration will be used as the primary term as it is most dominant in the literature (Price, Greaves, Chan, & Greaves, 2014; Sicotte, D’Amour, & Moreault, 2002; Valaitis et al., 2013).

## **2.2. Conceptual Frameworks of Primary Care/Public Health Collaboration**

There are a number of conceptual frameworks of PH/PC collaboration from the US (Institute of Medicine, 2012; Lasker & Committee on Medicine and Public Health, 1997), and Canada (Stevenson Rowan, Hogg, & Huston, 2007b; Valaitis et al., 2013). Due to size in breadth across their respective countries, the most recent conceptual frameworks of PC/PH collaboration from the US (Institute of Medicine, 2012) and Canada (Valaitis et al, 2013) will be used for the scoping review. Levesque et al. (2013) has provided some critique of the previous conceptual frameworks and this will be briefly discussed.

Recent pan-Canadian research identified a conceptual framework (Valaitis et al, 2013) built on the previous Canadian theoretical framework on interprofessional collaboration by D’Amour, Ferrada-Videla, San Martin Rodriguez & Beaulieu (2005) and Stevenson-Rowan, Hogg and Huston (2007). The previous Canadian frameworks highlight the overlapping responsibilities of PC/PH such as health promotion and the multilevel nature of PC/PH collaboration. The most recent Canadian framework (Valaitis et al, 2013) provides more detail

on the complex multilevel nature of collaboration including systemic, organizational, interpersonal and intrapersonal factors involved in successful collaboration (Appendix B). The systemic level is characterized by governmental regulatory policies providing governance for collaboration as well as targeted professional education and health service structure considerations. The organizational level focuses on strategic communication between partners, and supporting collaborative organizational culture and approaches to service delivery. The interpersonal level supports role clarity, information exchange between professionals, and emotive conditions such as trust and shared values. The intrapersonal level includes personal experience with collaboration, and willingness to collaborate. Highlights of the model include the interdependency of each level and that successful collaborations often have a synergistic result from success at multiple levels; as an example, an organization with strong staff knowledge and ability in collaboration (intrapersonal) would support successful interpersonal collaboration between professionals such as nurse and physician. (Valaitis et al., 2013)

The US IOM has established a recent framework of PC/PH collaboration built on the Lasker model (Institute of Medicine, 2012; Lasker & Committee on Medicine and Public Health, 1997), called Principles for Integration (Appendix B). This framework highlights five key factors in PC/PH collaboration from overarching leadership that clarifies roles, to sustainability through shared infrastructure and data and analysis. The IOM study also detailed three large health issues (maternal/child health, cardiovascular disease prevention, and colorectal cancer screening) as well as geographic case studies of three large US cities identifying models of PC/PH collaboration within each area and citing programs serving distinct populations, disease groups, and lessons learned. Policy and funding levers were also a major area of focus for the review (Institute of Medicine, 2012).

Levesque et al. (2013), similar to Stevenson-Rowan et al., (2007), highlight the shared functions between PC/PH but also look at organizational models that could facilitate PC/PH collaboration. Screening, immunization, and lifestyle modification were the main shared functions found. Optimal models include a community-based, team approach to care to best support PC/PH collaboration.

In both of these frameworks, understanding *who are the key players* is necessary to supporting implementation of PC/PH collaboration. The importance of organizational models and areas of overlap between PC/PH support our understanding of PC/PH collaboration.

Though the foundation of successful collaboration between PC/PH involves nurses and physicians, it also relies upon a variety of health professionals and staff within clinics and organizations to support population health goals. At the local office in both PC/PH systems, a team of clerical, administrative, and technical staff support collaboration efforts (Valaitis et al., 2013). The process of recognizing champions or facilitators (people who show skill in collaborative work), to initiate and sustain collaboration at system, organization, and interpersonal levels was also identified as an important precursor to successful collaboration (Institute of Medicine, 2012; Stevenson Rowan et al., 2007b; Valaitis et al., 2013). It is noted by Valaitis et al. (2013) that nurses play a key role in PC/PH collaborative care, however the IOM report (Institute of Medicine, 2012) and Levesque et al. (2013) do not mention the nurse's role specifically.

Based on work examining PC/PH internationally, a variety of organizational models can facilitate PC/PH collaboration. (Levesque, et al, 2013) For example, Community Health Centres (CHC) (Canada)/Academic Health Centres (US) could be considered models that demonstrate collaborative PC/PH practice (Valaitis et al., 2013; IOM, 2012), since these models are likely

already practicing in some collaborative manner between PC/PH. These models of care increase interprofessional approaches to care delivery and provide the structure for the health care team to work together.

Canada has three large PC/PH organizational models that can support PC/PH collaboration: 1. CHC's which are public organizations providing PC and health promotion to individuals, families and communities, 2. Quebec's Health and Social Services Centre's (HSSC), which merges acute care, long term care and CHCs, and 3. Family Health Teams in Ontario that provide multidisciplinary PC (Sicotte et al., 2002; Stevenson Rowan et al., 2007b). Working with these existing models can support future collaboration between PC/PH (Institute of Medicine, 2012; Levesque et al., 2013; Valaitis et al., 2013)

Six key areas of overlap between PC/PH, suggested by Levesque et al., (2013), provide optimal targets for collaborative work and include: 1. Health services based on population health needs. 2. Evaluation of care of patients and communities. 3. Advocacy for healthy communities, equity, and access. 4. Organization of immunization campaigns. 5. Clinical screening and early prevention. 6. Clinical promotion of healthy lifestyle. Valaitis et al., (2013) stated that communicable disease control, chronic disease prevention and management, parent child programming, youth health and women's programs were the most common health issues addressed in PC/PH collaboration. Identification of areas for shared work between PC/PH can provide the impetus for action through health policy provision, implementation of organizational models that support shared functions, and health professionals working closely together within their scopes of practice. In the US both CHCs and Academic Health Centres use secondment of public health nurses (PHNs) to PC for infection control and child health initiatives (Stevenson Rowan et al., 2007a). In Canada, PC/PH collaboration occurs primarily at local levels. Examples

specific to nursing roles include practice facilitation models where PH nurses provide assistance to PC practice in communicable disease management (Hogg et al., 2006).

### **2.3. Importance of Primary Care/Public Health Collaboration**

Examining PC/PH collaboration from the lens of the Triple Aim suggests that increased collaboration could: (a) improve access to and coordination of health care, especially for vulnerable populations who experience a disproportionate amount of morbidity and mortality (Raphael et al., 2010; Valaitis et al., 2013), (b) increase efficiency and cost effectiveness of the health care system through reduction in disease and streamlining of services (Butt et al., 2008; Hutchison, 2013), and (c) improve overall population health with population level health goals embedded in the PC system (Millar, 2012). Optimizing collaboration between PC/PH will not only improve the three large aforementioned goals but will provide a synergistic effect of lowered overall health system requirements with reduced disease (Whittington, Nolan, Lewis, & Torres, 2015).

At the individual patient level, collaboration between PC/PH systems increases accessibility to health promotion and injury prevention programs (Valaitis et al, 2013), maternal/child health programs and communicable disease care (Institute of Medicine, 2012; Price et al., 2014) especially by vulnerable populations (G. Browne et al., 2009). Examples of this include: (a) interdisciplinary falls prevention programs for frail seniors (Markle-Reid, Browne, & Gafni, 2013; PHAC, 2014), (b) PH communicable disease clinics such as Richmond BC's Gilwest Hepatitis/HIV Clinic (VCH, 2015) staffed by PHNs, physicians, pharmacists, and social workers; or (c) the pediatric partnership program where nurse practitioners work with PH to support Vancouver's vulnerable families (Wong, Lynam, Khan, Scott, & Loock, 2012).

Through these integrated programs, care has been shown to be more coordinated, accessible and effective especially for vulnerable individuals.

Preventive care that is coordinated is less expensive than reactive care (Markle-Reid et al., 2006, 2010) and coordination of care has been shown to reduce overall government costs by reducing the frequency of: (a) use of services, (b) use of high cost services, and (c) reduction in the severity of their disease (G. Browne et al., 2009). Some models also identified cost savings through less duplication of services such as streamlining immunization programs to PH clinics rather than both doctors' offices and public health clinics (Valaitis et al., 2013). Overlap of services by PC/PH could include maternal/child care, communicable disease management, women's health, youth health and chronic disease prevention and management (Stevenson Rowan et al., 2007b; Valaitis et al., 2013).

To achieve the third goal of the Triple Aim approach, the focus on acute episodic illness care must be rebalanced with an increased shift to prevention and health promotion (BC Ministry of Health, 2014; PHAC, 2010). The effects of chronic disease and injury dominate health care budgets in BC (BC Ministry of Health, 2014), and though BC experiences a higher life expectancy than the national average 81.7 versus 81.1 years, subgroups such as aboriginal, frail elderly, and those experiencing the effects of multiple social determinants of health (SDOH) experience a disproportionate amount of the chronic disease and injury (BC Ministry of Health, 2013, 2014; Raphael et al., 2010). As Butt, Markle-Reid, & Browne (2008) explain, "the multiple and complex needs of chronic illness require a combination of health and social services...(that) extend beyond traditional acute episodic care and services of any single organization" (p. 2). Collaboration between health care systems with a population level approach can improve care to these populations.

## **2.4. Challenges Implementing Collaboration between Primary Care/Public Health**

Valaitis et al.'s (2013) framework draws attention to multiple levels of collaboration at systemic, organizational, and inter and intrapersonal levels. Past work suggests there are challenges in implementing collaboration at each of these levels (Bruner, Waite, & Davey, 2011; Butt et al., 2008; Davies, 2012; Henneman, 1995; Oandasan et al., 2009; Zwarenstein & Reeves, 2002).

**2.4.1. Systemic level.** Levesque et al. (2013) also posit that systemic factors beyond the health system, such as political, economic, and social context “can potentially have a major effect on the vision of primary care and public health interaction” (p. 20) and that the PC/PH model implementation are strongly affected by these factors. The economic environment can place increased pressure to reform the health care system, by improving performance through streamlining systems, decentralization, and strengthening the PC/PH collaboration as seen in the collapse of the Greek economy (Kousoulis, Angelopoulou, & Lionis, 2013) This can also be seen in Canada with federal and provincial concerns over escalating health care costs (Hutchison et al., 2011; Strumpf et al., 2012) and in BC’s rural areas where less resources are available (BC Ministry of Health, 2015b).

Political challenges in health policy change are complex and include a society’s tolerance for collective versus individual rights or liberal or conservative ‘national mood’ (Oliver, 2006). Oliver (2006) states that “even when there is broad consensus on the severity of a public health problem and the appropriateness of governmental action, there is a strong tendency for political leaders to adopt incremental policy changes rather than comprehensive reforms” which “causes them to build on existing policies and programs rather than attempt system-wide reform” (p. 203-4). Large policy innovation can occur if there is an “abrupt shift in how a problem is

perceived or in who controls the levers of government power” (p. 216) or if the policy advocates can align the solution with political priorities and public opinion. In order to affect PC/PH collaboration, policy solutions must align with current government leanings such as collective versus individual responsibility for health care, power of citizen and professional health groups, and general public opinion.

Beyond government politics, there is a social context created by the historical power and influence of health care professionals dating back to the origins of Medicare where the physician became the dominant health care professional, especially in PC systems (Raphael et al., 2010). Beyond historical significance, PC also has been described as a highly contested domain of practice (Raphael et al., 2010), partly due to the fee for service system that rewards the volume of patient interactions. At the system level, challenges vary from infrastructure issues such as data management system incompatibility, to historical and political challenges (Aggarwal & O’Shaughnessy, 2014). Inadequate health infrastructure, policy, and investment to achieve population health objectives lack alignment to develop an integrated system of PC/PH (Institute of Medicine, 2012). According to Valaitis et al, (2013), structural challenges also include misaligned compensation models between PC and PH that can limit collaboration. Structural components that facilitate collaboration include overarching leadership above both PC/PH systems, and community involvement infrastructure (Institute of Medicine, 2012; Valaitis et al., 2013). In the UK, while PH has been integrated into local PC management areas, PH experiences continued competition for funding and integration at the local level (Heller, Edwards, Patterson, & Elhassan, 2013). This provides a good example of how overarching structure and vision are only part of the necessary structural considerations for PC/PH collaboration.

**2.4.2. Organizational level.** At the organizational level structural ‘islands’ between PC and PH, where there is no organizational meshing, inhibits collaboration (Aggarwal & Hutchison, 2012). This siloed structure creates many problems including a lack of understanding of the functions of each area which impact horizontal and vertical care transitions.

**2.4.3. Interpersonal level.** The interpersonal level may be the most significant promoter of collaborative work (Suter et al., 2009) and consists of role clarity, effective communication, trusting and inclusive relationships, shared values, beliefs and attitudes and effective clinical decision processes (Apker, Propp, Zabava Ford, & Hofmeister, 2006; Braithwaite, 2010; Bruner et al., 2011; Lindeke & Sieckert, 2005; Van Ess Coeling & Cukr, 2000). As an example, the Doctors of BC cited concern about allied health professional’s scope of practice and responsibility in multidisciplinary primary care (BC Medical Association, 2011). Moving to more collaborative care in BC will involve working on role clarification between professions and within professions such as nursing. Role clarification between the five distinct nursing groups: Licensed Practical Nurses (LPN) (College of Licenced Practical Nurses of BC, 2015), Registered Psychiatric Nurses (RPN) (CRPNBC, 2015), RNs, Clinical Nurse Specialists (CNS) (Bryant-Lukosius et al., 2010) and NPs (College of Registered Nurses of BC, 2013)) is integral to supporting collaborative care (Akeroyd, Oandasan, Alsaffar, Whitehead, & Lingard, 2009; Akhtar-Danesh et al., 2013; Besner, Drummond, Oelke, Mckim, & Carter, 2011; Oelke, Wilhelm, Jackson, Sutter, & Carter, 2012; White et al., 2008). To enable optimization and integration of these unique nursing subgroups to their full scope of practice, they must have clearly delineated roles and scope of practice that is articulated both within and beyond the profession’s boundaries (Mildon, 2013).

Professionals who are used to working autonomously find working in a team environment challenging (Chaudry, Polivka, & Kennedy, 2000; Coluccio et al., 1983; D'Amour, Ferrada-Videla, San Martin Rodriguez, & Beaulieu, 2005; Sicotte et al., 2002). The concept of sharing patient care causes barriers to PC/PH collaboration (Henneman et al., 1995; Hutchison et al., 2011; Pearson & Pandya, 2006; Sicotte et al., 2002). Complications with sharing from the physician perspective include: liability, concerns over other health professionals' scope of practice, accountability of patient care, and funding (BCMA, 2011). Physicians, considered the founding primary care provider in the Canadian health care system, are used to an autonomous dominant role in the PC system. Physicians, being asked to share their authority and power by engaging in more shared care relationships has contributed to the slow uptake of collaborative health care models across Canada (Hutchison et al., 2011). The lack of sharing between physicians and other health care professionals such as midwives has been described as 'turf protection' (Peterson, Medves, Davies, and Graham, 2007). The lack of trust in sharing patient care with other health professionals, current payment structures, compounded with autonomous providers results in less inter professional collaboration (McDonald, Jayasuriya, & Harris, 2012). PC in BC is predominantly provided by solo or group practice physicians (Aggarwal & Hutchison, 2012), thus increasing collaboration between PC/PH systems will require inter-professional training to support communication, building of trust, and clarification of roles (Suter et al., 2009) to support shared power between physicians and other health care professionals.

**2.4.4. Intrapersonal level.** Intrapersonal level challenges include personal values, beliefs, knowledge and skills. These challenges were evident in Quebec's collaborative PC centres including challenges with professional autonomy, negative group internal dynamics, and conflicting values and beliefs between health care professionals (Sicotte et al., 2002).

Interventions such as mandatory pre licensure inter professional education (Reeves et al., 2008; World Health Organization, 2010) can support improving awareness of collaboration, developing the ‘collaborative practice-ready health care worker’ (WHO, 2010). By shifting the way health care professionals think about and react with one another, the culture and attitudes will change (WHO, 2010).

Shifting the structure and culture towards more collaborative care requires strong government, health authority, and professional association leadership to enact the needed training, policy, and funding changes (Chaudry et al., 2000; D'Amour et al., 2005; Henneman et al., 1995). Choosing to build on areas of success and having strong government and local management in supporting intra/interpersonal knowledge on collaboration will be essential in improving PC/PH collaboration in BC.

## **2.5. Gaps in Knowledge**

Although much work has been done in Canada, an overarching conceptual framework to guide large-scale implementation of PC/PH collaboration remains to be adopted and significant gaps remain.

**2.5.1. Gaps to the conceptual frameworks.** These gaps include a more detailed examination of the roles and activities of key players in collaborative teams and more specific detail on how nurses’ role could be utilized in collaborative PC/PH systems. Beyond the focus of professional issues, understanding the patient is essential for successful collaborative efforts specifically identifying the patient’s perspective on collaboration, as well as what patient groups benefit the most from this collaboration. Identifying and understanding the differences in rural and urban PC/PH collaborative efforts with respect to specific patient populations, the role of the community, and professional roles will also be necessary in BC due to geographical

considerations. Understanding the role of the formal and informal community and access to health care and health promotion especially in specific patient groups is an area of further study.

**2.5.2. Gaps from previous work.** Gaps from previous work include further understanding of the best way to support structural changes to improve PH/PC collaboration in the health system and also identifying factors that constrain and support the integration of PH into PC settings. In the UK, challenges with meshing PH into the PC setting continue today 14 years after initial implementation from role challenges to funding pressures to problems with outcome measurement (Royal Society for Public Health, 2015). Identification of ways to ensure dedicated funding of PC/PH collaboration needs to be studied as many of the previous efforts in Canada were ad hoc and short term funded projects. Identification and measurement of outcomes in PC/PH collaborative efforts may support long term funding. Identification of compensation models to support PC/PH collaboration must be conducted, as it is a barrier to system change. From challenges identified in the UK's PH integration into PC (Heller et al., 2013), studying the adoption and understanding of the PH role in PC would support successful integration.

