CHSRF

Interprofessional Collaborative Teams

June 2012

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Canadian Health Services Research Foundation

Commissioned Paper by Canadian Nurses Association

CANADIAN NURSES ASSOCIATION

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ISBN 978-1-927024-53-9

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KEY MESSAGES

- Contrary to popular belief, there is an array of interprofessional collaborative care models in primary care with an essential role for nurses. Many of these models are found in Canada and also internationally.
- Five types of interprofessional care models with a substantive role for nurses were found in the published and grey literature:
  - Interprofessional team models
  - Nurse-led models
  - Case management models
  - Patient navigation models
  - Shared care models
- One or more models of care can be implemented within the same healthcare setting.
- Evidence to support the effectiveness of these models of care varies, but there are increasingly positive patient, provider and system level outcomes.
- Choosing the right model is dependent on the context. The context variables include:
  - Leadership (particularly nursing leadership), advocacy and championing of specific model
  - Political environment, biases and supports
  - Regulatory environment
  - Knowledge about the needs of the specific population being targeted
  - Availability, preparation and experience of human resources
  - Willingness of providers to collaborate
  - Capacity to train the appropriate mix of providers
  - Supports for team development (opportunities or forums, time, funding
  - Supports to address the challenges and gaps in the healthcare system
  - Available assets (balance in workload, funding, expertise, space, in-kind supports).
- Lessons learned about planning and implementing interprofessional service delivery models of care need to be disseminated broadly along with supports for implementation.
- More research is required to identify the essential components of each of the five models; however, since context matters, implementation of innovative models of care should be encouraged, accompanied by rigorous evaluation.

EXECUTIVE SUMMARY

As Canada strategizes on how best to provide equitable access to healthcare to its citizens, careful attention is being placed on how to optimize its health human resources in the most cost-effective manner. Increasingly, the response to this interest is to leverage and optimize the largest group of healthcare providers – nurses – while acknowledging that healthcare recipients require a range of knowledge and skills from a wide array of health professionals.

What examples of interprofessional collaborative models of care have been tested in primary healthcare? A scoping literature review was conducted that included published and grey literature as well as information gathered from key informants. The objectives of the review were (1) to gather examples of models of care in primary care and other non-acute care settings that included a substantive role for nurses, and (2) to understand the effectiveness of these models as well as the essential factors that influence their successful implementation.

The models of care identified from the review were loosely grouped in five broad categories:

1. Interprofessional team models
2. Nurse-led models
3. Case management models
4. Patient navigation models
5. Shared care models

Interprofessional team models are teams with different healthcare disciplines working together towards common goals to meet the needs of a patient population. Team members divide the work based on their scope of practice; they share information to support one another's work and coordinate processes and interventions to provide a number of services and programs. In advanced or mature collaborative teams, the patient and family are included as key members of the team. Examples of interprofessional team models include family health teams, community health centre teams, and integrated health teams. Positive evidence of interprofessional team models is building, particularly for teams working with patients with chronic diseases and/or mental health needs.

Interprofessional team models of care vary based on the context, intra-group processes, nature of the tasks, and intensity of collaboration that are engineered in the structure and processes of the teams. The intensity of collaboration ranges from consultative activities to integrative work practices. The effectiveness of teams is dependent on the team members' knowledge of one another's roles and scopes of practice; mutual trust and respect amongst the team members; commitment in building relationships; willingness to cooperate and collaborate; and the extent to which the team has organizational supports. Incentives such as appropriate system-level policies/legislation, favourable compensation models, balance in workload, working arrangements (opportunities to communicate, discussion, conducting joint work) and team characteristics (team size, team leadership) influence how team members collaborate to achieve positive outcomes.

Nurse-led models of care are formal programs, centres, clinics or services that place primacy on the nurse's role, and where the nurse independently and collaboratively provides nursing services. The nurse's interventions are holistic in nature and include assessment, treatment, patient education, and health- and self-care supports, as well as outreach activities for hard-to-reach populations. Examples of nurse-led models include RN-led (led by registered nurses) or NP-led (led by nurse practitioners) clinics, nursing centres, or specific programs embedded in other broader programs or teams. Nurse-led programs can

be generic, such as those that provide care for patients with undifferentiated problems, as in a primary care clinic, or they can be models designed for very specific patient groups or care needs (for example, cardiac patients, patients with rheumatoid arthritis, patients who require colorectal screening using flexible sigmoidoscopy or patients who need support with smoking cessation). Evidence shows that nurse-led models of care provide equal or better care when compared to physician-led models of care.

Case management models are most often embedded in multidisciplinary or interdisciplinary team models and tend to focus on complex or high-resource groups of patients such as patients with chronic conditions. The key feature is the assignment of a defined number of patients to one provider (a case manager) who takes the lead in coordinating the activities to meet patient goals, such as supporting the patients to remain in the community for as long as possible. The focus in this model tends to be on system-level factors such as preventing readmission or decreasing length of stay in hospitals. Nurses are often in the formal role of a case manager, as they bring a broad set of knowledge and skills (clinical, interpersonal and problem-solving). The evaluation of case management models has been difficult, as it is challenging to isolate the key elements that contribute to the outcomes. Research findings are mixed.

Patient navigation models are relatively new in the healthcare sector. They require a navigator who has a multifaceted role as a patient advocate, helping the patient navigate through the healthcare system by circumventing and/or removing barriers while coordinating activities to meet the patient's needs. Navigators can be nurses, social workers or lay persons. Patient navigators tend to focus on the patient's experience, ensuring the patient receives timely services as well as ensuring that he or she does not fall through the cracks in the healthcare system. Navigators who are nurses assess patients, address symptom management and "fast track" patients through the system, depending on clinical status. These models of care are being used with patients suspected as having, or who have been diagnosed with, cancer, as well as patients who have chronic diseases. The model has had mixed research findings.

Shared care models are primarily models in which two healthcare providers (for example, a nurse and a physician, nurse and pharmacist or nurse and community health worker) share or have joint responsibility for specific patient groups or programs. Other providers are involved, but to a significantly lesser degree. Sharing or co-management of patients or programs requires clear roles and responsibilities, high levels of communication and collaboration, and a high degree of trust and mutual respect for each other's contribution to patient care. There are mixed findings on the impact of these models on health and system outcomes. Issues are primarily related to role ambiguity and trust between providers.

An extensive inventory of barriers and enablers was identified from the literature and from analysis of the case studies. These are grouped in five categories:

1. Policy/system factors (favourable legislation for optimizing scope of practice)
2. Appropriate model of care factors (suitable to patient population needs)
3. Individual/team factors (effective interprofessional collaboration)
4. Organization factors (appropriate business case)
5. Implementation factors (training, integrated work processes)

These factors have not been differentiated for the five models because there are significant commonalities in barriers and enablers across the models.

Five broad recommendations are made based on the lessons learned from this scoping review:

1. Study further the models of care identified in this scoping review.
2. Be open to the plurality of primary healthcare models, at least in the short run. Supporting diverse models of care is a good thing.
3. Develop a pan-Canadian strategy to integrate registered nurses and nurse practitioners in primary care *models* of care.
4. Promote the use of evidence-based implementation of models of care using the PEPPA framework (Participatory, Evidence-based, Patient-focused Process, for guiding the development, implementation, and evaluation of advanced nursing practice.
5. Support nurses in their quest to implement innovative models of care in primary care.

1 INTRODUCTION

Numerous calls have been made to continue to improve the healthcare system, not only in terms of access but also in terms of effectiveness, efficiency and value for money[1,2,3]. Optimizing utilization of health human resources has been a consistent theme over the last decade[4]. Increasingly, the response to this challenge is to leverage and optimize the largest provider of healthcare – nurses – and in doing so, leverage the apparent benefits of interprofessional collaborative teams[5].

This paper aims to explore and explain the use of models of care delivery that optimally utilize the role of nurses in primary healthcare, community-based care and other non-acute care contexts such as chronic disease management, long-term care, continuing care, health promotion and disease prevention. Additionally, exemplar models of care, as case studies, are identified to highlight essential elements of effective service delivery models and strategies for successful application. Ultimately, this paper aims to inform the Canadian Nurses Association's efforts to address policy priorities for a renewed health accord in Canada.

2 PARAMETERS OF THE SCOPING REVIEW

2.1 OBJECTIVES

The objectives of this paper were shaped by the directions provided by a working group of the Canadian Nurses Association. Specifically, the objectives of the paper were to:

1. Report on the findings of a scoping review of interprofessional teams that include registered nurses and/or nurse practitioners in the context of primary healthcare, community and other non-acute care settings.
2. Provide specific examples of interprofessional teams in Canada that have demonstrated success from multiple perspectives (for example, patient, practice and system levels; chronic care models).
3. Based on evidence and expert opinion, identify the essential elements or key attributes of an efficient model for interprofessional teams.
4. Provide a brief analysis of the barriers to fully integrating interprofessional models of care into the Canadian health system.
5. Identify key success factors for implementing interprofessional models of care that involve nurses and nurse practitioners.

2.2 QUESTIONS GUIDING THE SCOPING REVIEW

The following questions guided the scoping review, based on the stated objectives:

a) What are the types of interprofessional collaboration models that have been tested or implemented in Canada and elsewhere?

b) What is the role of the nurse in these models of care?

c) What are the essential elements or key attributes of an efficient model for interprofessional teams?

d) What factors pose barriers to the successful application of the models of care?

e) What are the factors that have made interprofessional models successful?

3.0 METHODS

3.1 OVERVIEW

The following key methods were used to gather the information for this paper:

a) Review of the literature to explore the variety of interprofessional models of care involving nurses.

b) Review of grey literature (unpublished reports and papers) describing models of care including field evaluation studies.

c) Review of CNA's concurrent papers.

d) Interviews with key informants to develop detailed case studies of models of primary healthcare found in Canada.

3.2 IDENTIFYING INFORMATION SOURCES TO INCLUDE IN THE REVIEW

A scoping review methodology was used, as this approach allows an examination of the extent, range and nature of research activity and other literature with some degree of flexibility with respect to the quality of the publications. The value of scoping reviews is that they allow a topic area to be explored with some liberty with respect to the quality of the existing literature, and serve as a foundation for more rigorous review[6].

We used a modification of the five steps identified by Arksey and O'Malley[7] for a scoping review:

1. Identifying the research question(s).
2. Identifying relevant systematic reviews, randomized controlled trials (RCTs), qualitative research studies, evaluation papers, reports, and descriptive information on models of care found on government, professional association, research and policy institution websites.
3. Selecting papers to include in the review.
4. Collating and summarizing the information in a summary table (our initial tables were detailed; these were further summarized for this report).
5. Reporting the results.

In addition, we contacted individuals who could provide greater detail on selected models of care so that we could write five case studies exemplifying the different models in Canada. We interviewed 10 key informants (KI) by phone and/or received information by e-mail on select case studies (case study 1, 2 KI; case study 2, 1 KI; case study 3, 5 KI; case study 4, 2 KI; case study 5, 1 KI). Key informants were recommended by nursing leaders in the field based on who could best articulate the development and implementation of the model of care. Additional reports and documents provided by the key informants were reviewed to validate and/or add detail and clarification for the written case studies.

3.3 SEARCH STRATEGY AND INFORMATION EXTRACTION

The following literature databases were used to search and access published literature: Cochrane Database of Systematic Reviews, Pubmed, CINAHL, HealthSTAR and Health-Evidence.ca. In addition, web searches were conducted using Google, and hand searches were done using reference lists from key reports and articles, as well as suggestions made by key informants. Broad search terms were used, including interprofessional teams, healthcare teams, collaboration, and primary healthcare. Additionally, specific search terms were used, including family health teams, chronic management teams and nurse-led models. (See Appendix A for detailed search strategy and articles included in the review.) The following criteria were used to include articles in the review:

a) Written in English or French.

b) Published or disseminated on the website from 2001 to 2012 (papers were limited to those that were part of the recent rounds of primary care reforms and of models that were still in use).

c) Involved a substantial role of a registered nurse or nurse practitioner.

d) Contained detailed information on the description of the model and how the model was implemented.

e) Addressed discussion of barriers, implementation challenges and success factors or solutions.

All papers meeting the above criteria were included regardless of type or quality of paper.

Three junior research assistants (two were bilingual) extracted information from each paper. A senior research lead reviewed the extracted information and where there were questions, the report/paper was reviewed by the research lead. This process allowed for the inclusion of an extensive set of information sources. This iterative process provided the opportunity to group models of care as the literature was being reviewed, and to re-group several times as further information was gathered. One type of model that emerged, which was later combined with "interprofessional team," was the "self-management" model. Self-management models were seen as nested models within the interprofessional team model and were not viewed as independent or distinct models. (See Appendix B for the literature tables organized by type of models that emerged from the literature.)

3.4 CRITERIA FOR CASE STUDIES

The following criteria were used to identify five examples of models of care in primary healthcare and to develop the detailed case studies:

a) All case studies should be examples of models of care delivery currently in use in Canada.

b) Case studies should be geographically distributed, but not necessarily one per province or territory.

c) Each case study should reflect one of the main categories of models of care that have been identified in the literature/website review.

d) Case studies should represent different practice settings.

e) Case studies should represent different patient/client populations.

3.5 LIMITATIONS

Scoping reviews are meant to assess the broad scope or "lay of the land." As such, this review examined a range of papers with a range of study designs and reports generated by various organizations. However, the review is by no means exhaustive. The depth of examination of each model was constrained by available time and resources. Caution needs to be taken in making firm conclusions on the value of one model over another, as that was not the intent, nor were we able to identify rigorous studies comparing the models. We have also taken liberty to categorize the papers using loose definitions of the five models of care that emerged in the review and that are discussed in this paper.

4 RESULTS OF THE REVIEW

4.1 OVERVIEW

The World Health Organization defines a primary healthcare team as "a group of persons who share a common health goal and common objectives determined by community needs, to which the achievement of each member of the team contributes, in a co-ordinated manner, in accordance with his/her competence and skills and respecting the functions of others"[8]. The search for primary healthcare team models of care resulted in the identification of five broad categories of such models involving nurses. The categories are not meant to be a rigid taxonomy or classification, but rather, a loose organization of models that emerged from the review of the literature. Overview of the models are presented in Table 1 to highlight the overall distinctions of the models. Discussion of each model category follows the table.

Table 1: Service Delivery Models of Care in Primary Care

Model	Context	Intragroup processes	Scope of Practice	Effectiveness*
INTER-PROFESSIONAL TEAMS Various healthcare disciplines working together towards common goals to meet the needs of a patient population	Team members co-located at centres or clinics Model design is highly context dependent (local needs target patient population, availability of human resources)	Various designs of team collaboration that range from consultation to integrated practices Physicians generally leaders of the teams	Division of labour based on scopes of practice of team members	**Positive Findings** *Systematic Reviews:* Adams et al, 2007; Barrett et al, 2007; Craven et al, 2006; Suter et al, 2010; *RCTs:* Humbert et al, 2009; *Other Studies:* Lui et al, 2003; Schaeder et al., 2008; Russel et al, 2009; **Mixed Findings** *Systematic Reviews:* Zwarenstein et al., 2009 **No Impact** *RCTs*: Lin et al, 2006
NURSE-LED MODELS Formally structured with the focus on the nurse delivering holistic care	Often dependent on lack of access to physicians	Independent practice and collaboration with other healthcare providers Nurse has central role in governance and leadership	Nurses working to full scope of practice Model is highly dependent on the nurse's role *and capacity to take on expanded responsibilities	**Positive Findings** *Systematic Reviews:* Cooper et al., 2006; Glynn et al, 2010: Horrocks et al., 2002; Laurant et al., 2007, 2009; Lewis et al., 2009; Schadewaldt & Schultz, 2011 (no difference compared to convention model; *RCTs:* Chui et al., 2010; Given et al, 2010; Hebert et al, 2008; Raferty et al., 2005; Ryan et al., 2006; Smeulder et al, 2010; Van Zuelien et al., 2011 **Mixed Findings** *Systematic Reviews* **No Impact** *Systematic Reviews:* Cruickshank et al, 2008; *RCTs:* New et al, 2003

CASE MANAGEMENT An assignment of a set number of complex care patients to the nurse and to coordinate their care. Focus is on meeting organizational objectives for efficiency	Complexity of patient care, (for example, chronic diseases) Model design is highly dependent on patient care requirements	Nurse plays central role in coordinating team member requirements for the patients in the caseload Model design is highly dependent on size of team and the complexities of coordinating care activities	Potential to work to full scope of practice if there is a manageable caseload	**Positive Findings:** *Systematic Reviews:* Schroeder et al., 2008; Berra et al., 2011; Norris et al., 2002 **Mixed Findings** *Other Studies:* Taylor et al., 2005 **No Impact** *Other Studies:* Vam der Sluis et al., 2008
SHARED CARE	Co-location of two primary care providers	Highly collaborative requiring high trust and respect between team members. Model is highly dependent on how providers work out their shared arrangement	Working to full scope of practice	**Positive Findings:** *Systematic Reviews:* Kelly et al (2011); Research Power In., 2011 *Other Studies:* Griffiths et al, 2007 **Mixed:** *Other Studies:* Smith et al (2007); Eley et al (2008) **No Impact**

* References listed in Appendix B.

4.2 INTERPROFESSIONAL TEAM MODEL

Description of interprofessional team models

Interprofessional team models are teams comprising various healthcare disciplines working together towards common goals to meet the needs of a patient population. Team members divide the work based on the team members' education and experience[9]; they share information to support one another's work and coordinate processes and interventions to provide a number of different services and programs to their target population. Generally, there is an explicit or underlying value for non-hierarchical decision-making[10].

Such models of care vary based on the context, the intra-group processes, the nature of the tasks, and the intensity of collaboration that is engineered in the structure and process of the teams[11]. The intensity of collaboration ranges from consultative activities to integrative work practices[12].

The effectiveness of interprofessional teams is dependent on a number of factors, including the team members' knowledge of one another's roles; the scope of practice; mutual trust and respect amongst the team members; commitment in building relationships; willingness to cooperate and collaborate;[13-15] and the extent to which the team has organizational supports[16]. Incentives such as appropriate system-level policies/legislation[17], favourable compensation models[18], balance in workload[19], working arrangements[20] (for example, opportunities to communicate, have meaningful discussion, conduct joint work, and leverage information systems) and team characteristics,[21] such as team leadership and shared purpose, influence how team members collaborate to achieve positive outcomes.

At a practical level, interprofessional teams are involved in the assessment and planning of care, making independent and joint decisions about approaches to care, and providing direct services individually or jointly with other team members to meet the needs of the patient[22]. The team members meet informally, formally and virtually, and use various structures and tools to meet, communicate, coordinate and monitor care[23].

In advanced interprofessional teams, the patient and his or her significant others are central members of the team[24, 25]. Structures, processes and tools are established that empower the patient in optimal involvement (for example, the patient has access to his or her electronic health record). Patients and their caregivers are involved in regular team meetings, and patients are taught and supported to self-monitor and adjust their own treatment within given parameters.

Registered nurses, nurse practitioners, and in some instances licenced practical nurses are involved in generalist and/or specialized roles and often provide a pivotal role in a leadership, facilitative or a coordinating capacity. They also provide patient advocacy and direct service. More often than not, however, physicians play the leadership role in such models, particularly when the funding for primary care is tied with the physician reimbursement using fee-for-service or capitation models, in contrast to models where all team members are salaried[26].

Examples of interprofessional team models

The literature has many examples of team-based collaborative models of care. The following are a few examples of these models and the context in which they are applied. (See Appendix C and D for two detailed case studies of interprofessional team model of care.)

a) Family Health Teams (FHT) in Ontario[27]

b) Community Health Centres (CHC) – found across all provinces in Canada, including the earliest ones in Quebec known as communauté locale de soins communautaires, or CLSCs[28].

c) Integrated Health Teams – Katzie Integrated Health Team in British Columbia, led by the Katzie First Nation Health Promotion Team[29]; Sure Start Local Programs (SSLPs in United Kingdom)[30].

Effectiveness of interprofessional team models

Evidence is building on the positive outcomes associated with interprofessional team- based primary care models. (See Table 1.) However, identifying the effectiveness of specific aspects of team structures and behaviours in the context of primary care requires more study[31]. Challenges that have been identified from qualitative studies include communication and relationships between members, documentation systems and practices, knowledge of team members' scopes of practice, issues of team cohesion, referral mechanisms between team members, agreement of plans of care, and lack of a clear leader[32].

4.3 NURSE-LED MODEL

Description of nurse-led models

The emergence of nurse-led models of care is often associated with a chronic shortage of physicians and a lack of access to primary care. Nurse-led models of care are formally structured[33] and the delivery of care gives primacy to the nurse's role, where the nurse independently and collaboratively provides holistic care including assessment, planning, organizing, coordinating, care delivery/treatment, patient education and monitoring, and attention to social determinants of health. There are a number of features of nurse-led models that are different from conventional models[34]:

- They are independently managed by nurses while maintaining team-based collaboration.
- They are more holistic and are focused on prevention and education, in contrast to being treatment- or medicinal-focused (although nurse-led models also do these).
- Beyond the conventional interventions, nurse-led models may include psychosocial support to patients, outreach in the community, group-level activities and programs, coordination of activities, and a strong focus on health counselling, education and assisting patients with self-care management.
- Such models provide greater professional autonomy to nurses whereby nurses have their own patient case load. In some nurse-led models, nurses may make decisions related to patient admissions, referrals and discharge.

Examples of nurse-led models of care

There are a number of different nurse-led models of care delivery[35] including RN (registered nurse)-led general models, RN-led specialist models, NP (nurse practitioner)-led general models, and NP-led specialist models. The decision on whether to have an RN or an NP is associated with the patient care needs and scope of practice of the nurse. (See Table 2 and see Appendix E for detailed case study.)

Table 2: Nurse-Led Models of Care

Model	Examples
RN-Led Generalist Models of Care Delivery	Family practice clinics (Alsaffar, 2004) Nurse-led primary healthcare walk-in centres (Desborough et al, 2011).
RN-Led Specialist Models of Care Delivery	Nurse-led hepatitis C program (Butt, 2009) Nurse-run post-acute stroke clinic (Crowe, 2009) Nurse-led smoking cessation clinic (Thompson et al, 2007) Nurse-led rheumatology clinic (Arvidsson et al. 2006) Nurse-family partnership program (www.nurseamilypartnership.org) RN-led flexible sigmoidoscopy clinics for colorectal cancer screening (Dubrow et al, 2007).
NP-Led Generalist Models of Care Delivery	NP-led clinics in Ontario (http://www.health.gov.on.ca/transformation/np_clinics/np_mn.html), NP-led school based primary healthcare clinic for children and families (Clendon, 2001) NP-led multidisciplinary team to improve chronic illness (Watts et al, 2009).
NP-Led Specialist Models of Care Delivery	NP-led anticoagulant clinic (Connor, 2002) NP model of care for people with dementia (Ashcroft et al, 2010) NP services for patients with chronic kidney disease (Van Zulien et al, 2011).
Mixed RN, NP, generalist, and specialized	Comox Valley Nursing Centre in British Columbia (www.viha.ca/comox_valley_nursing_centre).

Effectiveness of nurse-led models

There is good evidence to support nurse-led primary care models. (See Table 1 for details.) Most research shows positive or similar outcomes to conventional care models. Having stakeholder buy-in and physician support are key factors of success.

4.4 CASE MANAGEMENT MODEL

Description of case management models

Case management models are most often embedded in multidisciplinary or interdisciplinary models and tend to focus on highly complex or high-resource groups of patients such as patients with chronic conditions[36]. The key feature of this model is the assignment of a defined number of patients to one provider (a case manager) who takes the lead in collaborating with team members to develop a comprehensive care plan, coordinating the activities to meet patient goals, and monitoring the achievement of patient objectives and system-level targets[37]. The focus of the model is often on system-level factors such as preventing readmission or decreasing wait times. Nurses are often in the formal role of a case manager, as they bring a broad set of knowledge and skills in clinical, interpersonal and problem-solving domains and help to improve interprofessional collaboration[38]. In doing so, case managers are often "navigating" the system, advocating for the patient and identifying and addressing gaps in the healthcare system.

Case management is differentiated from patient navigation models in that the focus is on coordination of the healthcare team and other system players, and on creating efficiencies. The key processes in case management are case-finding, assessment, planning, action and monitoring[39]. The monitoring of cases is often over a longer period of time compared to other models.

Examples of case management models

Schraeder et al.[40] describe a collaborative primary care nurse case management model located in Illinois, U.S. that is situated within a multi-specialty physician group practice using a multi-disciplinary team model. The focus of case management is on patients with chronic conditions. Similarly, other case management models that focus on chronic disease management and/or complex care include:

- Disease and care management[41]
- Guided care management[42]
- Supportive care clinic for cancer patients[43]
- Primary care case management for chronic care[44]

Case management models are widely used in the management and care of patients who are discharged from hospital to receive care in the home[45].

Effectiveness of case management models

Systematic reviews and studies of case management show a mixture of findings – some positive, some with mixed findings and some with no impact. (See Table 1.) It has been noted that it is difficult to isolate the impact of case management models, as they are often embedded or implemented with other models such as interprofessional team, nurse-led or patient navigation models[46].

4.5 PATIENT NAVIGATION MODEL

Description of patient navigation models

The patient navigation model is a relatively newer model of care in the healthcare sector, requiring a patient navigator who has a multifaceted role. Navigators can be nurses, social workers or lay persons. The navigators are patient advocates who help the patient navigate through the healthcare system by circumventing and/or removing barriers while coordinating activities to meet the patient's

needs[47]. Patient navigators tend to focus on the patient's experience, ensuring the patient receives timely services and ensuring that he or she does not fall through the cracks in the healthcare system[48]. Navigators who are nurses assess patients, address symptom management and "fast track" patients through the system depending on clinical status. Hence, they also play a triage function[49].

Patient navigation models, unlike case management models, do not focus largely on highly complex patient groups, nor are they all situated within a broader multi-disciplinary environment. However, various patient navigator roles include functions such as assessment, symptom management, patient education, and follow-up, which makes better use of the scope of practice of nurses[50].

Although the notion of supporting the patient to navigate the healthcare system is not new, the formalized role of patient navigator is a recent innovation. The term *patient navigation* is purported to appear in the health literature around 1995[51] and is sometimes referred to as "nurse navigator" or used interchangeably with "care coordinator"[52]. The literature has examples of patient navigators who are nurses, social workers, community health workers or lay persons, and whose role overlaps with those of case managers[53]. Research on patient navigation for patients with cancer, particularly in the diagnostic/work-up stage, appears to be advanced compared to navigation for patients in cancer treatment or other health conditions[54, 55].

The role of patient navigator aims to not only improve patient experience in the healthcare system, but also to decrease wait times for patient services; improve diagnostic resolution, timeliness in care and treatment adherence; improve the likelihood of follow-up; and improve clinical outcomes[56]. The approaches used by a patient navigator include assessing needs; developing relationships within the healthcare system in order to leverage this for the benefit of the patient; coordinating care aspects between healthcare providers and between providers and the patient/family; ensuring referrals do not fall through the cracks; reviewing diagnostic results and acting upon them in a timely manner; tracking wait times and timeliness to care; and identifying gaps in the system and thereby acting as a catalyst for change.

Gilbert et al.[57] built a case for nurses to take the role of patient navigator in the cancer care sector. The authors note that nurses have the knowledge and skills to support patient care and work in an integrated manner with clinicians while improving the patient's experience of the healthcare system.