Though much has been studied on PC/PH collaboration, large gaps remain in our understanding of PC/PH collaboration. More study is needed in areas ranging from professional role clarification, understanding the role of the community in PC/PH collaboration, and gaining more understanding from the patient's perspective about collaboration.

## **2.6. Public Health and Primary Care in BC**

In the section that follows, I briefly outline the PH and PC systems in BC.

**2.6.1. Public health.** Public health has a long history in Canada, and has been a major contributor to our nations increased life expectancy and quality of life through the eradication of disease by increased sanitation and vaccine development (Millar, 2012). In his recent 2014

report, the Chief Canadian Public Health officer identified communicable disease, chronic disease and aging (Taylor, 2014) as Canada's top health concerns. The identification and prioritization of chronic disease prevention and management has started the discussion about how PH could assist the BC health care system achieve these goals (BC Ministry of Health, 2014, 2015a; Brown & Sullivan, 2013; Millar, 2012). This new mandate will challenge government, PH health administrators and workforce to provide care in new ways (Hutchison, 2013; Institute of Medicine, 2012; Millar, 2012; Millar et al., 2013; Valaitis et al., 2013).

**2.6.1.1. Governance and structure.** Public health in BC is governed by the provincial Public Health Act, which has been recently updated in 2009 to include stronger legal powers for the administration of health promotion activities, communicable disease management and environmental monitoring. In BC, as across Canada, Public Health is highly structured and organized through a chain of command system from local PHNs and local Medical Health Officer's (MHO) serving small geographic areas up to the one provincial MHO and the Ministry of Health's PH Division. Constitutionally, PH is under provincial and territorial jurisdiction for legislative, regulatory, human resource planning and facilities management and the work is rolled out through the Health Authorities (Canadian Public Health Association, 1997). In BC's Ministry of Health, the Population and Public Health Division regulate PH activities and advise both government and health authorities. The Provincial Health Officer (PHO) is a senior PH physician and is a required position under the Public Health Act. The PHO provides guidance to governments and health authorities through the various MHO positions that are geographically distributed to provide leadership to Public Health at the local level. To note at the health authority level, the Provincial Health Services Authority is provincial in scope and provides specialized services such as the BC Centre for Disease Control (BCCDC) which integrates with

the other health authorities to roll out communicable disease and environmental health policy and directives such as the large immunization programs and communicable disease surveillance mandates (MOH, 2014c).

Funding for PH in BC is part of the BC government's health care budget. Public Health (population health and wellness) accounts for approximately 3% (536 million of the 12.6 billion dollar) of the health care budget (Auditor General of British Columbia, 2013).

**2.6.1.2. Workforce.** The PH workforce in BC is comprised of three levels of employees, 1. consultants/specialist such as Epidemiologists, Environmental Health Scientists, and Nurse Practitioners who hold advanced specialist training to support front line providers; 2. front-line PH providers include PHNs, Environmental Health Officers, PH Dieticians, Dental Hygienists; 3. PH managers - include Medical Health Officers and Public Health Administrators. The largest sector of the PH workforce is PHNs. (PHAC, 2008).

**2.6.1.3. Strategies & mandates.** Public health core function programs and strategies are outlined in Table 1 (BC Ministry of Health, 2013).

Table 1. BC Core Public Health Programs

Strategy	Core PH Programs	Examples
Health Improvement	Healthy Living, Wellness and Chronic Disease Prevention Maternal/ Child Health	PH breastfeeding support Postpartum mental health assessment and support Dental screening
Prevention of Disease and Injury	Communicable Disease Management and Prevention of Disease Injury prevention Prevention of Abuse/Neglect	BCCDC immunization programs, Insite safe injection/harm reduction program
Environmental Health	Healthy Built and Natural Environments (Air, Water, Food safety)	Food inspection, air pollution monitoring.
Public Health Emergency Management	Preparation, Response, Recovery, Mitigation	Pandemic influenza planning

**2.6.1.4. Rural issues.** Rural health and urban discrepancies exist in the health care system and in population health. Rural considerations include larger geographic service areas (Table 2), access to care, and a larger aboriginal population (BC Ministry of Health, 2015b). Populations in rural BC suffer a disproportionate amount of provincial chronic diseases. The Northern Health Authority has the highest provincial rates of hypertension, coronary vascular disease and asthma. The Interior Health Authority has the highest provincial rates of depression/anxiety, osteoarthritis, rheumatoid arthritis and chronic obstructive pulmonary disease (Fang, Kmetc, & McCarney, 2010).

Table 2. A Geographic And Population Comparison Between A BC Rural And Urban Health Authority

	Northern Health	Vancouver Coastal Health
Service area	600,000 km <sup>2</sup>	58, 560 km <sup>2</sup>
Population	300,000	1,000,000

Differentiation in scope of practice of urban and rural nursing has not been clearly identified in the literature (MacLeod, Kulig, Stewart, Pitblado, & Knock, 2004) though we do know that rural health service challenges have forced health care delivery in BC in new ways such as telephone/videoconference care (Telecare) (PHSA, 2015) and nurses working at advanced scope of practice (MacLeod et al., 2004). BC's Interior and Northern Health Authorities, challenged with large rural geographic areas and improving access to PC, have already embraced more alternative PC models such as nurse-led PC and collaborative care models such as the Patient Centred Medical Home (PCMH) concept (Appendix A) (Northern Health, 2015). Starting PC reform in the rural areas will enable the government to build on areas of success.

The PH workforce services remote communities through monthly to yearly outreach by vehicles and aircraft allowing for more full scope and independent practice. Remote PH practice include the PHN providing monthly immunization service to a remote community, coordinating emergency communicable disease management such as in an influenza pandemic, and managing complex maternal/child client care situations.

**2.6.2. Primary care.** Primary care is defined as the point of first contact into the health care system (Appendix A) and its reform is under increasing scrutiny worldwide as a way for health care system improvement (WHO, 2008). Strong community-based PC is essential to keep people healthy, out of hospitals, and support them to manage their chronic illnesses (Starfield,

2008). Strong PC is characterized by accessible, equitable, efficient, person centered, comprehensive care and results in better outcomes, including more equitable care at decreased cost (Aggarwal & Hutchison, 2012; Hutchison, 2013; Strumpf et al., 2012).

**2.6.2.1. Primary care governance and structure.** The BC Ministry of Health governs PC in BC, and physicians are the main PC provider in BC. There are a number of legal agreements that detail the relationship between the BC government and Doctors of BC (which represents the financial and continuing education for physicians) in providing PC to the province. Primary care services in BC are generally non-structured and run by physicians who are small business owners. Primary care improvement programs are administrated through the General Practice Services Committee (GPSC) and the Divisions of Family Practice.

The GPSC is a partnership between the BC Ministry of Health and the Doctors of BC to encourage and enhance full-service family practice (General Practice Services Committee, 2015) and is being accomplished through four major programs shown in Table 3.

Table 3. Programs of the General Practice Services Committee

GPSC Programs	Examples
Full Service Family Practice Incentive	Shared care networks Compensation for complex care clients Chronic disease prevention and management Collaborative mental health care
Practice Support Program	Physician and medical office assistance training to improve efficiency and support enhanced delivery of PC.
Division of Family Practice	Community based affiliations of family practice, working on community level issues

The divisions are geographically determined, voluntary associations, where independent practitioners can work together on larger community issues

(<https://www.divisionsbc.ca/provincial/home>). For example, the Chilliwack Division, has a number of initiatives on its website, such as a support line for unattached patients, links to health promotion websites, and YouTube videos on its rural primary care initiatives (<https://www.divisionsbc.ca/chilliwack>). Higher-level collaboration is also achieved through the divisions' linkage to collaborative services committees whose function is to “bring physicians, the B.C. Medical Association, the ministry, health authorities and communities together to make decisions about local services” (BC Ministry of Health, 2014, p. 18).

Moving beyond physician driven PC reform, the Ministry of Health is increasing its leadership to “push the boundaries” (p.6) for multidisciplinary primary and community care models of service delivery” (MOH, 2015, p. 14). Initial change will be targeted to rural and remote health care service areas where leadership teams (with accountability and authority) will support this new push forward with a “policy framework... developed in collaboration with the GPSC, with the objective that individuals/families will be incrementally attached to the team

practice rather than an individual practitioner” (MOH, 2015, p.8). This policy action is supported by Akhtar-Danesh et al., (2013) who state that “primary care governance arrangements, whether at the local, regional or provincial/territorial level, need to include a broad range of primary care providers and stakeholders to promote collaboration and to provide a forum in which competing interests can be identified, explored and resolved” (p. 22). These large changes to BC’s PC system require assessment of human resources, and funding changes to ensure successful transformation.

**2.6.2.2. Primary care workforce.** General Practitioner (GP) physicians generally provide PC in BC (see Table 1). NPs and RNs, though small in numbers, also provide primary care; especially in rural and remote areas (MacLeod et al., 2004). Funding for physicians in primary care is mainly through fee-for-service (GPSC, 2015) and incentive payments, though it can be released through four methods as outlined in Table 4. Funding for RNs and NPs is typically through salaried positions.

Table 4. PC Funding Models In BC (BC Auditor General, 2013)

Model	Method
Fee-for-service	Payments provided to physicians for services
Alternate payment	Contracted, sessional, or salaried physicians
Medical on call availability	Emergency on call coverage for unassigned patients
Rural funding	Programs for recruiting and maintaining physicians in rural areas

Fee-for-service is a restrictive remuneration system for care provided by physicians (Aggarwal & Hutchison, 2012; Hutchison, 2013). Flexible funding models such as salary or blended salary and FFS models are better able to support team-based PC and also promote quality improvement (Hutchison, 2013; Naccarella et al., 2008; Starfield, 2008). In BC, incentive programs are the primary method of PC system financial reform, and are used to increase GP

care of more time consuming patients (complex care for frail and elderly, palliative care, maternity care), and for programs such as the GP Care Conferencing; however, incentives alone may not provide the stimulus for PC change (Kiran, Victor, Kopp, Shah, & Glazier, 2012; Lavergne, Peterson, Mckendry, Sivananthan, & Mcgrail, 2014).

**2.6.2.3. Rural issues.** Rural PC challenges, similar to PH, include geographic challenges as well as low health professional resource supply, disproportionate chronic disease and increased challenges in accessing care (BC Ministry of Health, 2015b). Integrated PC and community care is the foundation to rural care (BC Ministry of Health, 2015b) and generalist practice is a ‘practical reality’ (p. 3) for rural areas. Primary maternity care presents unique challenges in rural areas due to the remote nature and challenges in accessing qualified health care professionals (BC Ministry of Health, 2015b; Munro, Kornelsen, & Grzybowski, 2013). Ensuring all allied health care professionals are involved in care and at full scope of practice is one way the BC government is looking to improve care. Community nurses provide much of the PC in rural/remote areas in BC and work to full scope of practice and with specialized certification (Figure 1) (MacLeod et al., 2004; Wong, Watson, Young, Mooney, & MacLeod, 2006). Use of telehealth<sup>3</sup> for PC delivery is of key interest. Current BC PC reform in rural areas will focus on implementing integrated multidisciplinary PC practices in each of the rural communities (BC Ministry of Health, 2015b).

---

<sup>3</sup> Telehealth – Telehealth is the use of live videoconferencing, run by the PHSA in BC (<http://www.phsa.ca/health-professionals/professional-resources/telehealth/what-is-telehealth>)

**2.6.2.4. A comparison of primary care/public health workforce.** The comparison chart below (Table 5) provides a summary of health human resources, in PC and PH, their core activities, how they are organized, and how they are paid.

Table 5. Primary Care and Public Health Registered Nurse/Physician Workforce in BC

Comparator Workforce	Primary Care		Public Health	
	Physician	Physician/RN	Public Health Nurse	Medical Health Officer
Employer	Private-FFS	Health Authority	Health Authority	Health Authority
General Practice / Targeted Programs	Generalist practice	Generalist (Remote practice) Targeted (Urban Specialty Clinics)	Targeted Programs	Targeted Programs
Level of Intervention	Individual level Family level	Individual level Family level	Individual level Family level Population level	Population level
Roles	Disease and injury prevention Disease diagnosis and treatment Health surveillance	Health promotion Disease and injury prevention Diagnosis and treatment of disease Health Surveillance	Health promotion Disease and injury prevention Health protection Health surveillance Population health assessment Emergency preparedness Leadership	Health promotion Disease and injury prevention Health protection Health surveillance Population health assessment Emergency preparedness Leadership
Payment schemes	Fee-For-Service	Salary Alternate Payment	Salary	Salary

## **2.7. Nursing.**

This section specifically focuses on the largest numbers of nurses in PC/PH, the role of the registered nurse. Nurses are uniquely positioned to increase collaboration between PC/PH due to their scope of practice and skills sets (Kemppainen, Tossavainen, & Turunen, 2013; Richard et al., 2010; White et al., 2008; Whitehead, 2009). Further analysis of the nursing workforce must be conducted, due to its large size and potential for system change (Whitehead, 2009). Nurses are the largest health care professional across Canada at 287,344 in 2010 with 7.7% (22,139) working in ambulatory care in Community Health Centres (CHC) and 1.9% (5473) in physician's offices (Canadian Nurses Association, 2012b). In the PH role, nurses account for 2.8% (7482) of the total nursing workforce (Canadian Nurses Association, 2012a). Nurses make up the largest part of the PH workforce but only a small fraction in PC in BC.

Using nurses' strength in numbers and broad scope of practice, the nurse's role in improving health services needs to be addressed. Having multidisciplinary knowledge, health knowledge of diverse ages, a focus on the SDOH, understanding of epidemiology and disease processes, communication and teamwork skills (Kemppainen et al., 2013) provides a foundation for nurses to be key players in PC/PH collaboration.

Health areas that could be targeted for nurses' roles in collaborative PC/PH efforts include activities such as: (a) maternal/child screening and referral ( Wong et al., 2012), (b) STI/communicable disease screening and referral (National Collaborating Centre for Methods and Tools, 2012; Shalala, 1998; Sherer et al., 2002), (c) increasing access to PC by using nurses outreach capabilities especially to vulnerable populations (Liddy et al., 2011; Markle-Reid et al., 2013; Su, Khoshnood, & Forster, 2015), and (d) chronic disease prevention and management (Goodman, Davies, Dinan, Tai, & Iliffe, 2011).

Employers, such as the health authorities in BC, decide on nurse’s roles based on their organization’s need and the employers must ensure clear guidelines and support tools are in place for nurses to practice the activities needed to carry out their roles within their scope of practice. Registered nurses, regulated by the Health Professions Act, are governed by regulatory boards who regulate and identify nurse’s scope of practice along with the government of BC (College of Registered Nurses of BC, 2016). The College of Registered Nurses of BC (CRNBC) divides the RN scope of practice into General Practice, Certified Practice and Restricted Activities (Table 6) based on their complexity and potential harm to the patient. Nurses must recognize which activities they are performing if their roles fall into General Practice, and which tasks require further education or decision support tools. Nurses’ roles and scope of practice must be regularly reviewed to ensure that nurses are functioning to maximum capacity and meeting the needs of the health care system (White et al., 2008).

**Figure 1. BC RN Scope of Practice (College of Registered Nurses of BC, 2016)**

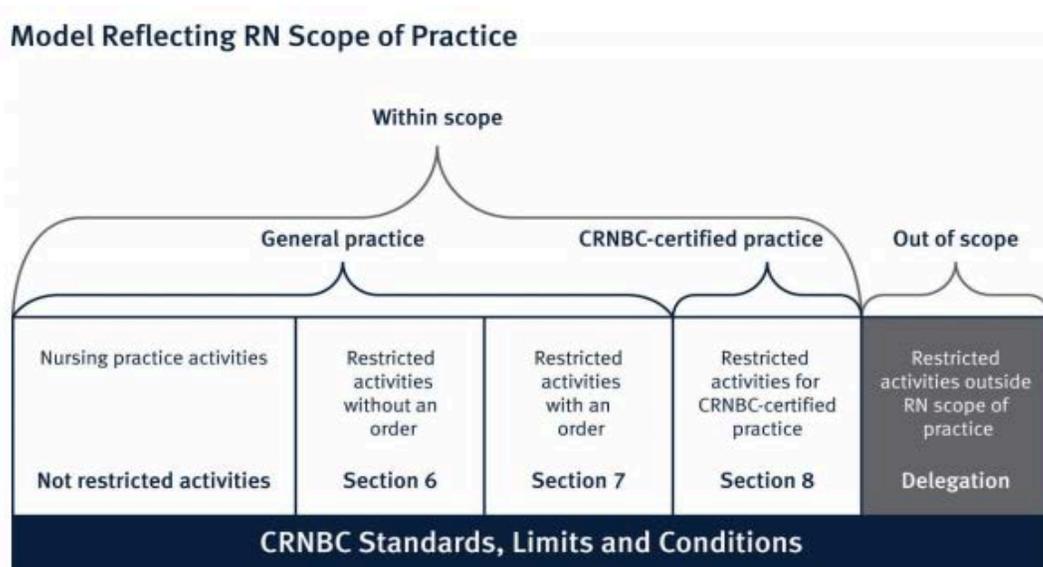


Table 6. BC RN Scope of Practice and Activities

General practice		CRNBC Certified practice
General activities	Restricted activities with and without an order	Certified practice activities
Carrying out an ECG	Without an order	First Call
Pronouncing death	Wound care	Diagnose and treat minor acute illnesses (otitis media, impetigo)
Blood glucose screening	Diagnose a condition	
	Intravenous	
	Inhalation	
Administering/recommending Schedule 3 drugs (e.g. Tylenol)	Nutrition via enteral instillation	Reproductive Health
	Injection	Diagnose and treat STIs
		Provide birth control
Taking a swab for C&S	With an order	Remote Practice
Administering emergency contraceptive medication (with decision support tool)	Harvesting veins	Includes First Call (with more illnesses included) & Reproductive Health
	Allergy testing	

**2.7.1. Public health nursing.** The largest group of public health professionals in BC is Public Health Nurses (PHN) (PHAC, 2010). In Canada, the name of a PHN or Community Health Nurse (CHN) can be used interchangeably. For the purposes of this study, PHN will be used.

Most PHNs in BC work under the direction of the health authorities and work within the PH system under Medical Health Officer (MHO) and PH managers. PHNs work alongside of other PH colleagues including, dietitians, dental hygienists, speech and language pathologists, and tobacco reduction specialists. Public health nurses are usually co-located with other PH programs within a community health centre (CHC). Public health nurse roles and activities, driven by government mandates (BC Ministry of Health, 2005) include immunization programs in clinics and schools, maternal/child health such as postpartum home visitation, communicable

disease prevention, and community health promotion initiatives. Through these programs, PHNs work independently and in teams, to provide the care to the community both in CHCs and in community centres, schools and with other community partners (Stamler & Yiu, 2012).

Recently Public Health Agency of Canada (PHAC) and the Community Health Nurses of Canada (CHNC) have clarified the role of PHNs (CHNC, 2009, PHAC, 2010). PHNs focus on populations or sub-populations who have similar health needs, use a community assessment process to drive health promotion strategies, engage with the SDOH in their work, work within all prevention levels with a focus on primary prevention, and consider all levels of practice in their work from individual level up to a population and systems level (PHAC, 2010).

Public health nurse role in population health and prevention supports their role potential as a necessary health care professional in PC/PH collaboration, PHNs are key players in initiating, promoting and supporting collaborating care environments through leadership roles within organizations and communities, establishing collaboration and partnership between agencies and health care professionals, working within a social justice and equity lens, applying knowledge of population level health needs and expertise in outreach, and interfacing with the PC system (Public Health Agency of Canada, 2008). The PHN role and activities are summarized in Table 7.

Table 7. PHN Roles and Activities (Community Health Nurses of Canada, 2009; Public Health Agency of Canada, 2008).

PHN Roles	PHN Activities	
Health Promotion	Advocacy	Consultation
Disease and Injury Prevention	Capacity Building	Facilitation
Health Protection	Builds Coalitions	Health Education
Health Surveillance	Counseling	Health Threats
Population Health Assessment	Case-Management	Leadership
Emergency Preparedness	Communication	Policy Development
	Community Development	Referral
	Surveillance	Screening
	Team Building/Collaboration	Immunization

Over the last few decades, changes to PHN roles have been seen from political and economic, to structural and internal challenges (Falk-Rafael & Betker, 2012). PHNs have increasingly shifted their work from population-level interventions such as community health programming to task-oriented individual-focused work such as in immunization clinics and medically-focused postpartum early discharge programs (A. Falk-Rafael & Betker, 2012; Schofield et al., 2011; Underwood et al., 2009). Many authors point to the dissatisfaction by PHNs with the change in role because they are working against their profession's foundational premise as a community base prevention and health promotion care provider (A. Falk-Rafael, 1999; Underwood et al., 2009).

Public health nurses, with their role as initiators and maintainers of collaborative and health promoting care, could support improving PC/PH collaboration in BC (Schofield et al.,

2011). Nurse's roles and large numbers in the PH system provide a possible solution to PC/PH collaboration; examining the PC nurses' role in PC/PH collaboration reveals the variations between the PC and PH systems.

**2.7.2. Primary care nursing.** The role of PC nurses across Canada has over a 100-year history providing care to indigent and rural populations but as medical care became more established, the role of the nurse as primary and continuous point of medical care contact diminished (Victorian Order of Nurses, 2016). The exact number of nurses in the PC setting in Canada or BC has not been identified, however Martin-Misener and Bryant-Lukosius (2014) estimate two to eight percent of the Canadian nursing workforce works in PC settings. Currently, PC nurses practice in a variety of settings including Community Health Centres, Fee-for-service clinics, Family Health Networks, and in health service organizations. The role of the PC nurse is described in the literature as a generalist specialist providing 'cradle to grave' care across the lifespan and there is great diversity in nursing practice in PC (Allard, Frego, Katz, & Halas, 2010; MacLeod et al., 2008). The roles and activities of PC nurses are infrequently reported in articles that evaluate PC models (Martin-Misener et al, 2014), however, the Canadian Family Practice Nurses Association has developed a role framework that is used across Ontario (Table 8). Based on the RN's fulsome scope of practice, the potential role for the PC nurse is broad, from health screening such as pap tests to group diabetes teaching to community outreach and case management (personal communication, February 10, 2016, B. Wilson, Practice Consultant, CRNBC).

Table 8. PC Nurse Roles and Activities (Canadian Family Practice Nurses (n.d.))

PC Nurse Roles	PC Nurse Activities	Examples
Health assessment	Provide focused and general assessments Assess the need for medication management, screening, monitoring, diagnosing, triage	Diabetes screening
Health education	Assess education requirement and readiness of patients Acquires/develops teaching tools Uses a variety of modalities e.g. Group, written, visual	Smoking cessation, inhaler use, asthma care, nutrition, diabetes management
Professional role and responsibility	Maintains adequate education and acquires knowledge as needed such as community services, social services, medical referrals Participates in research and conference presentations Provides leadership in areas such as chronic disease management, reproductive health, shared care models.	
Health care management	Initiates/contributes to a health plan in collaboration with patient and interdisciplinary team Discusses treatment options and involves patient in self-management Discusses test results Coordinates services Provides home visits as needed	Lifestyle counseling, chronic disease management, suturing, injections, wound care
Health promotion	Assesses community to enhance health and assess areas of vulnerability alone or with Public Health Collaborate to develop health promotion and screening programs	Cervical cancer screening, hypertension, Diabetes screening

BC's PC nurses are few in number and mostly provide specialized generalist care. The majority of BC's PC RNs practice in Health Authority PC clinics located in CHCs in rural and urban areas, in small rural hospital emergency rooms, and in outpost clinics run by the First Nation's Health Authority (Wong et al., 2006). In BC, urban health authority PC clinics provide specialty care to vulnerable populations. Examples of this include: Three Bridges Community Health Centre Transgender focused clinic (<http://transhealth.vch.ca/>); Raven Song Primary Care Clinic for complex care clients (<http://www.vch.ca/about-us/news/archive/2014-news/new-primary-care-clinic-opens-at-raven-song>); and partnerships with non-profit agencies such as the Portland Hotel Society (<https://www.phs.ca/index.php/project/portland-primary-care-clinic/>) which provides care to clients' with multiple comorbidities including mental health and addiction in collocated residential supported housing sites. Generally, in BC, there is an inverse relationship with number of nurses and physicians in PC settings, in rural areas there are more PC RNs in areas with fewer GPs and the opposite is seen in urban areas (Wong et al, 2006).

Challenges to PC RNs practice include lack of role clarity for the PC RN role that is also complicated by confusion between the RN and LPN role (Besner (2010); nurses not working to full scope of practice (Akeroyd et al., 2009); dispersed locations of practice; small numbers, and remote practice fragmenting practice support (MacLeod et al., 2008); and lack of training in PC as RN education lacks clinical experience in PC practice settings reducing preparation for the PC role (Besner et al., 2011). Though nurses describe their role in PC across the lifespan as generalist care, literature supports a targeted specialist role in areas such as chronic disease management, and reproductive health (Liddy et al., 2011; Lorch et al., 2015; Passey, Fanaian, Lyle, & Harris, 2010; Plumb, Weinstein, Brawer, & Scott, 2012; Schraeder et al., 2008). In Allard, Frego, Katz, & Halas, (2010), only 61% of PC nurses felt that they were working to full

scope of practice, and some nurses were unclear about which of their activities fell within the regulated scope such as Pap testing and anticoagulation monitoring. Nurses also responded that they perform many tasks that are clerical in nature. Some suggest that expansion of the role of the PC nurse is needed within health care organizations to include diagnosis and treatment of acute issues such as otitis media, STI, and contraception management. Currently the RN Scope of Practice includes diagnosis and treatment of specific disorders with specialized training certification available from the University of Northern British Columbia (CRNBC, 2015; RNAO, 2012). With BC moving towards collaborative multidisciplinary PC, nurses could play an increased role in PC, however more research on role clarification, education requirements, and organizational support need to be conducted to facilitate implementation.

### **2.7.3. Gaps and barriers to nurses' role in primary care/public health collaboration.**

Though PC/PH has been studied through large-scale national reviews, there remain gaps in understanding nurses' role in PC/PH collaboration. Understanding the role capabilities of nursing, the largest health care workforce, will be an essential first step in moving towards implementation of PC/PH collaboration. Some evidence exists in supporting nurse's role in PC/PH collaboration: nurses increase comprehensive PC (Russell et al., 2010), access to care (Metzelthin et al., 2013) and health promotion (Barrett, 2007; Besner et al., 2011; Hogg et al., 2009; Keleher & Parker, 2013; Oandasan et al., 2010; Oelke et al., 2012; Schraeder et al., 2008). However, there are challenges at multiple levels in enacting this role including structural constraints at the system and organizational level as well as individual level considerations (Keleher & Parker, 2013; Kemppainen et al., 2013; Oelke et al., 2012; Richard et al., 2010; Roden, Jarvis, Campbell-Crofts, & Whitehead, 2015; Whitehead, 2009). The challenges of implementing nurses in PC/PH collaboration will be discussed next.

System level challenges include a workforce that is focused on individual level interventions of traditional PH programs. Moreover, the current PC funding models in BC remain mainly Fee-for-service where physicians do not find it financially viable to hire a nurse.

At the organizational level, although the RN scope of practice is quite broad, they generally work within an organizational mandate that is task focused (Falk-Rafael, 1999; Whitehead, 2009). Heavy workload and lack of resources results in a 'powerless and complying' nursing workforce (Falk-Rafael & Betker, 2012; Roden et al., 2015). These pressures limit nurses' ability to adapt their work to necessary population needs and upstream health promotion and prevention, social justice, and collaborative work, all tenants of PC/PH collaboration and system reform (Falk-Rafael & Betker, 2012; Roden et al., 2015; Schofield et al., 2011; Whitehead, 2009). At the organization level, employers need to support nurses' ability to work at full scope of practice and to utilize their role potential as health promoter and collaborator. In order to achieve greater outcomes in health indicators, especially for vulnerable populations, organizations need policy in place, and managers with clear vision and skill, for supporting nurses' roles in less task focused work such as clinic-based immunizations, and expanding their role in the provision of PC. At the individual level, challenges to increasing nurses' role in PC/PH collaboration include lack of clarity around optimal use of nurses' role in: (a) PC settings, (b) collaborative practice with physicians and multidisciplinary teams, and (c) population level work. More work is needed to clarify these roles.

PH and PC systems are under pressure to evolve to meet the health demands of the 21<sup>st</sup> century such as chronic disease and communicable disease prevention. Increasing nurse's role in collaborative PC/PH service delivery may be one way to achieve the Triple Aim goals for a

healthier population, although nurse's optimal role in supporting PC/PH in BC remains unclear.

Further study is needed to understand what role nurses could play in PC system reform.

## **Chapter Three: Methods**

A scoping review of the nurse's role in PC/PH collaboration was conducted. The current BC RN scope of practice was compared to the results of the scoping review.

### **3.1. Scoping Reviews**

Scoping reviews are a relatively new method for health researchers and policy makers to synthesize the large amounts of knowledge available in multiple forms and digest it in a way to further enhance understanding, applicability, and refinement of research questions that are broad and complex, such as in the study of collaboration in PC/PH (Arksey & O'Malley, 2005; Colquhoun et al., 2014). Methodology for conducting scoping reviews began with the seminal work by Arksey and O'Malley (2005) and was further detailed for the health arena by Levac, Colquhoun and O'Brien (2010). Arksey & O'Malley (2005) define scoping reviews as a method that "aim(s) to map rapidly the key concepts underpinning a research area and the main sources and types of evidence available, and can be undertaken as standalone projects in their own rights, especially where an area is complex or has not been reviewed comprehensively before" (p. 21). While Colquhoun et al., (2014) have most recently adapted the definition to "a form of knowledge synthesis that addresses an exploratory research question aimed at mapping key concepts, types of evidence, and gaps in research related to a defined area or field by systematically searching, selecting and synthesizing existing knowledge" (p. 1294). The applicability of this scoping review methodology for research on PC/PH collaboration is useful in that it will allow compilation of a wide variety of data including peer reviewed articles, grey literature such as policy reports and web based resources.

Drawing on the work of Arksey and O'Malley (2005), Levac et al., (2010) and Martin-Misener et al., (2012), this scoping review on nurses' roles in PC/PH collaboration consists of the following 6 steps:

1. identifying the research questions,
2. searching for relevant studies,
3. selecting studies,
4. charting the data,
5. collating, summarizing and reporting the results and,

Limitations of scoping reviews include lack of systematic rigour; clear purpose and definition must be included in intention prior to study in order to increase the credibility of the scoping review (Anderson, Allen, Peckham, & Goodwin, 2008). Levac et al. (2010) suggest ensuring adequate clarity to guide the scope of inquiry including concept, target population, and health outcomes of interest, and include detailed methodology so that the study can be reproducible. Following Arksey and O'Malley's methodology reduced the limitations of the scoping review process. Step 6, an optional step in Arksey and O'Malley's method (2005), consulting with stakeholder to inform or validate the study, was omitted due to limitations in the scope of this thesis.

### **3.2. Stage 1 Identifying The Research Question**

The research questions were identified prior to the scoping review with input from my thesis supervisor Dr. S. Wong, Professor University of British Columbia, School of Nursing and Centre for Health Services and Policy Research. Dr. Wong was the British Columbia co-lead for a three province study examining collaboration between PC and PH (Valaitis et al., 2013).

The research questions for this study are: 1. Based on this review of the literature, what are the roles of registered nurses in PC/PH collaboration?; and 2. is the current BC RN scope of practice adequate to support nurses' roles and activities in collaboration between PC/PH?

Definitions of terms of PC and PH for this review were adopted from the initial study (Valaitis et al., 2013) and are included in Appendix A.

### **3.3. Stage 2 Identifying Relevant Studies**

**3.3.1. Inclusion and exclusion criteria.** This scoping review included peer reviewed articles and grey literature from January 2009 to January 2016. The dates were chosen to add to the Canadian scoping review that ended in 2009 and also to capture the data from PC/PH nurse implementation that has been many years ahead in implementation in the United Kingdom, Australia, and New Zealand. Papers were included from the United States, Canada, Western Europe, Australia and New Zealand. Manuscripts addressed at least one of the following: structures and processes that support nurse's role in PC/PH collaboration, patient population indications and outcomes of RN collaboration between PC/PH. Papers were excluded if they only addressed PH or PC alone, did not mention the RN role, and were not published in English.

**3.3.2. Search strategy.** The search strategy was based on the initial PC/PH scoping review (Valaitis et al., 2012) and included:

- Electronic data base search of the following data bases: PubMed, CINAHL, Cochrane, PsycInfo, Sociological Abstracts, Web of Science, and Dissertation International;
- Searching reference lists of key documents;
- Web search of government, association and research networks were scanned for key documents and information;

- General internet search using key terms to capture grey literature/other information not gained from formal databases;

MeSH headings were used as free text key words PC, PH, collaboration, nursing, nurse's role using 'AND' and 'OR'. The health science librarian at the University of British Columbia was used as support for the review at the initial stage of the scoping review. All retrieved searches were imported into Mendeley reference/PDF manager.

### **3.4. Stage 3 Relevance Testing**

To ensure study rigour, the material was reviewed by the study author (MS) and supervisor (SW) as follows: 1. MS placed systematic reviewed articles in folders in the Mendeley program labeled with the various databases such as Medline and CINAHL. A shared group folder labeled PC/PH collaboration was set up for reviewing of articles. 2. Articles' title and abstract were reviewed by MS and SW independently to ensure the review was capturing appropriate material and fit the inclusion criteria, with include or exclude added into the notes section of each article in Mendeley. 3. Articles that were unclear related to inclusion criteria were marked with a '?' in the Mendeley notes of each article and these articles were reviewed again for inclusion. 4. Once consensus was reached, appropriate articles were moved into a folder in Mendeley labeled 'In'. 5. Final compilation of relevant literature was completed by MS. SW was notified of the final breakdown of total tally, and detail of each included article including country of origin, article focus, and type of article.

### **3.5. Stage 4 Charting The Data**

Once the articles were screened, the data were extracted using the narrative approach as suggested in Arksey and O'Malley (2005). Key themes, derived from my research question and informed by the initial PC/PH collaboration scoping review, (Valaitis et al., 2013) included:

- Type and/or purpose of collaboration,
- The participants in the collaboration,
- Nurse's role in the collaboration,
- Geographic context/situation (urban/ rural),
- Health focus such as mental health, maternal, or communicable disease,
- Motivators for collaboration,
- Characteristics and attributes of collaboration,
- Results and indicators of success.

### **3.6. Stage 5 Collating, Summarizing And Reporting The Results**

For analytical guidance, a qualitative limited structured iterative approach was used (Guest, MacQueen, & Namey, 2012) to support the detailed focus of the nurse's role in PC/PH collaboration; a limited structured iterative approach is helpful when considerable knowledge exists about a research topic and it is being analyzed in a new context. The principal feature of this type of data analysis is that it has a highly structured lens, geared towards fine-tuning of the data, such as focusing on the role of the nurse in PC/PH collaboration (Guest et al., 2012). A descriptive analysis of the data included the country of origin, year of publication, urban and rural considerations, players in the collaboration, and health foci.