Examples of patient navigation models

Although it is a relatively recent model of care, a variety of patient navigation models are found in the literature. (See Appendix F for a detailed case study of one such model.) Other examples of patient navigation models include:

a) Patient navigator to support patients with confirmed breast lesion in Nova Scotia[58].

b) Navigation role for chronic care in older adults[59].

Effectiveness of patient navigation models

There is some research to show the positive impact of patient navigation; however, the evidence is limited. (See details in Table 1.)

4.6 SHARED CARE MODEL

Description of shared care model

Shared care models are primarily models in which two healthcare providers (for example, a nurse and a physician, nurse and pharmacist, or nurse and community health worker) share or have joint responsibility for specific patient groups or programs. Other providers are involved but to a significantly lesser degree. Sharing or co-management of care requires clear roles and responsibilities, high levels of communication and collaboration, and a high degree of trust and mutual respect for each other's contribution to patient care[60].

This model is differentiated from the interprofessional team model in that shared care arrangements are established through formalized agreements and/or specific delineation of roles and responsibilities for the same group of patients, and are usually between two members. The healthcare providers may have independent practices or other groups of patients using different models of care while involved in co-management or shared care model for some of their patients[61].

The focus of shared care models is most often on managing a higher roster or panel of patients in an effective and timely manner while providing high-quality and consistent care[62]. Additionally, there is an underlying belief that the combination of skills and knowledge brought together by the providers in the shared care arrangement provides a greater value-added service to the patients, thereby improving the quality of care[63].

Although there are variations in shared care models, there are common features that have been noted[64]:

- Joint provision of clinical services by health providers, often located in the same setting.
- Shared responsibility for patient care by shared-care team members.
- Clear differentiation of roles among health providers, which is typically outlined in a shared-practice guideline or memorandum of understanding.
- Collaborative education that seeks to increase understanding among shared-care team members of each other's professional skills, knowledge and abilities.
- Development of a shared strategy for patient care that is based on explicated defined guidelines.

Examples of shared care models

Shared care models are often treated as interprofessional team models. However, as described above, this paper notes the key characteristics of the shared care model. (See Appendix G for detailed case study of one such model.) The following are examples of diverse shared care models:

a) Family Practice Nurse Initiative in Nova Scotia[65]

b) Nurse Practitioner/Family Physician Primary Care model in Interior British Columbia[66]

c) Nurse-led weekly clinic with general physician (GP) support occurring twice a year for patients with poor diabetic control in the United Kingdom[67]

d) Nurse/pharmacy-led capecitabine clinic for colorectal cancer[68]

Effectiveness of shared care models

There is limited research evidence on the effectiveness of shared care models in primary care. One systematic review that was found focused on shared care arrangements between primary and specialist shared care arrangements[69]. Qualitative findings identify that issues with the models were primarily related to role ambiguity and trust between providers[70]. (See Table 1.)

5.0 BARRIERS AND ENABLERS FOR SUCCESSFUL APPLICATION OF MODELS

An extensive inventory of barriers and enablers was identified from the literature (see Appendix H) and from analysis of the case studies. These are grouped in five categories: policies/system; appropriate model of care; individual/team; organization; and implementation. These have not been differentiated for the five models discussed in this paper, as there are significant commonalities.

Policies or system factors address the conditions that enable models of care to take root and be effectively implemented. The lack of such enablers creates challenges in the optimal use of the full scope of nurses. These factors include legislation, regulation, funding support, data availability, research, educational requirements, fair compensation including benefits, and liability protection. Policies in almost all funding models generate tensions between policy controls and practice efficiencies: for example, patients must be seen by a physician in fee-for-service models regardless of whether the patient needs the physician; and adequate throughput of patients should be ensured in salary models. Policy decision-makers' understanding and appreciation of these challenges and the impact of policy decisions appear to be ongoing challenges.

The **appropriate model of care** is highly context-dependent. Successful models reflect community needs and characteristics as well as priorities identified by community stakeholders. Flexibility in models is also important due to divergent needs of the community and the changing nature of these needs, requiring mechanisms to provide a varying intensity of programs and services. Models of care are dependent on the availability of appropriate health provider resources and supports to work to full scope of practice. Local adaptation of models of care, therefore, produces different models, each with its own set of challenges and successes. This creates difficulties in comparing the models' effectiveness.

Individual and team factors play an obvious and intricate role in the successful application of any of the models of care discussed in this paper. The effectiveness of teams is dependent on how well individuals embrace working in teams, perceive advantages and disadvantages, have the competencies and experience to be effective team members, and have the right supports and tools. Having mutual trust and respect and knowledge of one another's roles, the scope of practice, and how each member can bring value to patient care are cited frequently in the literature and by key informants.

Organization factors refer to organizational supports and tools that enable the successful implementation and ongoing operation of models of care and effective and efficient interprofessional collaboration. Examples of these supports include a clear business plan, a governance mechanism, work place policies, and integrated processes. Insufficient supports and tools can lead to inappropriate conclusions on whether a model is successful or not.

Implementation factors can also support or hinder the successful outcomes of any of the models of care. Inadequate attention to supporting human resources, from selection to training and mentorship, can result in failed models. The use of evidence-based practices in providing programs and services are interlinked with models of care, as is the effective support for team development. These inter-related components – model of care, evidence- based practices and team collaboration – have to work in concert to result in positive patient, provider and system-level outcomes.

6 RECOMMENDATIONS

The overall lessons derived in this paper are summarized in five key recommendations:

Recommendation 1: Study further the models of care identified in this scoping review.

As with any scoping review, the findings are a broad reflection of the subject matter. Each of the five models of care identified in this paper (interprofessional teams, nurse-led, case management, patient navigation and shared care) requires a detailed literature review, conceptual clarification and more rigorous understanding of how the models are experienced in the field. The development of case studies in this paper is a first step towards this exploration.

Recommendation 2: Be open to the plurality of primary healthcare models, at least in the short run. Supporting diverse models of care is a good thing.

Primary healthcare in Canada is undergoing reform and is experimenting with different models of care, team approaches and funding schemas, often within the same jurisdiction. The plurality of models will likely prevent the premature adherence to a single path of untested primary care model for the majority of the population.

Recommendation 3: Develop a pan-Canadian strategy to integrate registered nurses and nurse practitioners in primary care *models* of care.

Although models of care are context-dependent, there are a number of challenges that require stakeholders to come together to develop common solutions such as clarity in roles/scopes of practice, educational standards, supportive legislative frameworks, and public campaigns on the contribution nurses can make to primary care.

Recommendation 4: Promote the use of evidence-based implementation of models of care using the PEPPA framework (Participatory, Evidence-based, Patient-focused Process, for guiding the development, implementation, and evaluation of advanced nursing practice [PEPPA])[71].

Extensive research has been done to develop and test the framework in the context of implementing advanced nursing practice roles in the field[72]. The framework takes into account the barriers and enablers identified in this paper and provides a systematic process and set of tools. It is therefore important to leverage this framework as well as other tools developed by the pioneers of the various models.

Recommendation 5: Support nurses in their quest to implement innovative models of care in primary care.

Various forms of support are needed for nurses in the field, including strong nursing leadership; communities of practice to share and learn and avoid isolation; and educational opportunities to continue strengthening knowledge, skills and confidence to meet increasing healthcare challenges and be effective collaborators working in teams.

7 CONCLUSION

This paper aims to explore and explain the use of models of care delivery that enhance the role of nurses in primary healthcare and other non-acute care settings. The scoping review provides a preliminary focus of attention on five models of care: interprofessional teams, nurse-led models, case management, patient navigation, and shared care models. The case studies provide a detailed understanding of these models and greater insight into their emergence in the Canadian primary care system. An overview of factors that support or hinder the models of care has been outlined along with five broad recommendations.

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APPENDICES

APPENDIX A: SEARCH TERMS AND STRATEGY

The search terms were used in combination.

Population	Intervention	Comparison	Outcomes

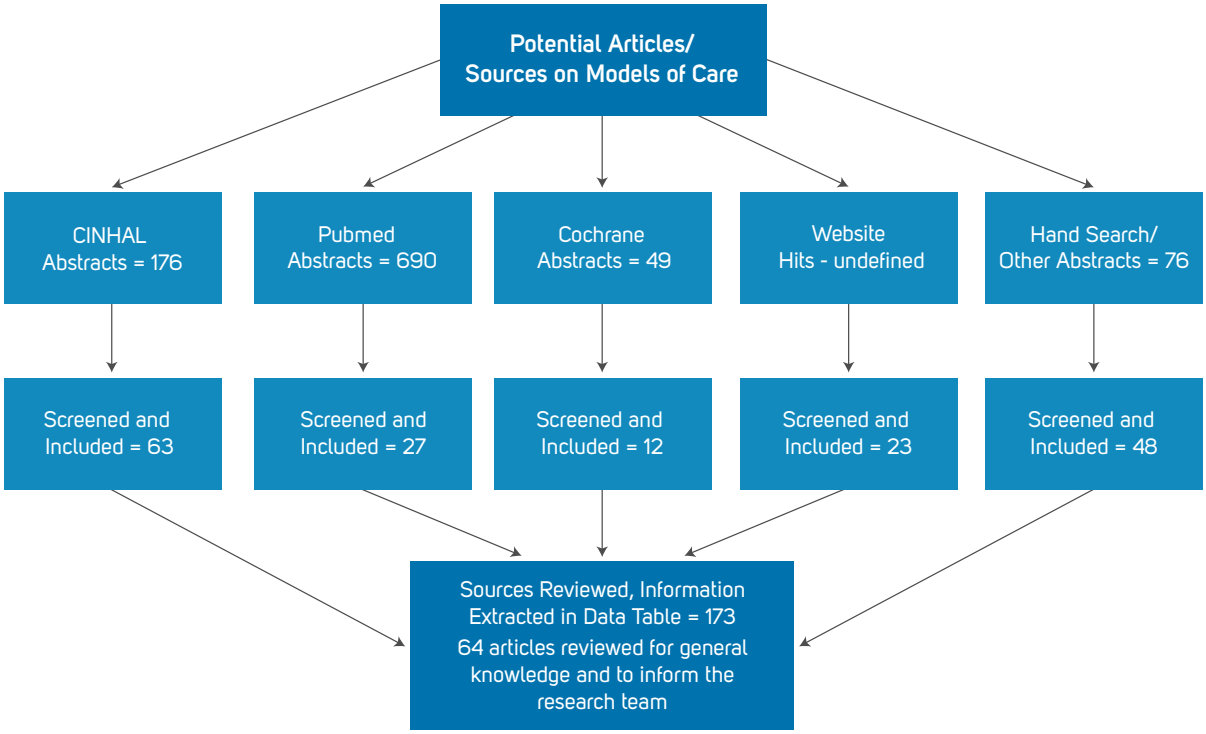
◥ Registered Nurses
◥ Nurse Practitioners
◥ Health Teams
◥ Practice teams
◥ Healthcare organizations
◥ Healthcare facilities
◥ Primary care
	◥ Interprofessional teams
	◥ Interprofessional collaboration
	◥ Collaboration
	◥ Teams
	◥ Team based care
	◥ Primary care
	◥ Primary healthcare
	◥ Family health teams
	◥ Healthcare teams
	◥ Chronic management teams
	◥ Nurse-led
		◥ Traditional teams
		◥ Non team based
			◥ Health services outcomes
			  ◥ Right person at the right time to provide care
			  ◥ Improve access to care
			  ◥ Cost effectiveness, savings
			◥ Team effectiveness outcomes
			  ◥ Communication
			  ◥ Coordination
			  ◥ Collaboration
			  ◥ Team member satisfaction
			◥ Patient outcomes – functional, disability, quality of life
			◥ Population health status
			◥ Optimized scope of practice

Limitations: English, French, 2001 onwards, optimize role of NPs, RNs, primary care (health promotion, prevention, chronic management, screening, non-acute care/hospital care but include outpatient clinics and long term care/nursing homes)			

Databases:

- CINHAL, PUBMED, Cochrane Database
- Hand search references in key articles

Literature/Information Retrieved



Health Star and Healthevidence.ca searches did not produce additional papers of value.