**3.6.1. Approach to analysis of the scoping review articles.** In this scoping review, interpretive description was used as an approach to inform the thematic analysis of the nurse's roles in PC/PH collaboration. Thorne's (2008) description of interpretive description proved useful in analyzing the literature related to PC/PH collaboration due to its focus on clinical applications of research, solving practice related concerns in applied science fields such as nursing, and supporting the expertise of practice professionals in relation to research. As Thorne explains, interpretive description "offers the potential to deconstruct the angle of vision upon which prior knowledge has been erected and to generate new insights that shape new inquiries as well as applications of evidence to practice (p. 35) and provides a platform for identification of themes and patterns that have not been well documented (p. 44). What has been previously understood about collaboration between PC and PH was reconstructed in relation to the role of the nurse to provide new insights into their place in health system improvement. Interpretive description moves towards understanding "associations, relationships, and patterns within the phenomenon" and "putting the analysis back into the context of the practice field" (p. 50). Interpretive description supports research that goes beyond pure description towards identifying the application and complexity of relationships of phenomenon. Using the scoping review as research methodology fits well with the practicality and application aspect of interpretive description as the scoping review aims to shed light on new and emerging areas of research in the health care area. Using the description above, interpretive description is an ideal approach to analysis to inform my research question due to the complexity of the nurses' role, their interrelationships within system, organizational and interpersonal levels and how this impacts the care of patients, providers and populations.

In addition to drawing on interpretive description, the nurse's role in PC/PH collaboration was analyzed using the intrapersonal, interpersonal, organizational and systemic levels of the Ecological Framework for Building Successful Collaborations between Primary Care and Public Health (Appendix B) (Valaitis et al., 2013, p.44).

**3.6.2. Coding.** A coding structure was developed in consultation with my research advisors and was guided by the research questions. To ensure consensus or understanding in interpretation of the information, two team members MS and SW coded initial articles. When dissimilarity occurred, articles were re-reviewed for suitability by MS and SW. After initial coding was completed, the committee assisted with analyzing the data using the Ecological Framework for Building Successful Collaborations between Primary Care and Public Health (Valaitis et al, 2013, p.44).

### **3.7. Credibility/Evaluation**

To ensure credibility and study rigor, data coding and analysis were reviewed by committee members at the beginning, middle, and end of the analysis phase of the scoping review. As stated above, when disagreement occurred over article suitability, a re-review was conducted. An initial process included a comparison of five coded articles that were coded independently by MS and SW. MS reviewed the two coded versions of the five articles completed by MS and SW and sent a summary to SW confirming the coding similarity. This was especially crucial for two significant reasons; the role of the nurse was often embedded in the articles and difficult to extract, and due to the complexities of the inter-country variation of PC and PH systems and their nursing designations.

### 3.8. Scope of Practice

The roles and activities found in the scoping review were analyzed for their relevance to the College of Registered Nurses of BC's (CRNBC), BC RN Scope of Practice, to see if the RNs in BC could perform these roles and activities (College of Registered Nurses of BC, 2016). As mentioned in Chapter 2, the BC RN Scope of Practice, informed by the BC health care legal regulations, is divided into two areas for RN practice: (a) general practice activities where the RN can work without any additional regulatory approval, which includes general practice activities that are restricted and non-restricted with or without an order; and (b) restricted general practice that has CRNBC 'limits and conditions' applied to them. For example if an RN is performing a TB skin test screening administering purified protein derivative or other immunoprophylactic or chemoprophylactic agents identified by the British Columbia Centre for Disease Control (BCCDC), the RN must obtain the *competencies* and *decision support tools* established by BCCDC prior to giving the care.

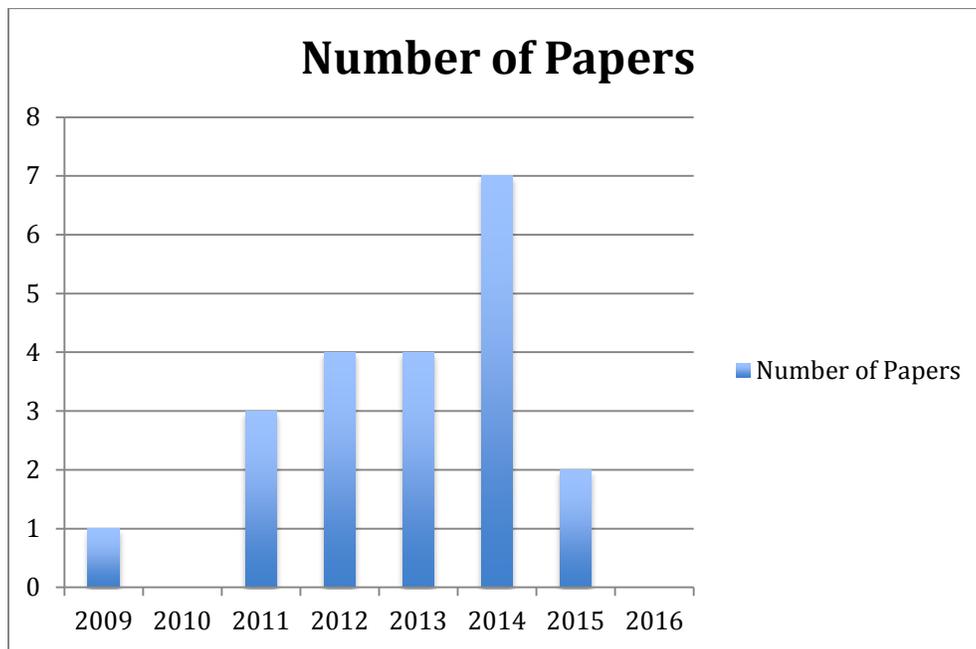
Also as discussed in Chapter 2, the most restrictive level of Scope of Practice for RNs, is the Certified Practice designation which includes some restricted activities that RNs cannot carry out until they have been certified by CRNBC through extra training. Many of our rural and PH nurses have these Certified Practice designations in order to practice in their role and carry out the necessary activities. Categories of Certified Practice are: (a) Remote Nursing Practice, (b) Reproductive Health, and (c) the RN First Call program. Each category has distinct activities that the RNs are allowed to practice. Remote Practice has the most comprehensive capabilities and they are able to diagnose and treat minor acute illnesses, administer and dispense Schedule 1 medications without an order, diagnose and treat STIs, and provide birth control.

## Chapter Four: Results

### 4.1. Search Strategy Results

The combined search strategy yielded a total of 56 papers and of these, 23 papers met the inclusion criteria- The majority of the papers were published from 2012-2014 (Figure 4). The Ecological Framework for Building Successful Collaboration between Primary Care and Public Health (Valaitis et al., 2013, p.44) (Appendix B) is used to present the results.

**Figure 2. Number of Papers per Year**

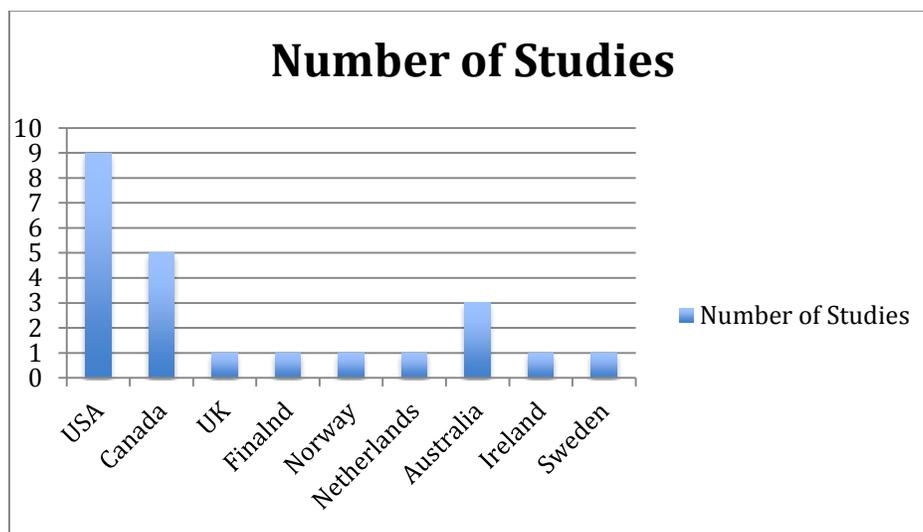


**4.1.1. Countries.** The majority (61%) of the papers originated from the United States (9/23) followed by Canada (5/23). Europe (United Kingdom, Ireland, Norway, Sweden, Netherlands) and Australia had fewer publications (Figure 5). PC/PH collaboration was at various stages of collaboration; differences in PC/PH collaboration ranged from full collaboration to totally separate systems. Studies from the United States (Albright et al., 2014; Bodenheimer, Chen, & Bennett, 2009; Elliott et al., 2014; Ferrer et al., 2013; Lebrun LA et al., 2012; Levy et al., 2011; Monsen et al., 2015; Serpas et al., 2013; Weinstein et al., 2013) and

Canada (Davies, 2012; Green et al., 2013; Kates et al., 2012a; Levesque et al., 2013; Wynn & Moore, 2012) report the youngest collaborative PC/PH systems versus the European countries (Clancy, Gressnes, & Svensson, 2013; Kardakis, Weinehall, Jerdén, Nyström, & Johansson, 2014; Kelly, Glitenane, & Dowling, 2015; Korhonen, Järvenpää, & Kautiainen, 2014; Peckham, Econ, Hann, & Hons, 2011; van Avendonk, Mensink, Ton Drenthen, & van binsbergen, 2012) which have merged PC and PH systems decades ago. This may account for the volume of research and discussion in North America as countries continue to study how to strengthen PC/PH collaboration into their current health care systems.

Along with variation in stages of collaboration, the terminology of nurse’s roles was important in understanding if they were a PHN or a general nurse without specialty public health training. This was important in differentiating the roles, training and skills. As an example, having an understanding whether a general nurse provided the collaborative role and activity or a specialty-trained nurse such as a PHN filled the role will provide clarity on the type of skills, knowledge and training needed to perform the role.

**Figure 3. Numbers of Studies from Countries of Origin**



## **4.2. Examples of Collaboration of Public Health Into Primary Care**

This was seen in articles from Sweden, United Kingdom, Ireland, and Norway. A brief discussion of collaboration and the nurse's role from Sweden and Ireland below provides evidence of this collaboration.

In Sweden, financing and provision of health care is decentralized to 21 health care regions (county councils) similar to health authorities in British Columbia. However, in Sweden, local governments have financial responsibility for providing health care that includes health promotion and prevention. Nurses work directly in PC as part of a team approach along with generalist RNs (Kardakis et al., 2015).

In Ireland, Primary Care Trusts (PCT) (Appendix A) employ PHNs to deliver care in the PC system. Public health nurses have traditionally provided nursing and midwifery care including maternal and child health in the community and are now expanded to a generalist role in the PCT. The trusts work together to deliver primary health care services including social services to a defined population of between 8,000 to 12,000 people and are the first point of contact with the health service. Interdisciplinary PC teams including PHNs, play a central role in the PC system for their generalist not specialist role (Kelly et al., 2015).

## **4.3. Lack of Large-Scale Collaboration of Public Health/Primary Care**

The United States, Canada, and Australia generally have separate PC/ PH systems with some shared linkages through smaller locally based projects. The funding structure of PC and PH in the United States and Canada is based at the higher provincial or state level and not delegated to smaller community level organizations such as in Ireland's PCTs. There are few RNs working in PC identified in the papers and few examples of PH/PC working together on a large-scale basis.

PC and PH are separate entities in the United States and Canada (Elliott et al., 2014). Patient Centered Medical Home (PCMH) and Community-Oriented Primary Care (COPC) models (Appendix A) combine PC/PH, and are seen throughout the papers as small local pilot project collaborations (Serpas et al., 2013; Weinstein et al., 2013). Pilot projects also dominate the Canadian collaborations such as Ontario’s immunization collaboration between Family Health Teams (Appendix A) and PH (Green et al., 2013; Levesque et al., 2013; Wynn & Moore, 2012).

Table 9. A Comparison Of The Nurse’s Role in Primary Care and Public Health from the Scoping Review

Country	Primary Care Nurse	Public Health/Community Nurse
United Kingdom/Ireland	PC nurse works in PC setting in a generalist model	Not mentioned
	Practice nurses participate in some routine screening	
	Nurse led clinics for chronic diseases	
Norway	Not mentioned	PHN are employed by the municipalities and provide universal service with a focus in maternal/child health promotion at child health clinics and school clinics, home visits, work with groups, identification of at risk children/families
Finland	Not mentioned	PHN secondary prevention screening for CVD and conducted brief lifestyle counseling
Sweden	RNs working in PC also performed lifestyle counseling	PHN working in PC setting performing lifestyle counseling

Country	Primary Care Nurse	Public Health/Community Nurse
Australia	Mentioned briefly as self-identifying as an important role in maternal child care	PHN work in a specialist model of care  PHN work in PH with liaison roles to PC/acute care  Transition coordinator role (experienced nurse role)
United States	Not mentioned	PHN work in PH, Liaison roles to PC seen for guideline translation  Supporting community models of care COPC/PCMH in Nurse care management
Canada	PC nurse mentioned briefly in team-based care models such as the FHT in Ontario	PHN supported immunization projects with FHTs in Ontario

#### 4.4. Urban and Rural Considerations

Urban and rural situation may impact the nurse's role in PC/PH collaboration. Six papers identified an urban focus (Ferrer et al., 2013; Green et al., 2013; Kempe et al., 2014; Levy et al., 2011; Serpas et al., 2013; Wynn & Moore, 2012) and two papers (Kardakis et al., 2014; Korhonen et al., 2014) identified a rural focus. The rest of the articles do not mention or have mixed urban/rural areas.

From the urban perspective (the majority being US studies), similarity in the nurse's role include dissemination of PH specialty services to vulnerable populations by collaborating with other service providers in large scale projects (Table 10).

Table 10. Urban PC/PH Programs and the Nurse's role

Program	Program goals	Nurse's role
Primary Care Nutrition Program (Levy et al., 2011)	Nurses assisted in providing PC nutrition training targeted obesity, diabetes, and cardiovascular disease in high-need neighborhoods in New York	Nurse's provided training to PC staff and facilitated the program implementation.
Primary care-public health partnership to address homelessness, serious mental illness and health disparities (Weinstein et al., 2013)	PCHM/COPC model (see definition appendix) Disease and immunization and education	Nursing students and nurses working with other agencies to provide care such as health screening for substance abuse, chronic disease, infectious
San Diego Healthy Weight Collaborative (Serpas et al., 2013)	Multiple sector collaboration including PC, PH, researchers, schools and community organizations targeted underserved Latino community Goals: healthy weight message dissemination, policy changes to support healthy eating and physical activity and assessing weight status and healthy weight plans in PC, school and early childhood settings.	Nurse's role: working with schools, and child-care to explain program to parents and community organizations. To provide outreach weight screening.
'Advanced Primary Care' project in San Antonio Texas (Ferrer et al., 2013)	Coordinated approach to improve health outcomes for a high-risk population. Community of solution involving county health, family medicine residency program, public health and local nonprofit organizations.	PHNs and clinical nurse case managers focus on care transitions and other measures to meet the needs of patients with high morbidity and high use of health care.

Rural considerations that may affect the nurse's role include difficulty recruiting health personnel in rural areas (Lebrun et al., 2012) which may impact continuity of care in rural sites (Psaila, Kruske, Fowler, Homer, & Schmied, 2014). The nurse's role in rural areas may be more able to respond to clinical needs in the home setting such as Sweden's use of PHNs to deliver targeted home based screening of overweight patients with cardiovascular risk factors (Korhonen et al., 2014).

Beyond urban and rural considerations, geographic size of health areas can also impact collaboration. Clancy (2013) designated a whole article on the impact of geographic factors on the nurse's role in collaboration at the country level in Norway. Findings from this study and others in the review suggest that larger regions benefit from political directives for collaborative support due to their tendency to have more complex organizational structures (Clancy et al., 2013; Psaila, Schmied, Fowler, & Kruske, 2014), siloed sectoral boundaries that inhibit collaboration (Bodenheimer et al., 2009; Clancy et al., 2013; Green et al., 2013; Levesque et al., 2013), territorial thinking between sectors and professionals such as between midwives and PHNs (Clancy et al., 2013; Peckham et al., 2011; Psaila, Schmied, et al., 2014) and larger communities having more physical distance between professionals (Clancy et al., 2013; Kates et al., 2012b; Psaila, Kruske, et al., 2014).

#### **4.5. Players in the Collaboration**

Players in the collaboration included a variety of health professionals as well as lay workers (Table 11). The most common players involved include nurses, physicians, midwives, social workers, and dieticians.

Table 11. Players in PC/PH Collaboration

Professionals	Lay workers
Nurses: Registered Nurses, PHNs	Promodores (Latino lay workers)
Nurse Practitioner	
General Practice Physician	Community workers
Physician Specialists e.g. Pediatricians	
Midwives	
Social Workers	
Dietician	
Pharmacist	
Physiotherapist/Occupational Therapist	

#### 4.6. Health Focus

The most common health areas that included the nurse's role in PC/PH collaboration were maternal/child health, and chronic disease primary and secondary prevention work especially obesity management (Table 12). Many of the collaborations involved a targeted approach to vulnerable populations for health issues such as childhood obesity (Ferrer et al., 2013), access to maternity care to indigenous and other vulnerable populations in British Columbia and Australia (Davies, 2012; Psaila, Kruske, et al., 2014), and chronic and communicable disease screening and prevention (Ferrer et al., 2013; Weinstein et al., 2013).

Table 12. Health Foci of the Papers

Health Focus	Authors
Chronic disease	Bodenheimer, Elliott, Green, Kates, Weinstein
Maternal /child health	Clancy, Green, Psaila (a,b,c), Davies
Social Determinants of Health	Ferrer, Kates
Immunization	Kempe, Davis, Levesque, Wynn
Obesity	Korhonen, Monsen, Serpas, Levy, Van Avendonk
Underserved populations	Davies, Levesque, Weinstein

#### **4.7. Areas of Nurse Facilitated Primary Care/Public Health Collaboration**

A variety of nurses' roles in PC/PH collaboration were found in the articles (Table 9). No articles focused entirely on the role of the nurse in PC/PH collaborations. The nurse's role was most often mentioned briefly. At times, when the term public health staff or 'professionals' was mentioned I assumed that the majority of the staff were nurses which follows common PH staffing ratios. Four main roles for nurses in PC/PH collaboration include: (a) relationship builder, (b) care coordinator, (c) program facilitator, and (d) outreach professional. Both PHNs and generalist RNs knowledge and skills supported the PC/PH collaboration roles. The four nurse's roles will be discussed within the intrapersonal, interpersonal, organizational and systemic levels of the Ecological Framework (Appendix B).

#### **4.8. Intrapersonal/Interpersonal Level Considerations**

The roles of relationship builder, care coordinator and outreach professional support the intra and interpersonal level of PC/PH collaboration. The nurse's role in supporting collaboration between PC/PH at the individual intra and interpersonal level is characterized by a variety of factors including role clarity, effective communication, and building trusting relationships. Clancy (2014), highlighted the importance of face-to-face meetings and to identify and nurture factors that build and sustain trust; this was noted to be more important than structural considerations (Clancy, 2014), and Monsen et al. (2015) suggest PH play a leadership role in this relationship building.

**4.8.1. Outreach.** Nurse's provided obesity and chronic disease prevention through roles such as screening, education, and collaboration, often through outreach in the home (Korhonen et al., 2014; van Avendonk et al., 2012) and community setting (Elliott et al., 2014; Serpas et al., 2013; Weinstein et al., 2013).

In the community setting outreach supported nurse-led screening and education in health promotion, chronic disease, and communicable disease to vulnerable populations. This care was often associated with team-based care models such as the Primary Care Medical Home (PCMH). Nurses worked as either consultants from PH to the PCMH, or as members of the PCMH and in association with academic collaboratives. The nurse's role as 'outreach professional' reduced communicable disease through improved access to care by collaborating with PC and with community services.

An example of outreach by PHNs to PC was during the H1N1 pandemic in 2010 where one region of Ontario's family health team (Primary Care) and PH collaborated in the management of the pandemic. Flu assessment centres (FAC) were created in the community to ensure universal easy access to care. The PHN's role included liaison to the PC sites to provide supplemental staffing of PC site flu immunization clinics, infection control measures such as cough etiquette, education and quarantine, and coordination of clinical care guidelines (Wynn & Moore, 2012).

Beyond PC sites, nurse-led outreach immunization clinics increased access to care and vaccination rates. Public health nurses collaborated with pediatricians and general practice physicians to provide immunization at other venues outside of the health care system such as fire halls, and day care centres; using these community based services, PHNs supported care to be provided in unique locations and times (Kempe et al., 2014; Lebrun LA et al., 2012). Interestingly, the largest rate increase was seen among healthy children who do not regularly interface with the PC system, which highlighted a unique feature of the nurse's role in immunization outreach; accessing healthy people who did not access medical care (Kempe et al., 2014).

Outreach to the home setting (only seen in European studies) targeted primary and secondary prevention of chronic disease and obesity and included assessment and education activities such as physical exams, explanation of test results, and lifestyle recommendations on weight reduction (Korhonen et al., 2014), monitoring food intake and body weight and implementation of dietician advice (van Avendonk et al., 2012). RN-led screening achieved meaningful weight loss with brief lifestyle counseling (Korhonen et al., 2014).

**4.8.2. Relationship builder.** Nurses' values, attitude's and beliefs are characterized by nurses' willingness to collaborate and their responsiveness to patient and community needs (Valaitis et al., 2013). The nurse's role in supporting clarity of their role was tied to strengthening and supporting interprofessional communication and trust building. When this process did not occur, unclear boundaries led nurses in Ireland to become a catch all service and conversely referrals to them from other providers were not being made (Kelly et al., 2015). To remedy the situation, the nurses support the team meetings that occur at least monthly to review patients and provide their unique role to the care needs. In Australia, improving care transition processes through increased communication also aided in clarifying roles between midwives and community nurses (Psaila, Kruske, et al., 2014).

The nurse has a central role in team-based care and PH collaborative care. Their role on the ground working with other providers, placed them in a key role in participating in enhanced communication through face-to-face meetings and/or colocation (Green et al., 2013; Kelly et al., 2015; Kempe et al., 2014; Monsen et al., 2015; Psaila, Kruske, et al., 2014; Wynn & Moore, 2012).

The data showed that other health professionals highly regarded the nurse's role as integral to PC/PH collaboration. PHNs in Norway were seen as the most important collaborative

professional in child and family care especially by the physicians (Clancy et al., 2013). In the Australian study on maternal services, all maternal care providers (GP, midwife, practice nurse and community nurse) saw themselves as the key provider for the long term maternal child care from the antenatal through to the postnatal period which alludes to nurses' belief that they play a key role in this type of care (Psaila, Schmied, et al., 2014).

Statements from PC providers about the PHN role included words such as supportive, sharing, checking in, reminding, visiting and talking (Monsen et al., 2015). From the immunization role, a PC provider stated "it gives us a face and a name so we can call (the public health department) if we have other problems" (Kempe et al., 2014, p. 115) From the public health perspective " I think the better they know us and the more they see us as an actual resource, the more comfortable they are when there's really a public health issue that has to be dealt with" (Kempe et al., 2014, p. 115).

**4.8.3. Care coordinator.** The care coordinator role was often supported by the need to increase access to care for vulnerable individuals and families (Davies, 2012; Ferrer et al., 2013; Psaila, Fowler, Kruske, & Schmied, 2014). Both maternal/child care and chronic disease management were targeted by this role.

In maternal/child care, the care coordinator role supported an initiative by public health and the Cowichan Valley Division of Family Practice partnership to address the complex challenges of teen pregnancy, low birth weight and lack of access to PC (Davies, 2012). The activities of the PHN included collaboration and referral with the PC and other PH team members and community services specifically addressing the complex health and social needs of the families.

Another example of the care coordinator role is the general practice physician liaison nurse . This role coordinates care from the hospital to the community to avoid overlap of resources and ensure the identification and linking of families both to community services and to their GP and a key feature is the face- to-face transfer of high risk family information (Psaila, Kruske, et al., 2014; Psaila, Schmied, et al., 2014).

Beyond maternal/child health, chronic complex care clients also required care coordinator roles in a PCMH setting. Activities included: working with a multidisciplinary team including community health workers, integrating care between hospital and community, running group visits to support chronic disease management using the Stanford Self- Management Education Program<sup>4</sup> and addressing the social determinants of health for the patient (Ferrer et al., 2013)

The nurse's roles at the intra/interpersonal level contributes to success at the organizational level as increased personal connections and information communication pathways removed the silos between PC/PH creating a shift from individual to a more coordinated organization level impact.

---

<sup>4</sup> Stanford Self-Management Education program – A chronic disease self management program ([www.patienteeducation.stanford.edu/programs](http://www.patienteeducation.stanford.edu/programs))

#### **4.9. Organizational Level of Primary Care/Public Health Collaboration**

At the organizational level, the nurse's roles include: program facilitation, relationship building, and care coordination. These roles support collaborative approaches to program and service delivery between PC/PH by engaging with the community to provide integrated, client-centered care (Elliott et al., 2014; Ferrer et al., 2013; Kempe et al., 2014; Monsen et al., 2015).

**4.9.1. Program facilitator.** The nurses achieve their role as program facilitator through formalized communication processes and exchange of health information. Communication strategies included supporting the transfer of PH knowledge to PC settings on topics such as: (a) communicable disease management areas e.g., immunization, and pandemic management (Green et al., 2013; Kempe et al., 2014; Wynn & Moore, 2012), and (b) nutrition resources such as the healthy plate, healthy eating strategies (Levy et al., 2011; Monsen et al., 2015; van Avendonk et al., 2012).

**4.9.2. Relationship builder.** The nurse's role as relationship builder not only supported inter-organizational collaboration but also future collaboration and increased awareness of PC to population level needs (Kempe et al., 2014; Levy et al., 2011; Monsen et al., 2015; Wynn & Moore, 2012). As nurses spend time and resources to support the PC staff in their practice setting, this enhanced face- to-face communication between PH and PC was described as a 'network of communication' by Wynn and Moore (2012, p. e11) that could support future initiatives between PC and PH such as chronic disease management and disease surveillance. Another result of the nurse's role as liaison to PC includes increased awareness of PC to population level needs of their patients such as housing (Davies, 2012; Green et al., 2013).

**4.9.3. Care coordinator.** Care coordination at the organization level includes working with community agencies to provide better access to immunization by providing care to service locations to where people work, live and play (Kempe et al., 2014) rather than at stationary PC sites; collaborating with community agencies such as CHCs to provide primary and secondary chronic disease management (Elliott et al., 2014), and working with PC to improve vertical and horizontal continuity of care, specifically the SDOH for complex maternity care (Davies, 2012; Psaila, Fowler, et al., 2014) and chronic disease management (Ferrer et al., 2013; Weinstein et al., 2013). Nurses' skills and knowledge, as previously discussed, place them at the heart of this type of care delivery

#### **4.10. Systemic Level of Primary Care/Public Health Collaboration**

The nurse's role at the systemic level includes only the program facilitation role. Evidenced based tools, guides and programs are often mandated by organizations, professional bodies, and governments, to support best practices that more often now include collaboration activities between PC and PH (Elliott et al., 2014; Peckham, Hann, & Boyce, n.d.; Serpas et al., 2013; van Avendonk et al., 2012). The nurse's role as facilitator in supporting the use of the tools, guides, and programs can be considered a systemic level role in PC/PH collaboration.

Evidenced based tools and standardized guidelines require a dual nurse role in that they not only often require the role of the nurse in the provision of care guideline at the interpersonal level but also as facilitator at the organizational and systemic level. Examples of the program facilitator role in the use of tools/guides/programs into the PC settings were discussed in detail in previous sections but will be listed: (a) supporting the use of the Institute for Systems Improvement - Adult Obesity Guideline into the PC setting in Minnesota (Monsen et al., 2015), (b) rolling out the Primary Care Nutrition Training Program to targeted underserved PC sites in

New York (Levy et al., 2011), (c) liaising with schools and community organizations and PC for weight screening and healthy eating the San Diego Healthy Weight collaborative (Serpas et al., 2013) and (d) assisting PC obesity guideline translation that included goal setting with the PC sites in the use of the guidelines and tools, educating PC site staff on motivational interviewing techniques, and supplying resources (food models, portion control plates), and shared best practices in obesity management (Monsen et al., 2015).

#### **4.11. Does the BC RN Scope of Practice Support the Nurse's Role Identified in the Scoping Review?**

The research question was answered by a comparison of the RN roles and activities found in the review to the current CRNBC RN Scope of Practice and is presented in Table 13.

Table 13. The RN Roles in PC/PH in Relation the CRNBC RN Scope of Practice (College of Registered Nurses of BC, 2016)

RN Roles/Activities in PC/PH and the CRNBC RN Scope of Practice		
Roles and Activities found in the Scoping Review	General Practice CRNBC RN Scope of Practice	General/Restricted CRNBC Scope of Practice
Collaboration/ Program facilitator (Serpas et al., 2013; Wynn & Moore, 2012)	Collaborating with others on the health care team	
Relationship builder (Psaila, Kruske, et al., 2014; Wynn & Moore, 2012)	Communicating appropriately with clients, colleagues and others	
Care coordinator (Ferrer et al., 2013; Psaila, Fowler, et al., 2014)	Coordinating care services for clients	
Health teaching (Korhonen et al., 2014; Monsen et al., 2015)	Teaching	
Building relationships and trust (Levy et al., 2011; Psaila, Kruske, et al., 2014; Wynn & Moore, 2012)	Developing professional relationships with clients and others	
Primary and Secondary Screening: <ul style="list-style-type: none"> <li>• Chronic disease</li> <li>• Cancer</li> </ul> (Bodenheimer et al., 2009; Korhonen et al., 2014; Peckham et al., 2011; van Avendonk et al., 2012)	Providing some disease prevention and health promotions services (e.g., blood glucose screening)	Pelvic exams or cervical cancer screening

---

RN Roles/Activities in PC/PH and the CRNBC RN Scope of Practice

---

Roles and Activities found in the Scoping Review	General Practice CRNBC RN Scope of Practice	General/Restricted CRNBC Scope of Practice
<p>Immunization (Kempe et al., 2014; Levesque et al., 2013; Wynn &amp; Moore, 2012)</p>		<p>Schedule II immunoprophylactic and post-exposure chemoprophylactic agents to prevent disease including:</p> <ul style="list-style-type: none"> <li>• Influenza vaccine</li> <li>• Routine immunization vaccines</li> <li>• Vaccines administered during an outbreak</li> </ul>
<p>Secondary Prevention of Communicable disease: screening/management (Weinstein et al., 2013; Wynn &amp; Moore, 2012)</p>		<p>Administer purified protein derivative by injection for the purpose of Tuberculosis screening.</p> <p>Administering Schedule 1 drugs (antivirals) to treat influenza like illness</p> <p>Diagnosing and treatment of STIs</p>
<p>Outreach professional (Kempe et al., 2014; Serpas et al., 2013; Wynn &amp; Moore, 2012)</p>	<p>Not specifically discussed in CRNBC RN Scope of Practice</p>	
<p>Group visits (Davies, 2012; Lebrun LA et al., 2012)</p>	<p>Not specifically discussed in CRNBC RN Scope of Practice but could fall under counseling clients, collaborating with others, coordinating care, teaching.</p>	

The roles identified in the scoping review fit within the current scope of practice of the RN. To note that some activities found in the review fall into the General Restricted category requiring further specialized certification and training. The chart provides a general review of the

roles and activities found in the review with the activities outlined in the BC RN Scope of Practice document. This chart is not exhaustive, for example, in analysis of the specific details of secondary prevention screening, blood glucose testing was given as an activity allowed within the general practice role. An example of chronic disease screening that would be outside of the RN scope of practice would be ordering a blood test to screen for cardiovascular disease. If an employer deemed it necessary for the RN to perform this activity, a discussion with CRNBC would be needed.

## Chapter Five: Discussion

Chapter Five situates the study's research questions in light of the literature findings and relative to the current BC government's goals for health care improvement. Recommendations for government, practice, policy, nursing education, and future research are presented as well as a plan for dissemination of findings. Strengths and limitations of the study are outlined.

### 5.1. Discussion of Findings

This scoping literature review included 23 articles, mostly from the United States and supports previous research (Valaitis et al., 2013) that nurses are key players in PC/PH collaboration. The nurse's roles are diverse and varied, both in terms of the activities performed and in service delivery location. Nurses' roles include: relationship building, program facilitation, outreach, and care coordination. The review provided interesting findings of significance to health system improvement and for providing some clarification of the nurse's role within the Ecological Framework for Collaboration between PC/PH (Appendix B). Strengthening the findings, and of significance to note, is that the principles of the Triple Aim approach to primary health care improvement (interprofessional team approach, streamlined communication processes, access and coordination of care, and efficient care) *were all aligned with the nurse's roles identified* in the review. The four clear roles that were identified (relationship builder, care coordinator, program facilitator and outreach professional) also support the population health approach and targeted prevention strategies so called for in the Canada Health Council document (CHC, 2013). This review supported previous research that improvement in one level (e.g. interpersonal level) has a positive synergistic effect on other levels (Valaitis et al. 2013).

The nurse's roles in PC/PH collaboration are carried out at various levels from individual (Ferrer et al., 2013; Kardakis et al., 2014; Kelly et al., 2015; Korhonen et al., 2014), to organizational (Elliott et al., 2014; Green et al., 2013; Psaila, Kruske, et al., 2014; Serpas et al., 2013), to systemic levels (Levy et al., 2011; Monsen et al., 2015). Population health promotion and prevention strategies, targeted especially to vulnerable populations who have difficulty accessing care, are common to all of the RN roles and activities. The nurse's roles target chronic disease (Elliott et al., 2014; Ferrer et al., 2013; Levy et al., 2011; Monsen et al., 2015), communicable disease management (Green et al., 2013; Kempe et al., 2014; Wynn & Moore, 2012) and maternity care (Davies, 2012; Psaila, Schmied, Fowler, & Kruske, 2015). The BC RN's scope of practice, regulated by the CRNBC provides adequate leeway in supporting the nurse's role in PC/PH collaboration (College of Registered Nurses of BC, 2016).

Nurse's roles and capabilities in collaborative PC/PH models also supports BC's workforce, resource and policy needs to improve collaborative care. One of the salient features of the nurse's role was that of relationship builder. Valaitis et al., (2013) have previously highlighted the need for champions and facilitators of collaboration in order to promote PC/PH collaboration. Our results suggest that nurses can be relationship builders at the interpersonal, and organizational levels. As individual level care dominates today's public health nursing care (Falk-Rafael & Betker, 2012), working at the organizational and system level is supported by our findings as an important role in system performance.

Nurses are a key player in supporting both patients and PC providers through their outreach (Kempe et al., 2014; Korhonen et al., 2014; Serpas et al., 2013; Wynn & Moore, 2012), and care coordination roles (Davies, 2012; Ferrer et al., 2013; Psaila, Kruske, et al., 2014). For example, complex care for vulnerable populations benefited the most from nurses' outreach, and

care coordination roles by improving in access to care (Elliott et al., 2014; Weinstein et al., 2013). Care needs or health issues precipitated the need for collaboration when PC was not effective alone (Davies, 2012; Levesque et al., 2013).

The PHN specialty nurse was the most common type of RN found in the review. This could be due to: (a) PHNs specific expertise as identified by the CHNC Standards of Practice in areas such as collaboration, community interface/ outreach, and relationship building especially between sectors at the organizational and systemic level; (b) the literature search preferentially identifying PHNs; and (c) the small number of generalist PC RNs in North American PC settings. However even in European studies, where PC and PHNs are collocated in clinics, PHNs were identified as having more health promotive skills than their RN peers. PHNs specialty skills and knowledge is varied and unique. Their unique skill set of individual and inter-organizational communication, knowledge of community, health and social services, leadership, outreach, and communicable disease, as well their ability to work with vulnerable populations at individual and population level health promotion, support PC/PH collaboration (Community Health Nurses of Canada, 2009).