APPENDIX B: LITERATURE SUMMARY TABLE

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
			INTERPROFESSIONAL TEAM MODELS		
1	Adams, S.G., Smith, P.K., Allan, P.F., Anzueto, A., Pugh, J. A. & Cornell, J.E. (2007). Systematic Review of the Chronic Care Model in Chronic Obstructive Pulmonary Disease Prevention and Management. *Arch Intern Med, 167*, 551-561.	Systematic Review Effectiveness of the Chronic Care Model	GENERAL	**Interprofessional Team** Chronic Care Model (CCM) ◥ Chronic Care Model focuses on patient self-management (behavioural change and support), Delivery Systems Design (24/7 support), Decision Support, (referrals), Clinical Info System (registry, reminders) ◥ Model includes physicians, nurses, therapists, pharmacists	◥ Patients receiving CCM intervention had lower rates of hospitalizations, emergency, or unscheduled visits ◥ Length of hospital stays were also reduced
2	Arevian, M. (2005). The significance of a collaborative practice model in delivering care to chronically ill patients: A case study of managing diabetes mellitus in a primary health care center. *Journal of Interprofessional Care, 19*(5), 444 – 451.	Case Study Impact of collaborative practice on quality and cost-effective care for diabetic patients	LEBANON	**Interprofessional Team** Diabetes Care ◥ Nurse is the teacher and client is the learner in order to foster strong self-management mastery in the client ◥ Focus on defining problems, goal setting, planning and follow-ups	◥ Increase in continuity of care, improvements in glycemic controls, decreased costs
3	Baker, M.W. & Heitkemper, M.M. (2005). The roles of nurses on Interprofessional teams to combat elder mistreatment. *Nurse Outlook, 53*, 253-259.	Descriptive Study Roles of nurses on the IP teams on elder mistreatment	UNITED STATES	**Interprofessional Team** Geriatrics ◥ Nurses on Elder Management Teams aid with assessments/ screening, reporting, direct care, and complaint investigation	◥ Nurses on collaborative Elder Management Teams can help identify more cases of abuse since most go unreported

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
INTERPROFESSIONAL TEAM MODELS					
4	Baker, G.R., & Denis, J.L. (2011). A Comparative Study of Three Transformative Healthcare Systems: Canada Health Lessons for Canada. *Canada Health Services Research Foundation, Ottawa,* ON, 1-40. Available at: www.chsrf.ca.	Comparative Research Study Overview of 3 healthcare systems, lessons Canada can learn	CANADA - GENERAL	**Interprofessional Team** Primary Care (model from Alaska, Utah, and Sweden) ▸ Models demonstrate various principles such as patient driven care, team-based care, proactive health panels, and integrated behavioural health	▸ Models have shown improved patient engagement ▸ For this model to work, role expansion needs to occur; create greater local capacity through training and leadership ▸ Identify key target areas for improvement and prioritize ▸ Continue to develop an effective EMR (Electronic Medical Records) system
5	Barrett, J., Curran, V., Glynn, L., & Godwin, M. (2007). CHSRF Synthesis: Interprofessional Collaboration and Quality Primary Healthcare. *Canadian Health Services Research Foundation*, 1-54.	Systematic Review Exploring IP Models	GENERAL	**Interprofessional Team** Primary Care ▸ Family physician working in various partnerships with nurses, dietitians, pharmacists and community health systems ▸ 3 areas were reviewed: IP Collaboration and Health System Outcomes, Patient Outcomes, Provider Outcomes	Health System Outcomes: Better coordination of care, use of resources, broader range of services Patient Outcomes: Positive, better access to services, improve wait times, developed enhance self-care and health condition knowledge Provider Outcomes: Positive, health workers more satisfied working in an IP environment

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
INTERPROFESSIONAL TEAM MODELS					
6	Baxter, P., & Markle-Reid, M. (2009). An interprofessional team approach to fall prevention for older home care clients 'at risk' of falling: health care providers share their experiences. *International Journal of Integrated Care, 9*, 1-12.	Qualitative Study Describe the experience of 5 different healthcare professionals in a hospice centre	CANADA - GENERAL	**Interprofessional Team** Geriatric Care ◥ High-level collaboration, coordination, communication ◥ Team members share a common goal of finding solutions to complex patient issues ◥ Expose professional boundaries and stereotypes to develop mutual respect and trust ◥ Have a flexible environment, sharing information and decision-making	No specific clinical outcomes Factors to achieve an effective IP model for in-home care: Effective communication; Role Clarity, Increased Trust; Avoid working in silos; Time Management
7	Byrnes, V., O'Riordan, A., Schroder, C., Chapman, C., Medves, J., Paterson, M., & Grigg, R. (2012). South Eastern Interprofessional Collaborative Learning Environment (SEIPCLE): Nurturing Collaborative Practice. *Journal of Research in Interprofessional Practice and Education, 2*(2), 168-186.	Quasi-Controlled Exploratory Study	CANADA - ONTARIO	**Interprofessional Team** Primary Care ◥ Collaboration of 3 existing teams; acute, rehab, and mental health from 3 different sites to perform controls in a single site ◥ Intervention included online ◥ and workshop education, student placement and preceptorship which was integrated into practice ◥ Each team member recorded the amount of time they spent with each patient in each stage of admission and shared data to understand member progress and roles	◥ Overall quantitative data did not show statistically significant results but was positive trending – intervention sites showed statistical significance in comparison to control sites ◥ The project produced three educational modules, a guide for interprofessional student placements and three workshops ◥ Provided validation of the CPAT (Collaborative Practice Assessment Tool)
8	Cioffi, J., Wilkes, L., Cummings, J., Warne, B., & Harrison, K. (2010). Multidisciplinary teams caring for clients with chronic conditions: Experiences of community nurses and allied health professionals. *Contemporary Nurse, 36*(1-2), 61-70.	Qualitative Descriptive Study Assessing experiences of multidisciplinary team members in community chronic care teams	AUSTRALIA	**Interprofessional Team** Chronic Team ◥ At home approach,; Allied health professionals working together; nurses ensuring that patients received the care they needed in order to prolong or prevent hospitalization	◥ Collaboration issues in communication, cohesiveness and role clarity causing tension, delays in referrals

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
			INTERPROFESSIONAL TEAM MODELS		
9	Côté, G., Lauzon, C., & Kyd-Strickland, B. (2008). Environmental scan of Interprofessional collaboration practice initiatives. *Journal of Interprofessional Care, 25*(5), 449-460.	Environmental Scan Ottawa Hospital Model	CANADA - ONTARIO	**Interprofessional Team** Primary Care ◥ In 2008, the Ottawa Hospital launched its plan to integrate 80 teams over two years across 3 sites to fulfill the Ontario vision for integrating interprofessional care in all aspects of healthcare ◥ The Ottawa Hospital Interprofessional Model of Primary care (IPMPC) was designed to organize patient care between health professionals from different disciplines factoring in their various competencies to create the most effective collaborative patient centred practices	◥ Create a national trend of information sharing in order to improve and expand patient-centred care; more importance being placed on the value of communication ◥ Toolkits have been developed to guide others through the interprofessional collaboration process
10	Craven, M., & Bland, R. (2006). Better Practices in Collaborative Mental Health Care: An Analysis of the Evidence Base. *Canadian Journal of Psychology, 51*(1), 1-74.	Systematic Review Identify Better Practices in Collaborative Mental Health	GENERAL	**Interprofessional Team** (GP & Nurse, Cliniciens, Pharmacists, Psychotherapists, etc.) Primary Care – Mental Health Roles of the Nurse ◥ Attend educational interventions ◥ Structure assessments at various intervals ◥ Follow-up calls, emotional support ◥ Formulate a treatment plan and drug counselling Factors for success: build on pre-existing relationships, use of evidence based guidelines, supportive service structure	◥ Enhanced patient education ◥ IP work had a positive effect on depression care ◥ More consumer choice about treatment modality

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
INTERPROFESSIONAL TEAM MODELS					
11	Davis, P., Clackson, J., Henry, C., Bobyn, J., & Suveges, L. (2008). Interprofessional continuing health education for diabetic patients in an urban underserved community. *Journal of Interprofessional Care, 22*(1), 51-60.	Pilot Study Evaluation Findings Learning needs of health professionals working with underserved communities	CANADA - SASKATCHEWAN	**Interprofessional Team** ICEC ^4 Diabetes Care ◥ This IP team includes educators, nurses, doctors, physical therapists, pharmacists, nutritionists, kinesiologists, and dentists ◥ Serves 2 target audiences; urban underserved community, and health professionals	◥ No clinical outcomes ◥ For this model to work, team sizes must be realistic, and although team leaders are essential no one person is in charge of taking all the leads ◥ Several educations models were developed; Interaction with the Patient and his/her caregiver; Interaction with community and its resources; family conference
12	Demiris, G., Washington, K., Oliver, D.P., & Wittenberg-Lyles, E. (2008). A study of information flow in hospice interdisciplinary team meetings. *Journal of Interprofessional Care, 22*(6), 621-629.	Exploratory Study Determine the flow of information in hospice care	UNITED STATES	**Interprofessional Team** Hospice Care ◥ Interdisciplinary team includes physician, nurse, social worker, counsellor ◥ Team works on care plan, shares goals and responsibilities	◥ Defined leader needs to be identified to address/ resolve issues ◥ To improve patient/caregiver satisfaction, patients/families should be included in progress meetings

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			INTERPROFESSIONAL TEAM MODELS		
13	DiCenso, A., Bourgeault, I., Abelson, J., Martin-Misener, R., Kaasalainen, S., Carter, N., & Harbman, P. (2010). Utilization of Nurse Practitioners to Increase patient Access to Primary Healthcare in Canada: Thinking Outside the Box. *Nursing Leadership, 23,* 239-258.	Scoping Review Integration of NP	GENERAL	**Interprofessional Teams** ◥ Two models: B.C. – integration of NPs in fee-for-service family practice clinics; Ontario – NP-led clinics ◥ Discussion of factors that supported success ◥ B.C. – clear process laid out by Regional Health Authority for role introduction, evaluation and follow- through; supportive policies, infrastructure, practice environment; promote team functioning; mutual respect; open and regular communication; ongoing clarification of roles ◥ Challenges for sustainability – hierarchy – physician on top; physicians worried about workload and gaps in their own knowledge; concerns of NP education; concerns for their own status ◥ Involve all physicians at clinic in shared leadership instead of just one as a lead physician; involve other providers/staff to understand NP role ◥ Ontario – facilitators – large number of unattached patients; shortage of physicians, availability of NPs, local media coverage, good working relationships with consulting physicians, high patient satisfaction, NP-led governance structure (NP as clinic director – understand the scope) ◥ Challenges – highly complex needs of patients; lengthy visits with patients; frequent consultations with physicians; could not meet first year targets due to lengthy visits; opposition by organized medicine – concerns that NPs are independently practicing (issue may be related to title NP-led)	◥ High provider and patient satisfaction ◥ Created greater access to primary care

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INTERPROFESSIONAL TEAM MODELS					
14	Dufour, S.P., & Deborah-Lucy, S. (2010). Situating Primary Healthcare within the International Classification of Functioning, Disability, and Health: Enabling the Canadian Health Team Initiative. *Journal of Interprofessional Care, 24*(6), 666-677.	Literature Review Comparison of Family Health Teams (FHT) in Ontario to the WHO classification	GENERAL	**Interprofessional Team** Primary Care ▪ The FHT is supposed to address local needs and provide comprehensive care ▪ This includes a telephone health advisory service, an expanded hours practice, specialized outpatient services, health promotion, chronic disease management, patient-centred care ▪ Guiding principles of the model include flexibility, choice, local integration, transparency, consultation, and fostering community partnerships	▪ Discussion does not indicate whether the model has been implemented or not ▪ In order to achieve optimal outcomes the following factors need to be considered: (1) Assessment of community; (2) Selecting the most appropriate healthcare professionals; (3) The transformation process from group to collaborative team practice needs to take place; (4) Legislation needs to be modified and appropriate funding needs to be put in place
15	Gaboury, I., Lapierre, L.M., Boon, H. & Moher, D. (2011). Interprofessional collaboration within integrative healthcare clinics through the lens of the relationship –centered care model. *Journal of Interprofessional Care, 25*, 124-130.	Exploratory Study Surveys with practitioners at the clinics	CANADA - ALBERTA	**Interprofessional Team** Integrated Healthcare Clinics Primary Care ▪ Practitioners working together in clinic settings in varying compositions and sizes. Authors conclude the need for team members to understand the benefits of collaboration skills.	▪ Practitioner behaviours and skills associated with job satisfaction

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			INTERPROFESSIONAL TEAM MODELS		
16	Gagliardi, A.R., Dobrow, M. J., & Wright, F.C. (2011). How can we improve cancer care? A review of Interprofessional collaboration models and their use in clinical management. *Journal of Surgical Oncology, 20*(3), 146-154.	Literature Review Conceptual models of collaboration among different professions in different settings; focus on clinical management of cancer patients	GENERAL	**Interprofessional Team** Cancer Care – Oncology ◥ All models of teamwork and collaboration that were described involved two or more professionals that share patient goals, fostering continuous interaction ◥ Since cancer patients require multiple health professionals, collaborative management and systematic planning will improve patient care	◥ Patients will benefit from better planned and enhanced collaborative care and understanding between health professionals
17	Goldman, J., Meuser, J., Rogers, J, Lawrie, L., & Reeves, S. (2010). Interprofessional collaboration in family health teams. *Canadian Family Physician, 56*, 368-374.	Qualitative Case Study Examining IPC and its benefits	CANADA - ONTARIO	**Interprofessional Team** Family Health Teams Primary Care ◥ Gaining insight of FHT members and their experiences in their roles ◥ Family health teams generally consisted of a doctor, nurse or nurse practitioner, dietitian, social worker, pharmacist, and others	◥ Patients are receiving better quality of care but there is still confusion about roles, need for more team leaders, and barriers due to geography and lack of follow-ups between professionals involved, not patients ◥ Suggestions to improve FHTs include more interprofessional meetings, increase in EMR use, more training and rethinking traditional scope of roles

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			INTERPROFESSIONAL TEAM MODELS		
18	Haire, B. (2010). Interprofessional Care: A model of collaborative practice. CANADA, Prince Edward Island.	Report Evaluation Framework to evaluate IPC	CANADA - PRINCE EDWARD ISLAND	**Interprofessional Team** Primary Care ◥ Focus on education and training to prepare future healthcare workers to work in IP settings ◥ Share responsibilities, accountability and develop a framework to broaden the scope of work ◥ Promote cultural change to aid workers in adapting new procedures, practices and expectations	◥ For this IP system to work, patients must be willing to adjust their expectations of the healthcare system and responsibility of their own health and wellness
19	Hasselback, P., Saunders, D., Dastmalchian, A., Alibhai, A., Boudreau, R., Chreim, S., & D`Agnone, K. (2003). The Taber Integrated Primary Care Project: Turning Vision into Reality. *Canadian Health Services research Foundation,* 1-29, Retrieved from: www.chrsf.ca.	Pilot Evaluation	CANADA RURAL ALBERTA	**Interprofessional Team** Rural, small town ◥ Co-location of providers ◥ Alternate payment system – ensure no financial disincentive	◥ Improved services ◥ Improved satisfaction of recipients