## **5.2. British Columbia's Setting Priorities and Primary Care/Public Health Collaboration**

Through their sheer numbers and expertise within their scope of practice, nurses can support three out of the eight targeted priority areas of health system improvement set out in B.C.'s Setting Priorities document that include: a coordinated health system focused on patient-centred team-based care, primary prevention and health promotion and supporting better linkages to community health care (BC Ministry of Health, 2014). Nurse's roles for each priority area, along with the levels of action of the role (intrapersonal, organizational, systemic) and examples from the literature are outlined in Table 14.

Table 14. Alignment with BC’s Setting Priorities

<b>BC’s Setting Priorities - Key Areas</b>	<b>Nurses Roles Identified in the Scoping Review</b>	<b>Ecological Framework/Levels of Action of the Nurse’s Role</b>	<b>Examples from the Literature</b>
Patient- centred team-based care	Care coordinator	Interpersonal	Team-based care especially for vulnerable populations. Nurses’ roles included team leaders, case managers, group visit leaders to manage complex chronic disease, maternity care and communicable disease care in vulnerable patients.
Primary prevention and health promotion	Program facilitator Relationship builder	Interpersonal Organizational Systemic	Nurses were used to disseminate large-scale health promotion projects to PC sites. This work had a side benefit of forming relationships that supported better linkages. A synergistic effect was seen between Priority 2 and 3.
Supporting better linkages	Outreach professional Relationship builder Care coordinator	Interpersonal Organizational Systemic	Nurses role in improving horizontal and vertical transition of care especially for vulnerable populations in maternity care, and communicable disease management. Outreach, flexibility of job site, going where the need is, is a key feature that enabled them to perform this role such as out to PC sites, in hospitals or in team-based PC clinics.

### 5.3. Recommendations

With shortages of physicians in PC and with RNs, the largest PH/PC workforce not being utilized in PC, RNs have the potential to strengthen primary health care although this currently remains untapped in BC. Recommendations to support the nurses’ roles in PC/PH collaboration

at the systemic and organizational levels for policy, research, education and practice are outlined in Table 15.

Table 15. Recommendations

Ecological Framework	Recommendations
	Systemic Level
Policy	<ol style="list-style-type: none"> <li>1. Incorporation of PHNs/RNs into PC as permanent employee or secondment (temporary roles) or as part of the PHN role in PH (attachment nurse model) to increase support primary, secondary and tertiary health promotion, chronic disease/communicable disease (obesity, vaccination), and maternity care especially for vulnerable populations.</li> <li>2. Government directives may be needed to provide incentives to support collaboration in new models of care to include the nurse as a key player.</li> <li>3. Increase the PH mandate for chronic disease from a primary to a more secondary prevention level.</li> <li>4. Public health could work with Divisions of Family Practice to link PH with PC. Start with small joint projects such as chronic disease prevention or immunization or well child visits.</li> </ol>
Future Research	<ol style="list-style-type: none"> <li>1. What are the most effective PC models for the nurse’s role in PC/PH collaboration, PH employee through secondment/or attachment or PC permanent employee?</li> <li>2. Are the skills and knowledge of the PHN versus the generalist RN necessary for collaborative roles at the organizational and systemic levels?.</li> <li>3. Are RN education programs in BC preparing RNs with the skills and knowledge in (a) outreach and relationship building at the organization level, and (b) working in the PC system?</li> </ol>
Nursing Education	<ol style="list-style-type: none"> <li>1. Ensure pre and post licensure training supports nurses’ roles in working with primary and secondary prevention in diverse settings across sectors through strong community nursing practice experiences and through offering post licensure courses for RNs without this experience.</li> <li>2. Academic collaboratives can encourage schools to work in PC settings, providing opportunities for students to work together with populations that are underserved (MacPhee, 2009; Tubbs-Cooley, Martsolf, Pickler, Morrison, &amp; Wardlaw, 2013)</li> <li>3. Post-licensure competency can also be achieved through skills online, practice guidelines similar to those developed by the RNAO, and week-long institutes (Registered Nurses Association of Ontario, 2012).</li> </ol>

Ecological Framework	Recommendations
	Organizational Level
Practice	<ol style="list-style-type: none"> <li>1. Increase use of team-based care involving nurses' roles.</li> <li>2. Open up PC to collaborative relationships such as with PH and use nurses as relationship builders to support the initiatives.</li> <li>3. Positioning nurses in the PCMH can invest at the interpersonal level interventions.</li> <li>4. Outreach roles should be supported in care models.</li> </ol>

#### **5.4. Strengths and Limitations**

The strengths of this scoping review included a current scan of the literature identifying the roles of RNs in PC/PH collaboration which has been previously understudied. The use of interpretive description strengthened the research by providing guidance and an approach to analyzing the data. The research question was of significance, to support implementation of PC/PH collaboration in BC.

The validity of scoping reviews (Levac et al., 2010), has been questioned, although following the Arksey and O'Malley (2005) method for scoping review can improve the study's rigour. The parameters of the search such as limitations in language and country may have missed some articles.

##### **Dissemination of Findings**

Changes in primary health care delivery are needed in the BC health care system and this review provides some evidence for further study on increasing nurses in a variety of ways, from team-based care to organizational and system level work. In order to support this discussion, a variety of modes will be targeted to disseminate the findings of the review including presenting study findings at conferences targeting health policy, nursing education, and community nursing. Publication in health policy journals and nursing journals as well as advancing the role of the nurse in health system improvement committees will also support dissemination.

## References

- Aggarwal, M., & Hutchison, B. (2012). *Toward a Primary Care Strategy for Canada*. Retrieved on April 19, 2017 from <http://www.cfhi-fcass.ca/sf-docs/default-source/reports/Primary-Care-Strategy-EN.pdf?sfvrsn=0>
- Aggarwal, M., & O'Shaughnessy, T. (2014). *Harnessing an Innovation Agenda for Primary Care Transformation*. Retrieved April 19, 2017 from <https://assets.kpmg.com/.../webpdf-kpmg-harnessing-an-innovation-agenda-for-primary-care-transformation>.
- Akeroyd, J., Oandasan, I., Alsaffar, A., Whitehead, C., & Lingard, L. (2009). Perceptions of the role of the registered nurse in an urban interprofessional academic family practice setting. *Nursing Leadership*, 22(2), 73–84. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/19521162>
- Akhtar-Danesh, N., Valaitis, R., O'Mara, L., Austin, P., & Munroe, V. (2013). Viewpoints about collaboration between primary care and public health in Canada. *BMC Health Services Research*, 13, 311. <http://doi.org/10.1186/1472-6963-13-311>
- Albright, K., Saville, A., Lockhart, S., Widmer Racich, K., Beaty, B., & Kempe, A. (2014). Provider attitudes toward public-private collaboration to improve immunization reminder/recall: A mixed-methods study. *Academic Pediatrics*, 14(1), 62–70. <http://doi.org/10.1016/j.acap.2013.09.003>
- Allard, M., Frego, A., Katz, A., & Halas, G. (2010). Exploring the role of RNs in family practice residency training programs. *The Canadian Nurse*, 106(3), 20–4. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/20364785>
- Anderson, S., Allen, P., Peckham, S., & Goodwin, N. (2008). Asking the right questions: scoping studies in the commissioning of research on the organisation and delivery of health services. *Health Research Policy and Systems / BioMed Central*, 6, 7.

<http://doi.org/10.1186/1478-4505-6-7>

Apker, J., Propp, K. M., Zabava Ford, W. S., & Hofmeister, N. (2006). Collaboration, credibility, compassion, and coordination: professional nurse communication skill sets in health care team interactions. *Journal of Professional Nursing*, 22, 180–189.

<http://doi.org/10.1016/j.profnurs.2006.03.002>

Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology*, 8(1), 19–32.

<http://doi.org/10.1080/1364557032000119616>

Auditor General of British Columbia. (2013). *Health Funding Explained*. Retrieved April 19, 2017 from <http://www.bcauditor.com/pubs/2013/special/health-funding-explained>

Barrett, J. (2007). CHSRF synthesis: Interprofessional collaboration and quality primary healthcare. *Health Services Research*, 1, 0. Retrieved from [http://www.cfhi-fcass.ca/Migrated/PDF/SynthesisReport\\_E\\_rev4\\_FINAL.pdf](http://www.cfhi-fcass.ca/Migrated/PDF/SynthesisReport_E_rev4_FINAL.pdf)

BC Medical Association. (2011). *Policy Statement - Multidisciplinary Primary Care*. Retrieved April 19, 2017 from [https://www.doctorsofbc.ca/sites/default/files/multidisciplinary\\_care\\_-\\_aug\\_2011.pdf](https://www.doctorsofbc.ca/sites/default/files/multidisciplinary_care_-_aug_2011.pdf)

BC Ministry of Health. (2005). *A Framework for Core Functions In Public Health: Resource Document*. Retrieved April 19, 2017 from [http://www.health.gov.bc.ca/library/publications/year/2005/core\\_functions.pdf](http://www.health.gov.bc.ca/library/publications/year/2005/core_functions.pdf)

BC Ministry of Health. (2013). *BC's Guiding Framework for Public Health. Promote, Protect, Prevent: Our Health Begins Here*. Retrieved April 19, 2017 from <http://www.health.gov.bc.ca/library/publications/year/2013/BC-guiding-framework-for-public-health.pdf>

- BC Ministry of Health. (2014). *Setting Priorities for the B.C. Health System*. Retrieved April 19, 2017 from <http://www.health.gov.bc.ca/library/publications/year/2014/Setting-priorities-BC-Health-Feb14.pdf>
- BC Ministry of Health. (2015a). *Primary and Community Care in BC: A Strategic Policy Framework*. Retrieved April 19, 2017 from [http://www.health.gov.bc.ca/library/publications/year/2015\\_a/primary-and-community-care-policy-paper-exec.pdf](http://www.health.gov.bc.ca/library/publications/year/2015_a/primary-and-community-care-policy-paper-exec.pdf)
- BC Ministry of Health. (2015b). *Rural Health Services in BC: A Policy Framework To Provide A System of Quality Care*. Retrieved April 19, 2017 from <http://www.health.gov.bc.ca/library/publications/year/2015/rural-health-policy-paper.pdf>
- Besner, J., Drummond, J., Oelke, N. D., Mckim, R., & Carter, M. R. (2011). *Optimizing the Practice of Registered Nurses in the Context of an Interprofessional Team in Primary Care. Final Report*. Retrieved April 19, 2017 from [www.albertahealthservices.ca/assets/info/res/if-res-hswru-pc-nursing-report-2010.pdf](http://www.albertahealthservices.ca/assets/info/res/if-res-hswru-pc-nursing-report-2010.pdf)
- Bodenheimer, T., Chen, E., & Bennett, H. D. (2009). Confronting the growing burden of chronic disease: can the U.S.. health care workforce do the job? *Health Affairs*, 28(1), 64–74. <http://doi.org/10.1377/hlthaff.28.1.64>
- Braithwaite, J. (2010). Between-group behaviour in health care: gaps, edges, boundaries, disconnections, weak ties, spaces and holes. A systematic review. *BMC Health Services Research*, 10(1), 330. <http://doi.org/10.1186/1472-6963-10-330>
- Brandt, B., Lutfiyya, M. N., King, J. A., Chioreso, C., Brandt, B., Lutfiyya, M. N., ... Chioreso, C. (2014). A scoping review of interprofessional collaborative practice and education using the lens of the Triple Aim A scoping review of interprofessional collaborative

- practice and education using the lens of the Triple Aim, 1820.  
<http://doi.org/10.3109/13561820.2014.906391>
- Brown, A. D., & Sullivan, R. U. and T. J. (2013). Public health and primary care: Competition or collaboration. *HealthcarePapers*, 13(3). <http://doi.org/10.12927/hcpap.2014.23690>
- Browne, A., Varcoe, C., Ford-Gilboe, M., & Wathen, C. N. (2015). On behalf of the EQUIP Research team. An overview of a multi-component intervention to enhance equity-oriented care in primary health care settings. *International Journal for Equity in Health*, 1–11. <http://doi.org/10.1186/s12939-015-0271-y>
- Browne, A., Varcoe, C. M., Wong, S. T., Smye, V. L., Lavoie, J., Littlejohn, D., ... Lennox, S. (2012). Closing the health equity gap: evidence-based strategies for primary health care organizations. *International Journal for Equity in Health*, 11, 59.  
<http://doi.org/10.1186/1475-9276-11-59>
- Browne, G., Roberts, J., Byrne, C., Gafni, A., Weir, R., & Majumdar, B. (2009). The costs and effects of addressing the needs of vulnerable populations: Results of 10 years of research. *Canadian Journal of Nursing Research*, 41(1).
- Bruner, P., Waite, R., & Davey, M. P. (2011). Providers' perspectives on collaboration. *International Journal of Integrated Care*, 11, e123.
- Bryant-Lukosius, D., Carter, N., Kilpatrick, K., Martin-Misener, R., Donald, F., Kaasalainen, S., ... DiCenso, A. (2010). The clinical nurse specialist role in Canada. *Nursing Leadership*, 23, 140–166. <http://doi.org/10.12927/cjnl.2010.22273>
- Butt, G., Markle-Reid, M., & Browne, G. (2008). Interprofessional partnerships in chronic illness care: a conceptual model for measuring partnership effectiveness. *International Journal of Integrated Care*, 8, e08.

- Canada Health Council. (2013). *Better Health, Better Care, Better Value for All*. Health Council of Canada. Retrieved April 19, 2017 from [www.healthcouncilcanada.ca/refocusinghealthcare/](http://www.healthcouncilcanada.ca/refocusinghealthcare/)
- Canadian Nurses Association. (2012a). *2010 Workforce Profile of Registered Nurses in Canada*. Retrieved April 19, 2017 from [https://www.cna-aiic.ca/~media/cna/page-content/pdf-en/2010\\_rn\\_snapshot\\_e.pdf](https://www.cna-aiic.ca/~media/cna/page-content/pdf-en/2010_rn_snapshot_e.pdf)
- Canadian Nurses Association. (2012b). *RN Workforce Profile by Area of Responsibility*. Retrieved April 19, 2017 from [https://www.cna-aiic.ca/~media/cna/page-content/pdf-en/2010\\_rn\\_profiles\\_e.pdf](https://www.cna-aiic.ca/~media/cna/page-content/pdf-en/2010_rn_profiles_e.pdf)
- Canadian Public Health Association. (1997). *Public Health Infrastructure in Canada*. Retrieved April 19, 2017 from [http://www.cpha.ca/uploads/policy/phinfra\\_e.pdf](http://www.cpha.ca/uploads/policy/phinfra_e.pdf)
- Chao, S. M., Donatoni, G., Bemis, C., Donovan, K., Harding, C., Davenport, D., ... Peck, M. G. (2010). Integrated approaches to improve birth outcomes: perinatal periods of risk, infant mortality review, and the Los Angeles Mommy and Baby Project. *Maternal and Child Health Journal*, 14(6), 827–37. <http://doi.org/10.1007/s10995-010-0627-2>
- Clancy, A., Gressnes, T., & Svensson, T. (2013). Public health nursing and interprofessional collaboration in Norwegian municipalities: a questionnaire study. *Scandinavian Journal of Caring Sciences*, 27(3), 659–668. <http://doi.org/10.1111/j.1471-6712.2012.01079.x>
- College of Licenced Practical Nurses of BC. (2015). *Scope of Practice for Licensed Practical Nurses*. Retrieved from <https://www.clpnbc.org/Documents/Practice-Support-Documents/Scope-of-Practice-ONLINE.aspx>
- College of Registered Nurses of BC. (2013). *Scope of practice of Nurse Practitioners*. Retrieved from <https://www.crnbc.ca/Standards/Lists/StandardResources/688ScopeforNPs.pdf>

- College of Registered Nurses of BC. (2016). *Scope of Practice for Registered Nurses*. Retrieved April 19, 2017 from [http://www.nursingworld.org/DocumentVault/Ethics\\_1/Code-of-Ethics-for-Nurses.html](http://www.nursingworld.org/DocumentVault/Ethics_1/Code-of-Ethics-for-Nurses.html)
- Colquhoun, H. L., Levac, D., O'Brien, K. K., Straus, S., Tricco, A. C., Perrier, L., ... Moher, D. (2014). Scoping reviews: time for clarity in definition, methods, and reporting. *Journal of Clinical Epidemiology*, 67(12), 1291–1294. <http://doi.org/10.1016/j.jclinepi.2014.03.013>
- Community Health Nurses of Canada. (2009). *The Public Health Nursing Discipline Specific Competencies Version 1.0*. Retrieved April 19, 2017 from <https://www.chnc.ca/phn-nursing-competencies.cfm>
- Davies, L. (2012). *Facilitating Collaboration between Primary Care and Public Health*. (Unpublished Masters thesis). University of Victoria, Victoria, B.C. Canada
- Elliott, L., McBride, T. D., Allen, P., Jacob, R. R., Mph, M. S. W., Jones, E., ... Brownson, R. C. (2014). Health care system collaboration to address chronic diseases : A nationwide practitioners. *Preventing Chronic Disease Public Health Research, Practice, and Policy*, 11(152), 1–11.
- Falk-Rafael, A. (1999). The politics of health promotion: influences on public health promoting nursing practice in Ontario, Canada from Nightingale to the nineties. *Advances in Nursing Science*, 22(1), 22–39.
- Falk-Rafael, A., & Betker, C. (2012). The primacy of relationships: a study of public health nursing practice from a critical caring perspective. *Advances in Nursing Science*, 35(4), 315–32. <http://doi.org/10.1097/ANS.0b013e318271d127>
- Falk-Rafael, A., & Betker, C. (2012). Witnessing Social Injustice Downstream and Advocating for Health Equity Upstream: “The Trombone Slide” of Nursing. *Advances in Nursing*

*Science*, 35(2). <http://doi.org/10.1097/ANS.0b013e31824fe70f>

Fang, R., Kmetc, A., & McCarney, J. (2010). *Provincial Health Services Authority: Summary Report on Health for British Columbia from Regional, Longitudinal and Gender Perspectives*. Retrieved April 19, 2017 from [http://www.phsa.ca/population-public-health-site/Documents/BCHealth\\_Indicators\\_Report.pdf](http://www.phsa.ca/population-public-health-site/Documents/BCHealth_Indicators_Report.pdf)

Farmanova, E., Kirvan, C., Verma, J., Mukerji, G., Akunov, N., Phillips, K., & Samis, S. (2016). Triple Aim in Canada: developing capacity to lead to better health, care and cost. *International Journal for Quality in Health Care*, 1–8. <http://doi.org/10.1093/intqhc/mzw118>

Ferrari, A., & Rideout, B. (2005). The collaboration of public health nursing and primary care nursing in the development of a nurse managed health center. *Nursing Clinics of North America*. <http://doi.org/10.1016/j.cnur.2005.08.006>

Ferrer, R. L., Gonzalez Schlenker, C., Lozano Romero, R., Poursani, R., Bazaldua, O., Davidson, D., ... Jaén, C. R. (2013). Advanced primary care in San Antonio: linking practice and community strategies to improve health. *Journal of the American Board of Family Medicine*. 26(3), 288–98. <http://doi.org/10.3122/jabfm.2013.03.120238>

General Practice Services Committee. (2015). *General Practice Services Committee Annual Report 2014/15*. Retrieved April 19, 2017 from [www.gpscbc.ca/sites/default/files/.../GPSC%20Annual%20Report%202014-2015.pdf](http://www.gpscbc.ca/sites/default/files/.../GPSC%20Annual%20Report%202014-2015.pdf)

Goodman, C., Davies, S., Dinan, S., Tai, S., & Iliffe, S. (2011). Activity promotion for community-dwelling older people: a survey of the contribution of primary care nurses. *British Journal of Community Nursing*, 16(1). <http://doi.org/http://dx.doi.org/10.12968/bjcn.2011.16.1.12>

- Green, M. E., Weir, E., Hogg, W., Etches, V., Moore, K., Hunter, D., & Birtwhistle, R. (2013). Improving collaboration between Public Health and Family Health Teams in Ontario. *Healthcare Policy* 8(3), e93–e104.
- Guest, G., MacQueen, K. M., & Namey, E. E. (2012). *Applied thematic analysis*. Thousand Oaks, California: SAGE.
- Haggerty, J. L., Lévesque, J.-F., Hogg, W., & Wong, S. (2013). The strength of primary care systems. *British Medical Journal (Clinical Research Ed.)*, 346(June13\_1), f3777. <http://doi.org/10.1136/bmj.f3777>
- Heller, R., Edwards, R., Patterson, L., & Elhassan, M. (2013). Public health in Primary Care Trusts: a resource needs assessment. *Public Health*, 117(3).
- Henneman, E. A. (1995). Nurse-physician collaboration: a poststructuralist view. *Journal of Advanced Nursing*, 22, 359–363. <http://doi.org/10.1046/j.1365-2648.1995.22020359.x>
- Hogg, W., Dahrouge, S., Russell, G., Tuna, M., Geneau, R., Muldoon, L., ... Johnston, S. (2009). Health promotion activity in primary care: Performance of models and associated factors. *Open Medicine*, 3(3), e165-73.
- Hogg, W., Huston, P., Martin, C., Saginur, R., Newbury, A., Vilis, E., & Soto, E. (2006). Promoting best practices for control of respiratory infections. *Canadian Family Physician*, 52(9), 1110–1111.
- Hutchison, B. (2013). Reforming Canadian primary care - don't stop half-way. *Healthcare Policy*, 9(1), 12–25.
- Hutchison, B., Levesque, J.-F., Strumpf, E., & Coyle, N. (2011). Primary Health Care in Canada: Systems in Motion. *The Milbank Quarterly*, 89(2), 256–88. <http://doi.org/10.1111/j.1468-0009.2008.00538.x>

- Institute of Medicine. (2012). *Primary Care and Public Health: Exploring Integration to Improve Population Health*. Retrieved April 19, 2017 from <http://iom.nationalacademies.org/Reports/2012/Primary-Care-and-Public-Health.aspx>
- Institute for Health Information. (2016). *Trends in income-related health inequalities in Canada: Technical report*. Retrieved April 19, 2017 from [https://secure.cihi.ca/free\\_products/trends\\_in\\_income\\_related\\_inequalities\\_in\\_canada\\_2015\\_en.pdf](https://secure.cihi.ca/free_products/trends_in_income_related_inequalities_in_canada_2015_en.pdf)
- Jakab, Z. (2013). Public health, primary care and the “cluster” model. *European Journal of Public Health, 23*(4), 528.
- Kardakis, T., Weinehall, L., Jerdén, L., Nyström, M. E., & Johansson, H. (2014). Lifestyle interventions in primary health care: professional and organizational challenges. *European Journal of Public Health, 24*(1), 79–84. <http://doi.org/10.1093/eurpub/ckt052>
- Kates, N., Hutchison, B., O’Brien, P., Fraser, B., Wheeler, S., & Chapman, C. (2012a). Framework for advancing improvement in primary care. *Healthcarepapers, 12*(2), 8–21. <http://doi.org/10.12927/hcpap.2012.22978>
- Kates, N., Hutchison, B., O’Brien, P., Fraser, B., Wheeler, S., & Chapman, C. (2012b). Framework for advancing improvement in primary care. *Healthcarepapers, 12*(2), 8–21. <http://doi.org/10.12927/hcpap.2012.22978>
- Keleher, H., & Parker, R. (2013). Health promotion by primary care nurses in Australian general practice. *Collegian, 20*(4), 215–221. <http://doi.org/10.1016/j.colegn.2012.09.001>
- Kelly, M., Glitenane, M., & Dowling, M. (2015). Public health nurses’ experiences of their role as part of a primary care team in Ireland. *Australian Journal of Advanced Nursing, 32*(3), 6–16.

- Kempe, A., Albright, K., O'Leary, S., Kolasa, M., Barnard, J., Kile, D., ... Barrow, J. (2014). Effectiveness of primary care-public health collaborations in the delivery of influenza vaccine: a cluster-randomized pragmatic trial. *Preventive Medicine*, 69, 110–116. <http://doi.org/10.1016/j.ypmed.2014.08.019>
- Kemppainen, V., Tossavainen, K., & Turunen, H. (2013). Nurses' roles in health promotion practice: an integrative review. *Health Promotion International*, 28(4), 490–501. <http://doi.org/10.1093/heapro/das034>
- Kiran, T., Victor, J. C., Kopp, A., Shah, B. R., & Glazier, R. H. (2012). The relationship between financial incentives and quality of diabetes care in Ontario, Canada. *Diabetes Care*, 35(5), 1038–46. <http://doi.org/10.2337/dc11-1402>
- Korhonen, P. E., Järvenpää, S., & Kautiainen, H. (2014). Primary care-based, targeted screening programme to promote sustained weight management. *Scandinavian Journal of Primary Health Care*, 32(1), 30–36. <http://doi.org/10.3109/02813432.2014.886493>
- Kousoulis, A. a, Angelopoulou, K.-E., & Lionis, C. (2013). Exploring health care reform in a changing Europe: Lessons from Greece. *European Journal of General Practice*, 19(January), 194–199. <http://doi.org/10.3109/13814788.2013.779663>
- Lasker, R., & Committee on Medicine and Public Health. (1997). *The power of collaboration. Medicine and Public Health*. Retrieved April 19, 2017 from [publichealth.jbpub.com/turnock/3e/chapterOutline/nyam\\_monograph1.pdf](http://publichealth.jbpub.com/turnock/3e/chapterOutline/nyam_monograph1.pdf)
- Lebrun LA, Shi L, Chowdhury J, Sripipatana A, Zhu J, Sharma R, ... Ngo-Metzger Q. (2012). Primary care and public health activities in select U.S. health centers: documenting successes, barriers, and lessons learned. *American Journal of Preventive Medicine*.
- Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: advancing the

- methodology. *Implementation Science*, 5, 69. <http://doi.org/10.1186/1748-5908-5-69>
- Levesque, J., Breton, M., Senn, N., Levesque, P., Bergeron, P., & Roy, D. a. (2013). The Interaction of Public Health and Primary Care : Functional Roles and Organizational Models that Bridge Individual and Population Perspectives. *Public Health Reviews*, 35(1), 1–27.
- Levy, J., Harris, J., Darby, P., Sacks, R., Dumanovsky, T., & Silver, L. (2011). The primary care nutrition training program: an approach to communication on behavior change. *Health Promotion Practice*, 12(5), 761–8. <http://doi.org/10.1177/1524839909349181>
- Liddy, C., Hogg, W., Russell, G., Wells, G., Armstrong, C. D., Akbari, A., ... Cornett, A. (2011). Improved delivery of cardiovascular care (IDOCC) through outreach facilitation: study protocol and implementation details of a cluster randomized controlled trial in primary care. *Implementation Science*. 6, 110. <http://doi.org/10.1186/1748-5908-6-110>
- Lindeke, L. L., & Sieckert, A. M. (2005). Nurse-physician workplace collaboration. *Online Journal of Issues in Nursing*, 10, 5. [http://doi.org/topic26/tpc26\\_4.htm](http://doi.org/topic26/tpc26_4.htm) [pii]
- Lorch, R., Hocking, J., Guy, R., Vaisey, A., Wood, A., Lewis, D., & Temple-Smith, M. (2015). Practice nurse chlamydia testing in Australian general practice: a qualitative study of benefits, barriers and facilitators. *BMC Family Practice*, 16(1), 36. <http://doi.org/10.1186/s12875-015-0251-8>
- MacLeod, M. L. P., Kulig, J. C., Stewart, N. J., Pitblado, J. R., & Knock, M. (2004). The nature of nursing practice in rural and remote Canada. *The Canadian Nurse*, 100(6), 27–31. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/15301092>
- MacLeod, M. L. P., Martin Misener, R., Banks, K., Morton, A. M., Vogt, C., & Bentham, D. (2008). “I’m a different kind of nurse”: advice from nurses in rural and remote Canada.

- Nursing Leadership*, 21(3), 40–53.
- MacPhee, M. (2009). Developing a practice-academic partnership logic model. *Nursing Outlook*, 57(3), 143–147. <http://doi.org/10.1016/j.outlook.2008.08.003>
- Markle-Reid, M., Browne, G., & Gafni, A. (2013). Nurse-led health promotion interventions improve quality of life in frail older home care clients: Lessons learned from three randomized trials in Ontario, Canada. *Journal of Evaluation in Clinical Practice*, 19(1), 118–131. <http://doi.org/10.1111/j.1365-2753.2011.01782.x>
- Markle-Reid, M., Browne, G., Gafni, A., Roberts, J., Weir, R., Thabane, L., ... Henderson, S. (2010). The effects and costs of a multifactorial and interdisciplinary team approach to falls prevention for older home care clients “at risk” for falling: a randomized controlled trial. *Canadian Journal on Aging*, 29(1), 139–161. <http://doi.org/10.1017/S0714980809990377>
- Markle-Reid, M., Weir, R., Browne, G., Roberts, J., Gafni, A., & Henderson, S. (2006). Health promotion for frail older home care clients. *Journal of Advanced Nursing*, 54(3), 381–395. <http://doi.org/10.1111/j.1365-2648.2006.03817.x>
- Martin Misener, R., & Bryant-Lukosius, D. (2014). *Optimizing the Role of Nurses in Primary Care in Canada*. Retrieved April 19, 2017 from <https://www.cna-aiic.ca/~media/cna/page-content/pdf-en/optimizing-the-role-of-nurses-in-primary-care-in-canada.pdf?la=en>
- Meagher-Stewart, D., Edwards, N., Aston, M., & Young, L. (2009). Population health surveillance practice of public health nurses. *Public Health Nursing*, 26(6), 553–60. <http://doi.org/10.1111/j.1525-1446.2009.00814.x>
- Metzelthin, S. F., Daniëls, R., van Rossum, E., Cox, K., Habets, H., de Witte, L. P., & Kempen,

- G. I. J. M. (2013). A nurse-led interdisciplinary primary care approach to prevent disability among community-dwelling frail older people: A large-scale process evaluation. *International Journal of Nursing Studies*, 50(9), 1184–1196.  
<http://doi.org/10.1016/j.ijnurstu.2012.12.016>
- Mildon, B. (2013). Nursing in Canada: Roles, resurgence and resolve. *British Journal of Nursing*, 22(2). <http://doi.org/http://dx.doi.org/10.12968/bjon.2013.22.2.74>
- Millar, J. (2012). *Sustainability of the Health Care System*. Retrieved April 19, 2017 from [phabc.org/.../PHABC\\_Jan-7-12\\_Select-Standing-Committee\\_Health\\_John-Millar.pdf](http://phabc.org/.../PHABC_Jan-7-12_Select-Standing-Committee_Health_John-Millar.pdf)
- Millar, J., Bruce, T., Cheng, S. M., Masse, R., & McKeown, D. (2013). Is public health ready to participate in the transformation of the healthcare system. *Healthcare Papers*.  
<http://doi.org/http://doi.org/10.12927/hcpap.2014.23689>
- Monsen, K. a., Attleson, I. S., Erickson, K. J., Neely, C., Oftedahl, G., & Thorson, D. R. (2015). Translation of Obesity Practice Guidelines: Interprofessional Perspectives Regarding the Impact of Public Health Nurse System-Level Intervention. *Public Health Nursing*, 32(1), 34–42. <http://doi.org/10.1111/phn.12139>
- Morton, J., Withers, M., Konrad, S. C., Buterbaugh, C., & Spence, R. (2015). Bridging the gaps: An early integrated support collaborative for at risk mothers in rural Maine. *Work*, 50(3), 413–23. <http://doi.org/10.3233/WOR-151999>
- Munro, S., Kornelsen, J., & Grzybowski, S. (2013). Models of maternity care in rural environments: Barriers and attributes of interprofessional collaboration with midwives. *Midwifery*, 29(6), 646–652. <http://doi.org/10.1016/j.midw.2012.06.004>
- Naccarella, L., Southern, D., Furler, J., Scott, A., Prosser, L., Young, D., ... Waters, E. (2008). Primary care funding and organisational policy options and implications: a narrative

- review of evidence from five comparator countries. *Medical Journal of Australia*, 188(8), S73--S76.
- National Collaborating Centre for Methods and Tools. (2012). *Outreach Planning Guide: National Collaboration Centre for Infectious Diseases*. Hamilton, ON: McMaster University. Retrieved April 19, 2017 from <http://www.nccmt.ca/resources/search/179>
- Oandasan, I. F., Gotlib Conn, L., Lingard, L., Karim, A., Jakubovicz, D., Whitehead, C., ... Reeves, S. (2009). The impact of space and time on interprofessional teamwork in Canadian primary health care settings: implications for health care reform. *Primary Health Care Research & Development*. <http://doi.org/10.1017/S1463423609001091>
- Oandasan, I. F., Hammond, M., Conn, L. G., Callahan, S., Gallinaro, A., & Moaveni, A. (2010). Family practice registered nurses: The time has come. *Canadian Family Physician*, 56(10), e375-82.
- Oelke, N. D., Wilhelm, A., Jackson, K., Sutter, E., & Carter, R. (2012). *Optimizing Collaborative Practice of Nurses in Primary Care Settings*. Retrieved April 19, 2017 from [www.albertahealthservices.ca/assets/info/res/if-res-wre-nurse-collab-report.pdf](http://www.albertahealthservices.ca/assets/info/res/if-res-wre-nurse-collab-report.pdf)
- Oliver, T. R. (2006). the Politics of Public Health Policy. *Annual Review of Public Health*, 27(1), 195–233. <http://doi.org/10.1146/annurev.publhealth.25.101802.123126>
- Passey, M., Fanaian, M., Lyle, D., & Harris, M. (2010). Assessment and management of lifestyle risk factors in rural and urban general practices in Australia. *Australian Journal of Primary Health*, 16(1), 81–86.
- Peckham, S., Econ, M. a, Hann, A., & Hons, B. a. (2011). Health promotion and ill-health prevention: the role of general practice. *Quality in Primary Care*, 317–324.
- Plumb, J., Weinstein, L. C., Brawer, R., & Scott, K. (2012). Community-Based Partnerships for

- Improving Chronic Disease Management. *Primary Care - Clinics in Office Practice*.  
<http://doi.org/10.1016/j.pop.2012.03.011>
- Price, D., Greaves, N., Chan, D., & Greaves, N. (2014). Physician surveillance of influenza  
Collaboration between primary care and public health. *Canadian Family Physician*,  
*60*(1), 7–15.
- Psaila, K., Fowler, C., Kruske, S., & Schmied, V. (2014). A qualitative study of innovations  
implemented to improve transition of care from maternity to child and family health  
(CFH) services in Australia. *Women and Birth*, *27*(4), e51–e60.  
<http://doi.org/10.1016/j.wombi.2014.08.004>
- Psaila, K., Kruske, S., Fowler, C., Homer, C., & Schmied, V. (2014). Smoothing out the  
transition of care between maternity and child and family health services: perspectives of  
child and family health nurses and midwives'. *BMC Pregnancy and Childbirth*, *14*(1),  
151. <http://doi.org/10.1186/1471-2393-14-151>
- Psaila, K., Schmied, V., Fowler, C., & Kruske, S. (2014). Discontinuities between maternity and  
child and family health services : health professional ' s perceptions. *BMC H*.
- Psaila, K., Schmied, V., Fowler, C., & Kruske, S. (2015). Interprofessional collaboration at  
transition of care: Perspectives of child and family health nurses and midwives. *Journal  
of Clinical Nursing*, *24*(1–2), 160–172. <http://doi.org/10.1111/jocn.12635>
- Public Health Agency of Canada. (2008). *Core Competencies for Public health in Canada*.  
Retrieved April 19, 2017 from <http://www.phac-aspc.gc.ca/php-ppsp/ccph-cesp/pdfs/cc-manual-eng090407.pdf>
- Raphael, D., Rioux, M. H., & Bryant, T. (2010). *Staying alive*. Canadian Scholars' Press Inc.
- Reeves, S., Zwarenstein, M., Goldman, J., Barr, H., Freeth, D., Hammick, M., & Koppel, I.