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
INTERPROFESSIONAL TEAM MODELS					
20	Hillier, S.L. (2010). A Systematic Review of Collaborative Models for Health and Education Professionals Working in School Settings and Implications for Training. *Education for Health, 23*(3).	Systematic Review What are the best models to support collaboration between education and health staff	GENERAL	**Interprofessional Teams** Healthcare School Settings ◥ Multidisciplinary: Team members work in isolation but contribute to multidisciplinary meetings and planning ◥ Case Management: Central person taking the lead on managing a specific case ◥ Consultation: Consultant brings expertise and works with the client through a mediator (professional working directly with the client) ◥ Collaboration: At least 2 individuals working together towards a common goal ◥ Teaming: Organized group of personnel, each trained in a different professional discipline; cooperative problem-solving ◥ Interactive teaming: A fusion of consultation and collaboration	◥ Model of service shifted from "fixing" the problem to greater understanding; focus on joint decision- making and sharing of responsibility ◥ For school children, a collaborative approach from healthcare professionals and educators fosters a more holistic environment, which is more beneficial and positive for them ◥ Healthcare providers and educators need training and supports in interprofessional collaboration

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			INTERPROFESSIONAL TEAM MODELS		
21	Howard, M. (2011). Self-reported teamwork in family health team practices in Ontario. *Canadian Family Physician, 57*, 185-91.	Cross Sectional Study Survey done on team climate measures to determine the functioning of a FHT	CANADA - ONTARIO	**Interprofessional Team** Primary Care ◥ Family Health Teams consist of allied healthcare professionals in primary care practices with the aim to achieve higher quality of care, practices, and accessibility ◥ Can be composed of a group of professionals at a single clinic or between multiple offices that share programs and EMRs ◥ Usually initiated and governed by physicians	◥ FHTs show positive trends where there is strong leadership, the sharing of EMRs and development of culture among staff
22	Humbert, J., Legault, F., Dahrouge, S., Halabisky, B., Boyce, G., & Hogg, W. (2009). Integration of nurse practitioners into a family health network. *Canadian Nurse, 103*(9), 30-34.	Randomized Controlled Trials Benefits of NPs in FHTs to manage at-risk , at-home patients with chronic disabilities	CANADA - ONTARIO	**Interprofessional Team** Anticipatory and Preventive Chronic Care ◥ Eighteen-month study integrating three NPs in FHTs to manage at-home and at-risk patients with chronic disabilities ◥ NP would visit the patient and create a care plan, verify care plan with the physician, and discuss medications with the pharmacist ◥ NP also provided external links for the patient to access community resources ◥ NP solely responsible for chronic illnesses; acute illnesses were the responsibility of the physician or ER ◥ NP used a comprehensive health assessment to guide the care plan, which was accessible for other team members via EMR	◥ Patients were very satisfied with the level of care they were provided from the NPs ◥ Physicians displayed confidence and trust in the level of care the NPs were providing

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			INTERPROFESSIONAL TEAM MODELS		
23	Huron Perth Healthcare Alliance. (2010). Interprofessional Practice Model. Institute of Medicine. (2010). The future of nursing: Leading change, advancing health. Washington, DC: The National Academies Press (prepublication copy). Retrieved from: http://www.nap.edu/catalog/12956.html.	Overview of the Huron Perth Healthcare Alliance Interprofessional Practice Model	CANADA - ONTARIO	**Interprofessional Team** Family-Patient Focused Care ◥ Provide integrated assessments and care plans for the patient based on evidence-informed practice; RNs and RPNs working in collaboration ◥ Mutual understanding for each team member's role; RN deals with complex clients, RPN handles less-risk clients ◥ Support professional development of each team member; planning and implementing collaborative strategies such as participatory leadership	◥ Improve patient safety, quality of care, satisfaction of patients and caregivers through accountability, partnership, and equity of team members
24	Lacopino, A.M. (2010). Models for Interprofessional Practice: Innovative Collaboration Between Nursing and Dentistry. *Journal of the Canadian Dental Association, 76*(16).	Program Overview Discussion on collaboration between NPs and Dental Teams to improve and promote oral awareness	CANADA - MANITOBA	**Interprofessional Team** Nursing and Dentistry ◥ Collaborative educational exchange; School of Nursing merging with the College of Dentistry ◥ Nurses teaching about their practice, the need for referrals and awareness of patient health risk profiles; dentists providing teaching on oral health screening and importance ◥ Examining how certain diseases can be co-managed via nurse and dentist screening	◥ Patients understanding the importance of seeking dental services as well as primary care services improved; patients were very open and accepting of oral health check-ups and dental referrals ◥ Demonstrated that nurses can improve access to oral health and also promote disease prevention by working alongside dental teams and being a part of the first-point of contact with clients

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INTERPROFESSIONAL TEAM MODELS					
25	Legare, F., Pouliott, S., Stacey, D., Desrochers, S., Kryworuchko, J., Dunn, S., & Elwyn, G. (2011). Interprofessinalism and shared decision-making in primary care: a stepwise approach towards a new model. *Journal of Interprofessional Care, 25*, 18-25.	Conceptual Paper Achieving a consensus on an IP Shared Decision Making Model	CANADA - GENERAL	**Interprofessional Team** Primary Care ◥ Individual Level: The patient can make a value-based informed decision with a team of healthcare professionals ◥ Healthcare Meso Level: Designing organizational routines and having a decision coach ◥ Healthcare Macro Level: Understanding the influence of system-level factors; health policies; professional organizations; social context	◥ No specific clinical outcomes ◥ Validate the model amongst various stakeholders; patients, managers, policy makers; offer IP education; identify factors that could affect the model's implementation
26	Lin, E.H.B., Katon, W., Rutter, C., Simon, G.E., Lundman, E.J., Von-Korff, M., & Young, B. (2006). Effects of Enhanced Depression on Diabetes Self-Care. *Annals of Family Medicine, 4*(1), 46-53.	Randomized Controlled Trial (RCT) Examining effects of depression interventions on self-managed depressed diabetic patients	UNITED STATES	**Interprofessional Team** Diabetes ◥ Randomize Controlled Trial (RCT) included 329 patients across 9 Primary Care Clinics ◥ Patients in the intervention group were receiving pharmacotherapy and problem-solving support; every few months (3,6, 12) patients' summaries of diabetes self-care activities were looked at, along with prescription adherence and intake	◥ Enhanced depression care and outcomes were not associated with improved diabetes self-care behaviors; no significant changes in nutrition, increased physical activity, or smoking cessation; minor changes in BMI for some patients; no differences in medical adherence

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INTERPROFESSIONAL TEAM MODELS					
27	Liu, C.F., Hedrick, S.C., Chaney, E.F., Heagerty, P., Felker, B., & Hasenberg, N. (2003). Cost-Effectiveness of Collaborative Care for Depression in a Primary Care Veteran Population. *Psychiatric services. 54*(5), 698-704.	Randomized Controlled Trial Cost-effectiveness of a collaborative care intervention for depression	UNITED STATES	**Interprofessional Team** Primary Care – Mental Health ◥ Mental Health Team (MHT) provides treatment plans, telephone follow-ups, treatment adherence, results, modifications to care plan ◥ Focus on delivering evidence-based treatments, better communication and coordination of care	◥ MHTs in primary care enable more patients with mental illness and depression to get screened and care ◥ Increased cost and effectiveness of care ◥ Patients in the collaborative care model with the MHT received prescriptions for anti-depressants and were treated for depression ◥ Patients experienced 14.6 additional depression-free days over the nine-month study, resulting in cost savings
28	Ludwig, K. (2007). Patients First Project: Final Report. *Interprofessional Network of BC*. British Columbia, Canada.	Final Report How to improve the quality of care for First Nation communities in northern BC	CANADA - BRITISH COLUMBIA	**Interprofessional Team** Aboriginal HealthCare ◥ Evaluation of current interprofessional teams and experience with First Nation communities ◥ Education and training on interprofessional knowledge and skills for healthcare practitioners ◥ Presentations, educational sessions, and conferences were organized to discuss findings of the project	◥ First Nations groups still apprehensive of outsiders ◥ More integration of education, practice, and policy; sustained by the community ◥ Establish stronger connections between healthcare providers in the community and those intending to work with the community, i.e. "unity learning."

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
INTERPROFESSIONAL TEAM MODELS					
29	MacAdam, M. (2008). Frameworks of Integrated Care for the Elderly: A Systematic Review. *Canadian Policy Research Networks*, 1-35.	Systematic Review How to redirect care from institutionalized services and focus on case management	GENERAL	**Interprofessional Teams** Review of Integrated Care Models; Wagner's CCM (Chronic Care Model); Case Management Models: PACE Model, SIPA, PRISMA) PACE (Program, All-Inclusive Care for the Elderly): Joint revenues, case management, multidisciplinary team, service delivery focus; prevention focus, rehabilitation and supportive care SIPA (System of Integrated Care for Older Persons): Control of joint funding, case management with multidisciplinary team, use of clinical protocols, intensive home care, 24-hour on-call availability, rapid team mobilization) PISMA (Inter- and intra-organizational coordination, single point of entry, clinical management, service coordination via case team managers who work with providers, common assessment instrument, clinical chart, service plan, budgeting of services integrated information system Success factors: strong physician involvement, common assessment and care planning tools, integrated data systems; umbrella organizational structure, multidisciplinary case management, organized network of providers, financial incentives	Various: Depending on which type of integrated system was used ◥ PACE: Reduced hospital visits, lower mortality, improved quality of life and health status, no strong evidence of cost savings ◥ SIPA: Increase in client satisfaction, no increase in caregiver burden, no overall cost savings but cost- effective ◥ PRISMA: Promising results, lack of outcome measures

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			INTERPROFESSIONAL TEAM MODELS		
30	Malin, N., & Morrow, G. (2007). Models of interprofessional working within a Sure Start "Trailblazer" Programme. *Journal of Interprofessional Care, 21*(4), 445-457.	Qualitative Study (Single Case Study Design) Describing IP work in the "trailblazer" program	UNITED KINGDOM	**Interprofessional Team** Child Care Early Support Close gap in outcomes between children living in poverty and wider child population ◥ Sure Start local programs provide outreach, home visiting, family support, support for good quality play, learning, childcare experiences, primary and community healthcare, advice about child and family health and development and support for people with special needs (including help in accessing specialized services)	◥ Program improves social and emotional development, health, children's ability to learn, strengthens families/ communities
31	Manns, B.J., Tonelli, M., Zhang, J., Campbell, D.J.T., Johnson, J., & Sargious, P. (2011). The impact of primary care networks on the care and outcomes of patients with diabetes. Report to Alberta Health and Wellness and Alberta Health Services. Retrieved from: Interdisciplinary Chronic Disease Collaboration (www.ICDC.ca).	Cohort Study Analysis of state of primary care networks in Alberta using a cohort study of diabetic patients (prevalent vs. incident diabetes)	CANADA - ALBERTA	**Interprofessional Team** Primary Care ◥ Primary Care Networks (PCN) – 38 as of October 2010. Funding could be used to hire nurses. Some PCNs offered chronic disease management to some of their patients while others offered to all. Strategies used by PCNs included: use of EMR, patient reminders, clinical reminders, audit and feedback, facilitated relay of patient data, clinician education, patient education, promotion of self-management, team changes, case management. Most common strategies were team changes and patient education. Non-physicians prescribing medications in half of PCNs.	◥ Better glycemic control, less ER visits and hospitalization among diabetic patients

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			INTERPROFESSIONAL TEAM MODELS		
32	Martin-Misener, R., Wamboldt, B.D., Cain, E., & Girouard, M. (2009). Cost effectiveness and outcomes of a nurse practitioner-paramedic-family physician model of care: The Long and Brier Islands study. *Primary Healthcare Research and Development, 10*, 14-25.	Longitudinal Study	CANADA - NOVA SCOTIA	**Interprofessional Team** Rural Emergency Care ◥ Onsite NP and paramedic; off-site, physician model	◥ Decreased costs (mostly from decreased travel) ◥ Increased satisfaction ◥ Increased access ◥ Increased effective collaboration
33	Martin-Misener, R., McNab, J., Sketris, I.S., & Edwards, L. (2004). Collaborative practice in health systems change: the Nova Scotia experience with the strengthening primary care initiative. *Nursing Leadership, 17*(2), 33-46.	Perspective Paper Authors provide their perspectives on how to improve healthcare using the Strengthening Primary Care Initiative (SPCI)	CANADA - NOVA SCOTIA	**Interprofessional Team** Primary Care ◥ Focus of the team was on how to introduce collaborative practice between primary healthcare nurse practitioners and family physicians ◥ Aim is for the NP to work alongside the FP using methods other than FSS, and incorporating online medical patient records ◥ Goals were to improve the response to the community; improve access to care by promoting illness prevention, accountability and collaboration	◥ Provide clear guidelines of responsibility; ensuring that pharmacists are aware of the new nurse prescriptive authority ◥ Ensure the dissolution of hierarchies to promote collaboration between FPs and NPs ◥ Address issues of malpractice and liability ◥ Treating ambulatory care-sensitive conditions in a more cohesive way
34	McNeal, G. (2008). UMDNJ School of Nursing Mobile Healthcare Project: A Component of the New Jersey Children's Health Project. *ABNF Journal, 19*(4), 121-128.	Case Study Examples of nurse-managed health centres	UNITED STATES	**Interprofessional Team** Ambulatory Care ◥ Staff included medical director, paediatrician, and nursing assistant ◥ Nursing assistant would help with screenings, nutrition assessments and immunizations	◥ Treating ambulatory care-sensitive conditions in a more cohesive way