- (2008). Interprofessional education: effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews (Online)*, (1), CD002213.  
<http://doi.org/10.1002/14651858.CD002213.pub2>
- Registered Nurses Association of Ontario. (2012). *Primary Solutions for Primary Care: Maximizing and Expanding the Role of the Primary Care Nurse in Ontario*. Retrieved April 19, 2017 from [http://rnao.ca/sites/rnao-ca/files/Primary\\_\\_Care\\_Report\\_2012\\_0.pdf](http://rnao.ca/sites/rnao-ca/files/Primary__Care_Report_2012_0.pdf)
- Richard, L., Gendron, S., Beaudet, N., Boisvert, N., Sauvé, M., & Garceau-Brodeur, M. (2010). Health promotion and disease prevention among nurses working in local public health organizations in Montréal, Québec. *Public Health Nursing*, 27(5), 450–8.  
<http://doi.org/10.1111/j.1525-1446.2010.00878.x>
- Roden, J., Jarvis, L., Campbell-Crofts, S., & Whitehead, D. (2015). Australian rural, remote and urban community nurses' health promotion role and function. *Health Promotion International*, dav018-. <http://doi.org/10.1093/heapro/dav018>
- Royal Society for Public Health. (2015). *In good health Public health teams in local authorities Year 2*. Retrieved April 19, 2017 from [http://www.rsph.org.uk/filemanager/root/site\\_assets/our\\_work/reports\\_and\\_publications/publichealth\\_03.02.15.ind.2\\_.pdf](http://www.rsph.org.uk/filemanager/root/site_assets/our_work/reports_and_publications/publichealth_03.02.15.ind.2_.pdf)
- Russell, G., Dahrouge, S., Tuna, M., Hogg, W., Geneau, R., & Gebremichael, G. (2010). Getting it all done. Organizational factors linked with comprehensive primary care. *Family Practice*, 27(5), 535–41. <http://doi.org/10.1093/fampra/cmq037>
- Ruth Lavergne, M., Peterson, S., Mckendry, R., Sivananthan, S., & Mcgrail, K. (2014). Full-service family practice in British Columbia: Policy interventions and trends in practice, 1991-2010. *Healthcare Policy*, 9(4), 32–47. <http://doi.org/10.12927/hcpol.2014.23782>

- Schofield, R., Ganann, R., Brooks, S., McGugan, J., Dalla Bona, K., Betker, C., ... Watson, C. (2011). Community health nursing vision for 2020: shaping the future. *Western Journal of Nursing Research*, 33(8), 1047–68. <http://doi.org/10.1177/0193945910375819>
- Schraeder, C., Fraser, C. W., Clark, I., Long, B., Shelton, P., Waldschmidt, V., ... Lanker, W. K. (2008). Evaluation of a primary care nurse case management intervention for chronically ill community dwelling older people. *Journal of Clinical Nursing*, 17(11C), 407–417. <http://doi.org/10.1111/j.1365-2702.2008.02578.x>
- Serpas, S., Brandstein, K., McKennett, M., Hillidge, S., Zive, M., & Nader, P. R. (2013). San Diego Healthy Weight Collaborative: a systems approach to address childhood obesity. *Journal of Health Care for the Poor and Underserved*, 24(2), 80–96. <http://doi.org/10.1353/hpu.2013.0107>
- Shalala, D. E. (1998). Collaboration in the fight against infectious diseases. *Emerging Infectious Diseases*, 4(3), 354–7. <http://doi.org/10.3201/eid0403.980302>
- Sherer, R., Stieglitz, K., Narra, J., Jasek, J., Green, L., Moore, B., ... Cohen, M. (2002). HIV multidisciplinary teams work: support services improve access to and retention in HIV primary care. *AIDS Care*, 14 Suppl 1, S31–S44. <http://doi.org/10.1080/09540120220149975>
- Shim, R., & Rust, G. (2013). Primary care, behavioral health, and public health: Partners in reducing mental health stigma. *American Journal of Public Health*. <http://doi.org/10.2105/AJPH.2013.301214>
- Sicotte, C., D'Amour, D., & Moreault, M.-P. (2002). Interdisciplinary collaboration within Quebec Community Health Care Centres. *Social Science & Medicine* (1982), 55(6), 991–1003.

- Stamler, L. L., & Yiu, L. (2012). *Community health nursing*. Pearson Canada.
- Starfield, B. (2008). Primary care in Canada: coming or going? *HealthcarePapers*.  
<http://doi.org/12927/hcpap.2008.19711>
- Starfield, B., Shi, L., & Macinko, J. (2005). Contribution of primary care to health systems and health. *The Milbank Quarterly*, 83(3), 457–502. <http://doi.org/10.1111/j.1468-0009.2005.00409.x>
- Stevenson Rowan, M., Hogg, W., & Huston, P. (2007). Integrating public health and primary care. *Healthcare Policy*, 3(1), e160-81.
- Strumpf, E., Levesque, J.-F., Coyle, N., Hutchison, B., Barnes, M., & Wedel, R. J. (2012). Innovative and Diverse Strategies Toward Primary Health Care Reform: Lessons Learned from the Canadian Experience. *The Journal of the American Board of Family Medicine*.  
<http://doi.org/10.3122/jabfm.2012.02.110215>
- Su, Z., Khoshnood, K., & Forster, S. H. (2015). Assessing the impact of community health nurses on improving primary care use by homeless/marginally housed persons. *Journal of Community Health Nursing*, 32(3), 161–169.  
<http://doi.org/10.1080/07370016.2015.1057082>
- Suter, E., Arndt, J., Arthur, N., Parboosingh, J., Taylor, E., & Deutschlander, S. (2009). Role understanding and effective communication as core competencies for collaborative practice. *Journal of Interprofessional Care*, 23(1), 41–51.  
<http://doi.org/10.1080/13561820802338579>
- Taylor, G. (2014). *The Chief Public Health Officer's Report on the State of Public Health in Canada 2014*. Retrieved April 19, 2017 from <http://www.phac-aspc.gc.ca/cphorsphc-respcacsp/2014/assets/pdf/2014-eng.pdf>

- Trilling, B., & Fadel, C. (2012). 21st Century Skills. *Learning for Life in Our Times*. Wiley & Sons
- Tubbs-Cooley, H. L., Martsof, D. S., Pickler, R. H., Morrison, C. F., & Wardlaw, C. E. (2013). Development of a regional nursing research partnership for academic and practice collaborations. *Nursing Research and Practice*, 2013, 473864.  
<http://doi.org/10.1155/2013/473864>
- Underwood, J. M., Mowat, D. L., Meagher-Stewart, D. M., Deber, R. B., Baumann, A. O., MacDonald, M. B., ... Munroe, V. J. (2009). Building community and public health nursing capacity: a synthesis report of the National Community Health Nursing Study. *Canadian Journal of Public Health*, 100(5), 11-11.
- Valaitis, R., Martin-Misener, R., Wong, S. T., MacDonald, M., Meagher-Stewart, D., Austin, P., ... Savage, R. (2012). Methods, strategies and technologies used to conduct a scoping literature review of collaboration between primary care and public health. *Primary Health Care Research & Development*. <http://doi.org/10.1017/S1463423611000594>
- Valaitis, R., McCarthy, J., Nelligan, P., MacDonal, M., Wong, S., Martin-Misener, R., & Meagher-Stewart, D. (2013). *Strengthening Primary Health Care through Primary Care and Public Health Collaboration*. Retrieved April 19, 2017 from <http://www.cfhi-fcass.ca/SearchResultsNews/12-12-14/5a626084-a6e6-4c75-a421-feb115cceed5.aspx>
- van Avendonk, M. J. P., Mensink, P. A. J. S., Ton Drenthen, A. J. M., & van binsbergen, J. J. (2012). Primary care and public health a natural alliance? The introduction of the guidelines for obesity and undernutrition of the dutch college of general practitioners. *Family Practice*, 29(SUPPL. 1), 31–35. <http://doi.org/10.1093/fampra/cmr095>
- Van Ess Coeling, H., & Cukr, P. L. (2000). Communication styles that promote perceptions of

- collaboration, quality, and nurse satisfaction. *Journal of Nursing Care Quality*, 14, 63–74. <http://doi.org/10.1097/00001786-200001000-00009>
- Weinstein, L. C., LaNoue, M. D., Plumb, J. D., King, H., Stein, B., & Tsemberis, S. (2013). A Primary Care-Public Health Partnership Addressing Homelessness, Serious Mental Illness, and Health Disparities. *The Journal of the American Board of Family Medicine*, 26(3), 279–287. <http://doi.org/10.3122/jabfm.2013.03.120239>
- White, D., Oelke, N. D., Besner, J., Doran, D., McGillis Hall, L., & Giovannetti, P. (2008). Nursing scope of practice: descriptions and challenges. *Nursing Leadership*, 21(1), 44–57.
- Whitehead, D. (2009). Reconciling the differences between health promotion in nursing and “general” health promotion. *International Journal of Nursing Studies*, 46(6), 865–874. <http://doi.org/10.1016/j.ijnurstu.2008.12.014>
- Whittington, J. W., Nolan, K., Lewis, N., & Torres, T. (2015). Pursuing the Triple Aim: The first 7 years. *The Milbank Quarterly*, 93(2), 263–300. <http://doi.org/10.1111/1468-0009.12122>
- Wong, S. T., Lynam, M. J., Khan, K. B., Scott, L., & Loock, C. (2012). The social paediatrics initiative: a RICHER model of primary health care for at risk children and their families. *BMC Pediatrics*, 12, 158. <http://doi.org/10.1186/1471-2431-12-158>
- Wong, S., Watson, D., Young, E., Mooney, D., & MacLeod, M. (2006). *Who are the Primary health Care Registered Nurses in British Columbia*. Retrieved June 2015 from <http://www.chspr.ubc.ca/files/publications/2006/chspr06-4.pdf>
- World Health Organization. (2008). *The World Health Report 2008. Primary Health Care - Now More Than Ever*. WHO (Vol. 26). Retrieved April 19, 2017 from [http://www.who.int/whr/2008/whr08\\_en.pdf](http://www.who.int/whr/2008/whr08_en.pdf)

World Health Organization. (2010). Framework for Action on Interprofessional Education & Collaborative Practice. *Practice*, 1–63. Retrieved April 19, 2017 from

[http://www.who.int/hrh/resources/framework\\_action/en/](http://www.who.int/hrh/resources/framework_action/en/)

Wynn, A., & Moore, K. M. (2012). Integration of primary health care and public health during a public health emergency. *American Journal of Public Health*, 102(11), e9–e12.

<http://doi.org/10.2105/AJPH.2012.300957>

Zwarenstein, M., & Reeves, S. (2002). Working together but apart: barriers and routes to nurse--physician collaboration. *The Joint Commission Journal on Quality Improvement*, 28, 242–247, 209.

## Appendix A

### British Columbia Health Authorities

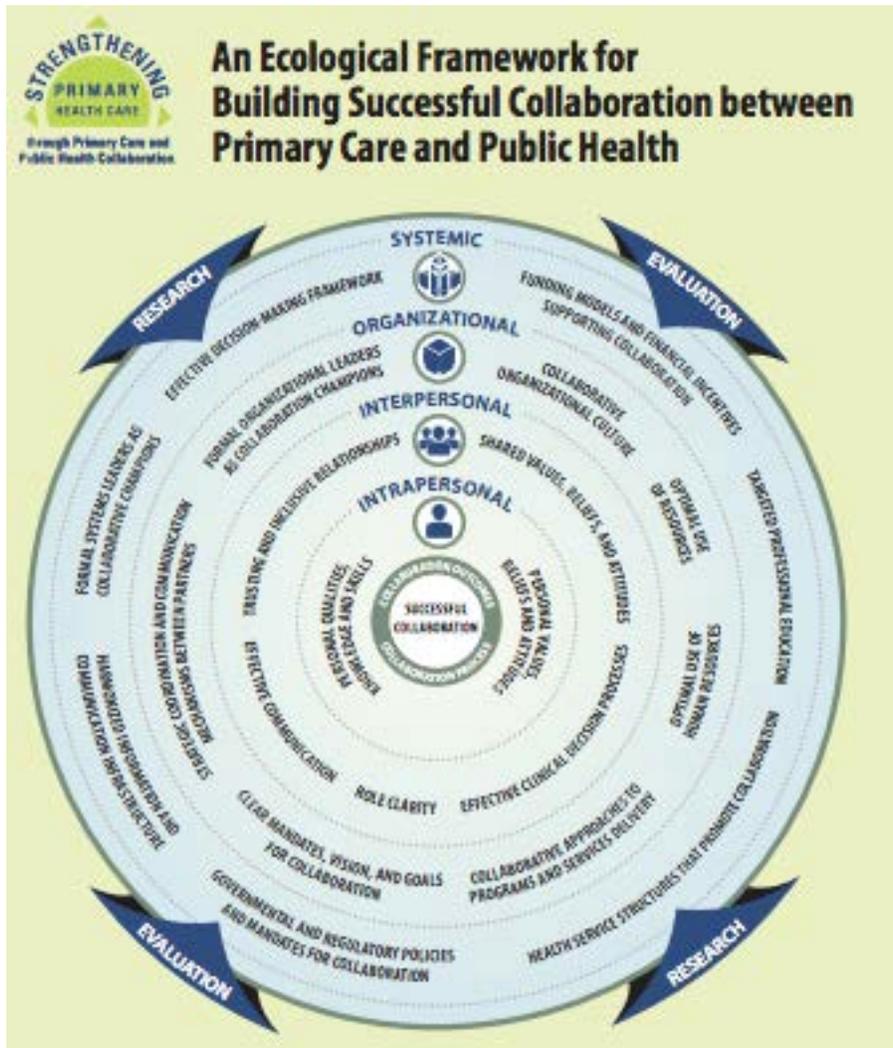


Retrieved July 10, 2015 from [http://www.screeningbc.ca/NR/rdonlyres/DCA49593-5C01-4DC3-B7EA-557C16CCC5B4/0/bcca\\_map.gif](http://www.screeningbc.ca/NR/rdonlyres/DCA49593-5C01-4DC3-B7EA-557C16CCC5B4/0/bcca_map.gif)

## Appendix B

### Primary Care/Public Health Frameworks/Models of Collaboration

The Ecological Framework for Building Successful collaboration between Primary Care and Public Health(Valaitis et al., 2013, p.44)



## Canadian Primary Care/Public Health Collaboration (Valaitis et al., 2013)

	<b>Facilitators</b>	<b>Barriers</b>
<b>Systems Level</b>	<ul style="list-style-type: none"> <li>• Government endorsement of the value of collaboration</li> <li>• Sustained government funding</li> <li>• Resources available through pooling and sharing</li> <li>• Professional education supporting collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of stable funding as well as evaluation funding for collaboration projects</li> <li>• Siloed medical service and public health</li> <li>• Lack of an adequate IT structure</li> </ul>
<b>Organization Level</b>	<ul style="list-style-type: none"> <li>• Multi-professional involvement</li> <li>• Joint planning by PC,PH and community agencies</li> <li>• Clear lines of accountability</li> <li>• Use of a standardized IT system for data collection and sharing</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of a common vision</li> <li>• Individual/short term focus</li> <li>• Resource limitations</li> <li>• Lack of capacity to coordinate complex teams</li> <li>• Limited understanding of community needs</li> </ul>
<b>Interactional Level</b>	<ul style="list-style-type: none"> <li>• Clear roles and responsibilities of all players</li> <li>• Trust, tolerance and respect</li> <li>• Effective communication</li> </ul>	<ul style="list-style-type: none"> <li>• Resistance to change</li> <li>• Competing priorities</li> <li>• Poor rapport between PC/PH and community partners</li> <li>• Inadequate understanding of specific roles and teamwork</li> </ul>

### Institute of Medicine.

#### Five Principles of Successful Primary Care/Public Health Collaboration

- Shared goal of population health improvement.
- Community involvement to define and address community health issues.
- Aligned leadership that bridges disciplines, jurisdiction, clarifies roles.
- Sustainability of collaboration through shared infrastructure.
- Sharing of data and analysis between PH and PC.

## Lasker's Collaboration Model (Lasker, 1997)

<b>Lasker's Collaboration between Medicine and Public Health</b>	
<b>Synergy</b>	<b>Examples</b>
<b>Improving health care by coordinating services for individuals</b>	<ul style="list-style-type: none"> <li>• Bring new personnel and services to existing practice sites</li> <li>• Establish 'one-stop' centres</li> <li>• Coordinate services provided at different sites</li> </ul>
<b>Improving access to care by establishing frameworks to provide care for the uninsured</b>	<ul style="list-style-type: none"> <li>• Establish free clinics</li> <li>• Establish referral networks</li> <li>• Enhance clinical staffing at public health facilities</li> <li>• Shift indigent patients to mainstream medical settings</li> </ul>
<b>Improving quality and cost-effectiveness of care by applying a population perspective to medical practice</b>	<ul style="list-style-type: none"> <li>• Use population-based information to enhance clinical decision making</li> <li>• Use population-based strategies to funnel patients to medical care</li> <li>• Use population base analytic tools to enhance practice management</li> </ul>
<b>Using clinical practice to identify and address community health problems</b>	<ul style="list-style-type: none"> <li>• Use clinical encounter to build community-wide databases</li> <li>• Use clinical opportunities to identify and address underlying causes of health problems</li> <li>• Collaborate to achieve clinically oriented community health objectives</li> </ul>
<b>Strengthening health promotion and health protection by mobilizing community campaigns</b>	<ul style="list-style-type: none"> <li>• Conduct community health assessments</li> <li>• Mount health education campaigns</li> <li>• Advocate health-related laws and regulations</li> <li>• Engage in community-wide campaigns to achieve health promotion objectives</li> </ul>
<b>Shaping the future direction of the health system by collaboration around policy, training and research</b>	<ul style="list-style-type: none"> <li>• Influence health system policy</li> <li>• Engage in cross-sector education, training and research</li> </ul>