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			INTERPROFESSIONAL TEAM MODELS		
35	Mills, J.E., Francis, K., Birks, M., Coyle, M., Henderson, S. & Jones, J. (2010). Registered nurses as members of interprofessional primary health care teams in remote or isolated areas of Queensland: Collaboration, communication and partnerships in practice. *Journal of Interprofessional Care, 24*(5), 587–596.	Commissioned Multi-Case Research Project Understanding the role of nurses in remote settings	AUSTRALIA	**Interprofessional Team** Primary Care – Remote Areas ◥ Collaborative decision-making including case conferencing ◥ Enhancing exchange of information ◥ Fostering stronger relationships	◥ No clinical outcomes ◥ Research showed that nurses and indigenous workers frequently misunderstand one another, so collaboration is essential; establishing partnerships and high levels of communication will improve health services and care
36	Minore, B. & Bone, M. (2002). Realizing potential: improving interdisciplinary professional-paraprofessional health care teams in Canada's northern aboriginal communities through education. *Journal of Interprofessional Care, 16*(2), 139-147.	Opinion Paper Enhancing health human resources in rural areas with the Health Human Resource Model	CANADA - ONTARIO	**Interprofessional Team** Health Human Resource Model ◥ This model consists of mental health workers, community health workers, and alcohol and addiction program workers working alongside primary care nurses ◥ This model was designed to help fill in gaps in rural and remote areas where recruitment of health professionals is difficult	◥ No clinical outcomes ◥ Model will work effectively if individuals involved receive additional instruction, (clinical, interprofessional, cultural, communicational) to optimize the health human resources model in order to meet the needs of underserved clients
37	Nicholas, D.B. (2010). Examining organizational context and a developmental framework in advancing interprofessional collaboration: A case study. *Journal of Interprofessional Care, 24*(3), 319–322.	Case Study Examining interprofessional collaboration at Toronto's Hospital for Sick Kids	CANADA - ONTARIO	**Interprofessional Team** Sick Kids Model ◥ The core of this model is centred around family-centred care and the inclusion of a broad spectrum of stakeholders	◥ No clinical outcome ◥ Model can be advanced through a multi-layer approach, and family inclusion has been a t op approach ◥ The "family-centred care advisory council" has been an important component of IP advancement including planning, operations, and evaluation

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INTERPROFESSIONAL TEAM MODELS					
38	Northwest Territories Health and Social Services. (2004). Integrated Service Delivery Model for the NWT Health and Social Services System: A Detailed Description. *Primary Healthcare Transition Fund: Health Canada*, 1-168.	Descriptive Analysis Overview of the Integrated Service Delivery Model Strategy for Northwest Territories	CANADA - NWT	**Interprofessional Team** Primary Care ▪ A health and social services organization with a vertical and horizontal approach that is seamless and comprehensive, with a strong client-centred focus ▪ Aim is to provide transparent, competent, and sustainable care with quality assurance and continuity, with room for on-going evaluations	▪ The success of this model depends largely on the ability to recruit, retain, and retrain staff when necessary ▪ Ensuring that collaboration is taking place at a regional and territorial level ▪ Creating a paradigm shift that promotes a wellness model over an illness model, easing the burden on the healthcare system
39	O'Brien, J.L. (2009). A phenomenological perspective on advanced practice nurse–physician collaboration within an interdisciplinary healthcare team. *Journal of the American Academy of Nurse Practitioners, 21*, 444–453.	Phenomenological Perspective Experiences of Advanced Practice Nurses and Physicians in a nursing home	UNITED STATES	**Interprofessional Team** Focus on APN and physician collaboration in multisite nursing home practice ▪ Improving the communication, accommodation, understanding information and knowledge-exchange between physicians and advanced practice nurses	▪ Nurse-physician relationships improved in settings where teamwork is vital: operating rooms, intensive care units ▪ Focus on improving physician's understanding of the NP role, scope of practice to enhance trust/respect
40	Odegard, A., Hagtvet,K.A., & Bjorkly, S. (2008). Applying aspects of generalizability theory in preliminary validation of the Multifacet Interprofessional Collaboration Model (PINCOM). *International Journal of Interprofessional Care, 8*(17), 1568-4156.	Empirical Assessment Assessment of the IPC model with the Generalizability Theory (GT)	NORWAY	**Interprofessional Team** Children and youth in mental health Does not provide much on the models ▪ Study illustrates that in contrast to test construction within the classical test theory framework, GT gives new possibilities for evaluating test scores ▪ GT highlights both validity and reliability issues, important in measuring of IPC	▪ IPC measurement still in early phases of development ▪ Need for clearer definitions

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			INTERPROFESSIONAL TEAM MODELS		
41	Pauzé E., Gagné, M.A., & Pautler, K. (2005). Collaborative mental health care in primary health care: A review of Canadian initiatives. *Volume I: Analysis of Initiatives – Canadian Collaborative Mental Health Initiative;* 1-102. Retrieved from: www.ccmhi.ca.	Review Key themes/trends in collaborative mental health	CANADA - GENERAL	**Interprofessional Team** Primary Care – Mental Health Three approaches with physicians, nurses, psychiatrists 1. Direct: mental health specialists offer their services 2. Indirect approach: primary healthcare provider delivering mental health services with the consultative support of a mental health specialist 3. Combination of direct/indirect	◥ No specific clinical outcomes ◥ A combined approach to mental health is preferred; consumers should be involved in all aspects of their care, their knowledge and expertise should not be undervalued when developing, implementing, and evaluating collaborative activities
42	Petri, L. (2010). Concept Analysis of Interdisciplinary Collaboration. *Nursing Forum, 45*(2), 72-81.	Concept Analysis What is the meaning of interprofessional collaboration within the healthcare context	UNITED STATES	**Interprofessional Team** *No specific model is examined in this study ◥ Traditionally, IPC is described as a problem-focused process, sharing, and working together ◥ Interprofessional education, role awareness, interpersonal relationship skills, deliberate action, and support should be present for IPC to be beneficial for the patient, organization, healthcare provider	More comprehensive definition of IPC: process by healthcare professionals with shared objectives, decision-making, responsibility, and power working together to solve patient care problems; best attained through an interprofessional education that promotes an atmosphere of mutual trust and respect, open communication, awareness, acceptance of roles, skills, and responsibilities of the participating disciplines (pg.80)

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			INTERPROFESSIONAL TEAM MODELS		
43	Pittam, G., Secker, J., & Ford, F. (2010). The role of interprofessional working in the Pathways to Work Condition Management Programmes. *Journal of Interprofessional Care, 24*(6), 699–709.	Pilot Study including qualitative evaluations Contributing to a realistic evaluation of the Condition Management Program (CMP) implemented in 7 U.K. pilot sites	UNITED KINGDOM	**Interprofessional Team** Health and Employment Care ◥ Condition Management Programs: focus on pain management, promotion of exercise, healthy lifestyles, stress management, confidence-building, anxiety, depression ◥ Focus on developing personal working relationships, developing levels of trust with patients	◥ Teams members recognized that their contribution was part of a larger process ◥ Allowed patients to take the lead in their care
44	Pomey, M.P., Martin, E., & Forest, P.G. (2009). Quebec`s Family Medicine Groups: Innovation and Compromise in the Reform of Front-Line Care. *Canadian Political Science Review, 3*(4), 31-46.	Discussion Paper	CANADA - QUEBEC	**Interprofessional Team** Family Medicine Group ◥ Groups of 6-12 doctors who work with other providers; have registered patients; provide comprehensive primary care services – continuity of care – coordination of services with other system providers; accessible for after-hours needs; also reasonable time to get appointment ◥ Service agreements with CSLC ◥ Agree to remuneration schema	◥ Not applicable

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			INTERPROFESSIONAL TEAM MODELS		
45	Ragaz, N., Berk, A., Ford, D., & Morgan, M. (2010). Strategies for family health team leadership: lessons learned by successful teams. *Healthcare Quarterly, 13*(3), 39-43.	Descriptive Case Studies of five FHTs (Family Health Teams)	CANADA - ONTARIO	**Interprofessional Team** Hospice Care ◥ This article reviewed 5 FHTs in 5 different locations; included a collaboration of nurses, nurse clinicians, doctors, dietitians, social workers, health promoters, pharmacists, and CCAC case managers depending on the location ◥ This model focused on the education of team members with role clarification, understanding the value of the RN, and aligning the FHT with the Ministry of Health Long-Term Care Plan	◥ Patients will benefit from having the appropriate referrals take place in one location; having specialists conduct ongoing evaluations, sharing accomplishments, adapting to new and unexpected issues, data-sharing, and open communication ◥ The use of EMRs was evaluated and deemed critical to facilitate and provide better care to patients
46	Reeves, S., Zwarenstein, M., Goldman, J., Barr, H., Freeth, D., Hammick, M., & Koppel, I. (2009). Interprofessional education: effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews, 1*(CD002213), DOI:10.1002/14651858. CD00 2213.pub2.	Systematic Review Improving interprofessional collaboration and patient care through interprofessional education	GENERAL	**Interprofessional Team** *Assessment, no specific model(s) outlined ◥ Assessing different randomized control trials and the value of interprofessional education (IPE) ◥ Is IPE more effective for IPC teams in contrast to education interventions in which the same health and social care professionals learn separately from one another	◥ Only 6 studies examined; a few demonstrated positive changes when using IPE ◥ More research needs to be done on how IPE affects the healthcare process and patient outcomes

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
INTERPROFESSIONAL TEAM MODELS					
47	Roblin, D.W. (2003). Primary Health Care Teams Opportunities and Challenges in Evaluation of Service Delivery Innovations. *J Ambulatory Care Manage, 26*(1), 22–35.	Descriptive Article Describing three models of primary healthcare teams; implementing changes, planning, and evaluation opportunities	UNITED STATES	**Interprofessional Team** Primary Healthcare Teams ▸ Strong focus on organizing/implementing family healthcare teams ▸ Teams consisted of various members: physicians, registered nurses, nurse practitioners, behavioural specialists, health educators ▸ Focus on changing observation and expertise in patient care, more concentration on continuity of care service orientation	▸ Potential to improve system productivity, patient satisfaction, clinical quality, employee morale ▸ Potential to lower care delivery costs
48	Rosser, W.W., Colwill, J.M., Kasperski, J., & Wilson, L. (2011). Progress of Ontario's family health team model: A patient-centred medical home. *Annals of Family Medicine, 9*(2), 165-171.	Descriptive Article Describing the development, implementation, reimbursement and current status of the FHT	CANADA - ONTARIO	**Interprofessional Team** Family Health Team Primary Care ▸ This model was called the Patient-Centred Primary Care Collaborative Model ▸ The focus of the model is on advocacy for the patient, ensuring that proper referrals and health assessments take place; education and on-going counselling and follow-ups for the patient, and 24 hours a day/7 days a week response for the patient	▸ Increase the number of residents being trained in family medicine will facilitate the work of the physicians who were being overloaded with patients

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			INTERPROFESSIONAL TEAM MODELS		
49	Russel, G.M., Dabrouge, S., Hogg, W., Geneau, R., Muldoon, L., & Meltem, T. (2009). Managing chronic disease in Ontario primary care: The impact of organizational factors. *Annals of Family Medicine, 7*(4), 309-317.	Cross-Sectional Study (Qualitative Case Studies) Assessing four types of models addressing chronic disease management	CANADA - ONTARIO	**Interprofessional Team** Chronic Disease Care 4 Models ◥ Community Health Centre (CHC) – found to be superior in management of chronic disease – longer consultation time for patients and greater interprofessional collaboration; presence of NP ◥ Fee for service (FFS) ◥ Family health network (FHN) ◥ Health service organization (HSO)	◥ In all four cases, offices with fewer than 4 family physicians were found to be more effective in chronic disease management ◥ Quality of care increased when a nurse practitioner was involved, as the nurse practitioner helps to decrease the workload of the physician; the nurse practitioner has the flexibility to organize care management activities, improving the standard of care for patients
50	Schraeder, C., Fraser, C.W., Clark, I., Long, B., Shelton, P., Waldschmidt, V., & Kucera, C.L. (2008). Evaluation of a primary care nurse case management intervention for chronically ill community dwelling older people. *Journal of Nursing and Healthcare of Chronic Illness, 17*, 407-417.	Non-Randomized Study Effectiveness of a collaborative primary are nurse case management intervention emphasizing collaboration between physicians, nurses and patients	UNITED STATES	**Interprofessional Team** Nurse Case Management Intervention ◥ PHCT (Primary Healthcare Team) nurses and primary care physicians working together to improve risk identification, comprehensive assessments, shared planning, better patient education and monitoring, smooth transition of care, more effective use of healthcare resources for chronically ill older patients ◥ Study looked at the differences between a treatment group and comparison group	◥ Treatment group resulted in less re-hospitalization, which saved on hospital costs, (no other statistically significant results) ◥ Chronic care intervention that includes collaboration between physicians, nurses and patients, may be more effective if applied in integrated provider networks

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			INTERPROFESSIONAL TEAM MODELS		
51	Schraeder, C., Volland, P., & Golden, R. (2011). Promising Models of Care Coordination for Beneficiaries with Chronic Illnesses. *Aging in America*, PowerPoint Slides 1-31.	Presentation Slides	UNITED STATES	**Interprofessional Team** Chronic Disease Management Transitional care interventions ◥ Care Transitions Intervention (Coleman) ◥ Transitional Care Model (Naylor) ◥ Enhanced Discharge Planning Program – RUSH (Perry) Comprehensive Care Management - Medicare/ Duals ◥ Guided Care (Boult) ◥ GRACE (Counsell) ◥ Care Management Plus (Dorr) ◥ MCCD: Best Practice Sites (Brown) Comprehensive Care Management – Medicaid/ Duals ◥ Integrated Care Management (Douglas) ◥ Community Based Chronic Care Management (Lessler) ◥ Hospital to Home (Raven) ◥ Health Care Management Program (Reconnu & Herndon)	◥ Not applicable

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			INTERPROFESSIONAL TEAM MODELS		
52	Sicotte, C., D'Amour, D., & Moreault, M.P. (2002). Interdisciplinary Collaboration Within Québec Community Health Care Centres. *Social Science and Medicine, 55*, 991-2003.	Empirical Study Paper Studying interprofessional collaboration in Quebec, survey of CHCC's (Community Health Care Centres)	CANADA - QUEBEC	**Interprofessional Team** Community Health Care Centres ◥ Services provided in a single location ◥ Various healthcare providers are present (healthcare/social services combination) ◥ Professionals share goals/ responsibilities, make collective decisions, attempt to distribute tasks evenly ◥ Community-sponsored governing structure (usually led by a community board of directors)	◥ CHCCs in Quebec were only able to achieve modest results with their widely used IPC model – model is very dependent on internal wok group dynamics ◥ Despite IPC, professionals create monopolies to protect their area of expertise ◥ Re-align training programs to foster stronger collaboration between different groups in healthcare
53	Suter, P., Hennessey, B., Harrison, G., Fagan, M., Norman, B., & Suter, N.W. (2008). Home Based Chronic Care: An Expanded Integrative Model for Home Health Professionals. *Home Health Care Nurse Online, 26*(4), 222-228.	Knowledge Synthesis Review The benefits of utilizing the "division of labour" in healthcare and the expansion of the traditional CCM (Chronic Care Model)	GENERAL	**Interprofessional Team** Home Based Chronic Care Model (HBCCM) 4 Key Pillars: 1. High Touch Delivery System (comprehensive assessment, face-to-face visits) 2. Theory-based self-management support (self-efficacy improvement, health literacy) 3. Specialist oversight (coach, guide staff; liaise with physician specialists) 4. Technology (Telehealth, Electronic Registry, Data Exchange)	◥ Positive – cost- effective, better adherence monitoring, improved patient education, earlier detection and treatment for depression, patients benefit from health coaching and self-mastery techniques
54	Vyt, A. (2008) Interprofessional and transdisciplinary teamwork in health care. *Diabetes Metab Res Rev, 24*(1), S106 – S109. Retrieved from: www.interscience.wiley.com (DOI: 10.1002/dmrr.835).	Review Do nurse-led walk-in centres improve access to primary care	GENERAL	**Interprofessional Team** Diabetes Care ◥ Shared Care Plan: Promotes IP teamwork, each team member is actively contributing; each one responsible for one goal while coordinating shared care of carrying out responsibilities	◥ Ensure that there is an assessment of competencies ◥ Use technology to help with communication

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INTERPROFESSIONAL TEAM MODELS					
55	Wexler, M.M., & Siegler, E.L. Models of Care and Interprofessional Care Related to Complex Care of Older Adults. *Hartford Institute for Geriatric Nursing*, 1-17.	Descriptive Paper Description of different types of geriatric models	UNITED STATES	**Interprofessional Team** Numerous Models Complex Care of Older Adults **Comprehensive Discharge** ▪ Team included advanced practice nurses, physicians, social workers, other healthcare professionals as needed; specialized geriatric discharge coordinated by nurse specialists **PACE Model** ▪ Community nurses, physicians, social workers providing social/ medical services in an adult day-care setting; supplemented by in-home services **Nursing Home** ▪ IP team (social workers, nurses, physicians, recreational therapists, nutritionists) create a co-joined care plan for clients **Outpatient Geriatric** ▪ IP Team (geriatrician, nurses, social worker, physical therapist) studying the physical, emotional, psychological and functional status of the patient	▪ No clinical outcomes ▪ Questions nurses should consider before creating a team: 1. What are the issues that the team will need to discuss? 2. Who should be a member of the team and why? 3. How often should the team meet? 4. How can you establish effective communication and cooperation? 5. Who should lead the committee? 6. How should the committee be managed?

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			INTERPROFESSIONAL TEAM MODELS		
56	Wittenberg, E., Oliver, D.P., Demiris, G., & Regehr, K. (2010). Interdisciplinary collaboration in hospice team meetings. *Journal of Interprofessional Care, 24*(3), 264-273.	Exploratory Study IP members participated in a Modified Index of Interdisciplinary Collaboration (MICC) measuring their perceptions of collaboration in their hospice team	UNITED STATES	**Interprofessional Team** (Exploratory) Hospice Care ◥ Palliative team care includes volunteers, chaplains, nurses, doctors, dietitians, social workers	◥ No clinical outcomes ◥ Role ambiguity in this model resulted in lack of collaboration
57	Zwarenstein, M., Goldman J., & Reeves, S. (2009) Interprofessional collaboration: effects of practice-based interventions on professional practice and healthcare outcomes. *Cochrane Database of Systematic Reviews, 3*, (CD000072), DOI:10.1002/14651858. CD000072.pub2.	Systematic Review Impact of practice based interventions that will change Interprofessional Collaboration; either by increasing patient satisfaction or efficiency of healthcare	GENERAL	**Interprofessional Team** *Study focused on practice based interventions ◥ Two studies examined interprofessional rounds, ◥ Two studies examined interprofessional meetings ◥ One study examined externally facilitated interprofessional audit	◥ Review suggests that practice-based IPC interventions can improve healthcare processes and outcomes ◥ Various: One study on daily interdisciplinary rounds in inpatient medical wards at an acute care hospital showed positive impact on length of stay and total charges; another study had monthly multidisciplinary team meetings, which improved prescribing of psychotropic drugs in nursing homes

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
NURSE-LED MODELS					
1	Allinson, V. (2003). Breast cancer: evaluation of a nurse-led family history clinic. *Journal of Clinical Nursing, 13*, 765-766.	Evaluative Case Study Identifying key concepts that make nurse-led clinics acceptable	UNITED KINGDOM	**Nurse-led** Breast Cancer ◥ Nurses discussing family history of breast cancer with patients; breast self-exams, addressed any other fears, questions, concerns	◥ Patients expressed that they felt rushed, did not have time to have all their questions/ concerns addressed ◥ More follow-ups recommended to bridge information gap
2	Alsaffar, A. (2005). Family practice: A nursing perspective. *Ontario Family Practice*, 1-5.	Exploratory Study How to raise the status of Family Practice Nursing	CANADA - ONTARIO	**Nurse-led** Family Practice ◥ Nurse acts as the first point of contact in the family care practice ◥ Nurse provides mentorship to family and tries to prevent feelings of isolation of the patient ◥ Provides more clinical research to address the knowledge gap	◥ In order to increase the status of the family health nurse, physicians and the public need to be further educated on the role of the family health nurse ◥ Develop a set curriculum in undergraduate programs about the family health nurse
3	Arvidsson, S.B., Petersson, A., Nilsson, I., Andersson, B., Arvidsson, B.S., Petersson, I.F., & Fridlund, B. (2006). A nurse-led rheumatology clinic's impact on empowering patients with rheumatoid arthritis: *A qualitative study. Nursing and Health Sciences, 8*, 133-139.	Qualitative Study Nurse-led rheumatology clinic empowering patients with their functionality	SWEDEN	**Nurse-led** Rheumatology Clinic ◥ Nurse focuses on patient education, counselling; discusses treatment options and helps to design a care plan with patient	◥ Patients satisfied with level of care provided in nurse-led clinic ◥ Appreciated follow-ups by nurses

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			NURSE-LED MODELS		
4	Ashcroft, J., Farrelly, B., Emmanuel, E., & Borbasi, S. (2010). A nurse practitioner initiated model of service delivery in caring for people with dementia. *Contemporary Nurse, 36*(1-2), 49-60.	Discussion Paper Importance of NP role in dementia treatment	AUSTRALIA	**Nurse-led** Dementia Dementia Outreach Service Model (DEMOS) ◥ Team included NP (lead), clinical nurse, clinical facilitator, endorse nurse, assistant in nursing, social worker, research assistant, administrative assistant ◥ Aims: Improve quality of care, reduce aggression towards nursing staff, build capacity, reduce inappropriate referrals, improve continuity of care	◥ Staff able to see benefits of outreach staff; capacity strongly improved ◥ All facilities that tested the DEMOS model said that they would use it again and recommend DEMOS services
5	Barrett, B.J., Garg, A.X., Goeree, R., Levin, A., Molzahn, A. & Rigatto, C. (2011). A Nurse-coordinated Model of Care versus Usual Care for Stage 3/4 Chronic Kidney Disease in the Community: A Randomized Controlled Trial. *Clinical Journal of the American Society of Nephrology, 6*, 1241-1247.	Randomized Controlled Trial How to optimally care for Chronic Kidney Disease	CANADA - GENERAL	**Nurse-led** Chronic Kidney Disease ◥ In the intervention group, the patients received additional care, aside from their physician from a nurse and nephrologist, focusing on Lipid and BP (blood pressure) management	◥ Patients displayed high satisfaction with the level of care in the intervention group ◥ Blood pressure levels were lowered and managed better in the intervention group
6	Berra, K., Miller, N.H., & Jennings, C. (2011). Nurse-based models for cardiovascular disease prevention from research to clinical practice. *Journal of Cardiovascular Nursing, 26*(45), 46-55.	Literature Review Examining the benefits of a nurse directed team with patients with cardiovascular disease	CANADA	**Nurse-led** Cardiovascular Disease ◥ Nurse works alongside nutritionists, physicians, pharmacists, psychologists, social workers, allied health professionals ◥ Nurse focuses on patient goal-setting and lifestyle changes	◥ Positive for patients: Reduction in smoking, blood pressure levels, better diet choices, loss of weight, increased physical activity

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			NURSE-LED MODELS		
7	Butt, G. (2009). Partnership and population outcome relationships in four nurse-led hepatitis C integrated prevention and care projects. Thesis: McMaster University.	Comparative Study Examining Nurse-led projects in urban and rural areas in Hepatitis C prevention and care	CANADA - ONTARIO	**Nurse-led** Hepatitis C ▸ This model focuses on the synergy between nurse leadership and interprofessional practice and its outcomes on patients in nurse-led Hepatitis C prevention and care projects	▸ Two tools were identified that proved to effectively measure group synergy: (1) Partnership Self-Assessment Tool partnership (PSAT) , which measures partnership synergy and partnership functioning; (2) Team Climate Inventory, (TCI) which measures the innovativeness of the team
8	Carlucci, M.A., Arguello, L.E., & Menon, U. (2010). Evaluation of an advanced practice nurse- managed diabetes clinic for veterans. *The Journal of Nurse Practitioners, 6*(7), 524-531.	Descriptive Pilot Study Psychological and behavioural benefits for veterans in an Advanced Practice Nurses clinic for type 2 diabetes	UNITED STATES	**Nurse-led** Advance Practice Nurse – Managed Diabetes Clinic for Veterans Advanced practice nurse works independently ▸ Patients receive a questionnaire to assess physiological data; follow-up done 6 weeks later ▸ Focus on self-care and knowledge empowerment	▸ Physiological changes were miniscule ▸ Behavioural changes such as diabetes/insulin adherence increased due to APN education sessions
9	Charlton, J., Mackay, L., & McKnight, J.A. (2004). A pilot study comparing a type 1 nurse-led diabetes clinic with a conventional doctor-led diabetes clinic. *European Diabetes Nursing, 1*(1), 18-21.	Pilot Study Evaluation of patients with diabetes and their experience with a nurse-led clinic as opposed to a doctor-led one	SCOTLAND	**Nurse-led** Diabetes ▸ Focus on patient education and awareness; behavioural changes such as diet and exercising, goal-setting were discussed; routines tests performed	▸ 95% of patients wanted to continue with nurse-led care ▸ Shorter wait times; better continuity of care ▸ Some issues with appointment bookings

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			NURSE-LED MODELS		
10	Chiu, C.W., & Wong, F.K.Y. (2010). Effects of 8 weeks sustained follow-up after a nurse consultation on hypertension: a randomised trial. *International Journal of Nursing Studies, 47*, 1375-1382.	Randomized Controlled Trial Do patients with HBP (High Blood Pressure) benefit from nurse-led clinic telephone follow-ups?	HONG KONG	**Nurse-led** Blood pressure/hypertension ◥ Focus on patients to decrease blood pressures levels; nurses provided education on diet, exercise, managing symptoms, and prescription adherence	◥ Follow-up patients increased healthy lifestyle habits ◥ Satisfied with telephone follow-ups
11	Clendon, J. (2001). The feasibility of a nurse practitioner-led primary health care clinic in a school setting: a community needs analysis. *Journal of Advanced Nursing, 34*(2), 171-178.	Feasibility Study Can a NP or a Primary Health Nurse take the lead in a family clinic in a primary school?	NEW ZEALAND	**Nurse-led** Primary Care ◥ Nurse practitioner would run a school primary care clinic; the nurse would care for the family and the children	◥ Decreases in the number of children hospitalizations
12	Coddington, J.A., & Sands, L.P. (2008). Cost of health care and quality outcomes of patients at nurse-managed clinics. *Nursing Economics, 26*(2), 75-83.	Literature Review Cost and quality of nurse managed clinics	GENERAL	**Nurse-led** Nurse works independently in clinic ◥ Focus on behavioural changes, health promotion, improving the health of non-insured patients	◥ Decreased hospitalization and emergency room use ◥ Patients extremely satisfied with the nurse-managed clinic
13	Collins, J. (2010). Audit of a nurse-led bone marrow biopsy clinic. *Cancer Nursing Practice, 9*(4), 14-19.	Audit Experiences of patients undergoing bone marrow procedures by a clinic nurse specialist	UNITED KINGDOM	**Nurse-led** Trephine Biopsy, Lymphoma ◥ Clinical nurse specialist performs bone marrow aspiration and trephine biopsy in patients with lymphoma ◥ This is a new role for CNS's previously done by senior medical staff	◥ Patients experienced minimum levels of pain ◥ Nurse was able to retrieve high-quality samples
14	Connor, C.C., Wright, C.C., & Fega, C.D. (2002). The safety and effectiveness of nurse-led anticoagulant service. *Journal of Advanced Nursing, 38*(4), 407-415.	Comparative Study Are nurse-led anticoagulant clinics as effective and safe as haematologist led clinics	UNITED KINGDOM	**Nurse-led** Anticoagulant Clinics ◥ Nurse manages oral anticoagulant therapy and monitors and manages their INR; patients attend clinic from 1-10 weeks	◥ There were no statistically significant differences in anticoagulant control between the haematologist; nurse was as effective as managing the patients.

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			NURSE-LED MODELS		
15	Cooper C, Wheeler, D.M., Woolfenden, S., Boss, T., & Piper, S. (2006). Specialist home-based nursing services for children with acute and chronic illnesses. *Cochrane Database of Systematic Review, 4*(CD004383), 1-22.	Systematic Review Evaluating specialist home-based nursing services for children with acute/chronic illnesses	GENERAL	**Nurse-led** Acute Chronic Illness ◥ Nurse providing in-home visits and follow-ups after diagnosis and continued to provide services by telephone for the next 24 months	◥ Improved satisfaction with home care ◥ No adverse outcomes ◥ No evidence of reduced access to care
16	Corser, W., & Xu, Y. (2009). Facilitating Patients' Diabetes Self-Management: A Primary care Intervention Framework. *Journal of Nursing Care Quality, 24*(2), 172-178.	Intervention Framework to support a consistent delivery of diabetes self-management services	GENERAL	**Nurse-led** Self-Management Diabetes Self-Management (DSM) ◥ Nurse clinicians play a very important role in DSM; intervention activities such as telephone follow-ups, distribution and explanation of DSM written materials; creating a care plan with the patient (assessing DSM needs, resources, supports, barriers); provide more holistic care	◥ Positive results for patients: ◥ Improved DSM behaviours (nutrition, exercise, smoking cessation) ◥ Greater accessibility to DSM resources ◥ Improved DSM health outcomes (better understanding of health condition, medicinal adherence)
17	Cox, K., & Wilson, E. (2003). Follow-up for people with cancer: nurse-led services and telephone interventions. *Journal of Advanced Nursing, 43*(1), 51-61.	Literature Review The effectiveness of nurse-led follow-ups for cancer patients	GENERAL	**Nurse-led** Cancer Care Follow-up care, telephone intervention ◥ Nurses perform follow-ups with patients via the phone after cancer treatments, or in person, to support the patient's psychological needs	◥ Satisfaction of patients with nurse-led follow-up was high; did not improve quality of life but managing of symptoms ◥ Cost-effective; additional support patients could not get from their GPs (general practitioners)

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			NURSE-LED MODELS		
18	Crowe, C. (2009). Development and implementation of a 'nurse run' post-acute stroke clinic. *Australian Nursing Journal, 16*(8), 28-31.	Case Study based on finding of systematic review	AUSTRALIA	**Nurse-led** Stroke Clinic ▸ Stroke Liaison Nurse (SLN) connect with the patient's stroke care provider and gathers all the data before the patient comes to the clinic; 50-minute appointment ▸ SLN works alongside stroke clinical nurse in the same office, share similar roles ▸ Nurse provides education, lifestyle/ health promotion, stress tests, follow-ups	▸ Decrease in hospitalizations ▸ Decrease in care fragmentation
19	Cruickshank, S., Kennedy C., Lockhart, K., Dosser, I., & Dallas, L. (2008). Specialist breast care nurses for supportive care of women with breast cancer. *Cochrane Database of Systematic Reviews, 1*(CD005634), 1-40.	Systematic Review Establishing changes in outcome for patients with breast cancer through Breast Cancer Nurses	GENERAL	**Nurse-led** Breast Cancer ▸ Nurse specialist sees patients 3 months post-surgery; provides information on recurrence, advice, contact details, addressing symptom concerns ▸ Coordinated yearly mammogram	▸ Brest cancer nurses provide some benefit to patients areas such as anxiety, early recognition depressive symptoms ▸ No significant findings
20	Desborough, J., Forrest, L., & Parker, R. (2011). Nurse-led primary healthcare walk-in centres: an integrative literature review. *Journal of Advanced Nursing, 68*(2), 248-263.	Integrative Literature Review Are walk-in centres by nurses and effective way to improve access to primary care	GENERAL	**Nurse-led** Primary Healthcare Walk-in Centres ▸ Nurses providing care for a variety of illnesses, shorter wait times, more focus on symptom management	▸ Increased demand for walk-in clinics; nursing education needs to match the demand for this

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NURSE-LED MODELS					
21	Edwards, J.B., Oppewal, S., & Logan, C. L. (2003). Nurse-Managed Primary Care: Outcomes of a Faculty Practice Network. *Journal of the American Academy of Nurse Practitioners, 15*(12), 563-569.	Program Evaluation Evaluating Nurse Managed Care at a Faculty Practice Network	UNITED STATES	**Nurse-led** Acute Chronic Illness ◥ Staffing varies: registered nurse, practice nurses, case managers, health educators, overseen by a physician mentor ◥ Focus on preventive and health promotion services for clients	◥ Patient satisfaction rate is very high, (91%) and 94% said that they would return for further care; external and internal audits find quality of care to be excellent; students study at the centres and faculty members present research based on their work with the FPN (Family Practice Network)
22	Farrell, C., Molassiotis, A., Beaver, K., & Heaven, C. (2011). Exploring the scope of oncology specialist nurses' practice in the UK. *European Journal of Oncology Nursing, 15*, 160-166.	Survey Exploring the scope of practice of nurses in oncology by surveying nurses	UNITED KINGDOM	**Nurse-led** Oncology ◥ Nurse-led clinics that provide patients with screening, assessments, follow-ups, education, counselling ◥ Role expansion necessary due to gaps in the healthcare system ◥ Nurses experiencing barriers such as lack of support for autonomous nurse-led clinics; cannot prescribe chemotherapy drugs on their own	◥ Nurse-led clinics treat patients holistically and reduce wait times and hospital visits ◥ Role clarity and scope of nurse duties should be clarified to enhance collaboration ◥ More support provided by physicians
23	Felber, D., Mahama, N., Mohar, D.R.H., & Kinion, E. (2003). Nursing care delivered at academic community-based nurse-managed center. *Outcomes management, 7*(2), 84-89.	Retrospective Descriptive Study Services delivered by Community-based Nurse Managed Centres	UNITED STATES	**Nurse-led** Health Promotion/Disease Prevention ◥ Nurse works alongside nursing students, medical students, volunteers physicians, 3rd year residents ◥ Community Nurse-Managed Center (CNMC) works with the underserved; strong focus on health promotion, disease prevention	◥ No clinical outcomes ◥ CNMC main goal is to improve access to care; collaboration with other social agencies brings more attention to this issue for policy change

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			NURSE-LED MODELS		
24	Fitzsimmons, D., Hawker, S.E., George, S.L., Johnson, C.D., & Corner, J.L. (2005). Nurse-led models of chemotherapy care: mixed economy or nurse-doctor substitution? *Journal of Advanced Nursing, 50*(3) 244-252.	Exploratory Study How do cancer service users feel about nurse-led chemotherapy clinics	UNITED KINGDOM	**Nurse-led** Chemotherapy Care ◥ Nurse would be responsible for total patient management (assessment, prescribing chemo doses, prescribing symptom related drugs, administering the chemotherapy, ordering blood work)	◥ Potential to reduce wait times; less stress on medical staff; cost- saving measure
25	Foreman, D.M., & Morton, S. (2011). Nurse-delivered and doctor-delivered care in an attention deficit hyperactivity disorder follow-up clinic: a comparative study using propensity score matching. *Journal of Advanced Nursing, 67*(6), 1341-1348.	Comparative Study Are nurse prescribers as effective as doctors in Attention Deficit Hyperactive Disorder	UNITED KINGDOM	**Nurse-led** Attention Deficit Hyperactivity Disorder (ADHD) ◥ Nurse-led ADHD clinic; the nurse would independently diagnose routine cases of ADHD, manage these patients and dispense their medication. ◥ The nurse was to be qualified as a general and mental health nurse, and obtained a nurse prescribing qualification	◥ Potentially cost-saving ◥ Reduces stigmas about nurse's scope of work
26	Given, C.W., Given, B.A., Sikorskii, A., You, M., Sangchoon, J., Champion, V., & McCorkle, R. (2010). Deconstruction of Nurse-Delivered Patient Self-Management: Factors Related to Delivery Enactment and Response. *Ann Behavioral Med, 40*(1), 99-113.	Randomized Clinical Trial Study Self-management interventions related to symptom responses amongst cancer patients	UNITED STATES	**Nurse-led** Primary Care - depression ◥ Nurses guided patients through four stages; self-care behaviours, information and decision-making, communication with family/ providers ◥ Nurses use software to assess and rate symptoms, record interventions that the patients had tried/were currently using	◥ Allowed patients to be more engaged in self-care ◥ Patients prioritize problems using methods that fit into their routines

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			NURSE-LED MODELS		
27	Glynn, LG., Murphy, A.W., Smith, S.M., Schroeder, K., Fahey, T. (2010). Interventions used to improve control of blood pressure in patients with hypertension. *Cochrane Database of Systematic Reviews, 3*(CD005182), DOI:10.1002/14651858.CD005182.pub4.	Systematic Review Effectiveness of interventions to improve blood pressure control in patients with hypertension	GENERAL	**Nurse or Pharmacy Led Care** ◥ Nurse-led interventions included phone call supports, appointment follow-up reminders, teaching patient self-monitoring techniques, monitoring and tracking of hypertension patients` progress	◥ Positive: demonstrated blood pressure control, stabilization of mean systolic blood pressure, adherence to follow-ups by patients ◥ Education alone is not effective
28	Graham, L., Neal, C.P., Garcea, G., Lloyd, D.M., Robertson, G.S. & Sutton, C.D. (2010). Evaluation of nurse-led discharge following laparoscopic surgery. *Journal of Evaluation in Clinical Practice, 18,* 19-24.	Retrospective Comparison Assessing the effectiveness of a nurse-led discharge following laparoscopic surgery	UNITED KINGDOM	**Nurse-led** Laparoscopic Surgery ◥ Nurses have a very clear outline on discharge that they must follow resulting in more nurse-led discharges	◥ Nurse-led discharges should be encouraged; reduce workload of the physicians ◥ Re-arrange scheduling of patients so discharges can occur at optimal times, increasing bed availability
29	Haber, J., Strasser, S., Lloyd, M., Dorsen, C., Knapp, R., & Auerhahn, C. (2009). The oral-systemic connection in primary care. *Nurse Practitioner, 34*(3), 43-48.	Overview Examples of nurse-managed health centres	UNITED STATES	**Nurse-led** Cancer, Chronic Disease Management ◥ Nurses provided comprehensive health and risk assessments; cancer screening, health education/counselling, management of chronic conditions; diagnosis/treatment of acute illnesses	◥ High rates of patient satisfaction; 95% agreed to recommend care services they received

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
			NURSE-LED MODELS		
30	Harris, D.L., & Cracknell, P. (2005) Improving diabetes care in general practice using a nurse-led, GP supported clinic: a cohort study. *Practical Diabetes International, 22*(8) 295-300.	Cohort Study Studying patient centred care methods surrounding type 2 diabetes	UNITED KINGDOM	**Nurse-led** Diabetes Care ◥ Nurses underwent extra training in diabetes care management ◥ Nurse created a management plan for each patient that was verified by the GP (General Practitioner) ◥ Nurse discussed fitness/health goals at appointments ◥ If needed, prescriptions were changed/altered	◥ The nurse-led clinic could provide patients with the intensive follow-up they needed that the GP clinic couldn't due to time constraints ◥ Nurse-led clinic improved cholesterol and blood glucose levels in patients
31	Heale, R., & Butcher, M. (2010). Canada`s First Nurse Practitioner Led Clinic: A Case Study in Healthcare Innovation. *Nursing Leadership, 23*(3), 21-29.	Case Study	CANADA - ONTARIO	**Nurse-led** Northern Ontario – establishment of first NP-Led clinic ◥ Antecedents for success: leadership, financial considerations, idea generation, teamwork, culture (cultivating acceptance, use of media and demand for care and for jobs for NPs) ◥ Advocacy work highlighted ◥ Barriers: complex care needs; resistance from organized medicine ◥ Model characteristics: board with 51% NPs on board – cannot be employees, NP for clinic director, salaried staff, physicians as consultants, dietitian, pharmacist, registered nurses, clerical; satellite site(s)	◥ Not applicable

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
			NURSE-LED MODELS		
32	Hebert, P.L., Sisk, J.E., Want, J.J., Tuzzlo, L., Casablanca, J.M., Chassin, M.R., Horowits, C., & McLaughlin, M.A. (2008). Cost-effectiveness of nurse-led disease management for heart failure in an ethnically diverse urban community. *Annals of Internal Medicine, 149*(8), 540-548.	Randomized Controlled Trial Can nurse-led heart failure clinics reduce cost and improve quality of life	UNITED STATES	**Nurse-led** Cardiovascular Disease ◥ Nurse assigned 203 patients; included 1 in-person appointment and periodic follow-ups by phone over 12 months	◥ Patients expressed improvements in quality of life ◥ Cost-effectiveness improved slightly
33	Hilton, B.A., Budgen, C., Molzahn, A., & Attridge, C.B. (2001). Developing and Testing Instruments to Measure Client Outcomes at the Comox Valley Nursing Centre. *Public Health Nursing, 18*(5), 327-339.	Pilot Study with Multi-Method Evaluation Program Evaluation of 16 month demonstration project – survey and qualitative interviews with clients	CANADA - BRITISH COLUMBIA	**Nurse-led** Primary care Free-standing nurse-managed centre offering drop-ins, group and outreach services in a small community of 58,000 people. Centre staffed by nursing coordinator, 4 part-time nurses and half- time secretary/receptionist. Focused on: ◥ coordination and integration of healthcare services ◥ provide essential healthcare in the community ◥ increase client/patient self-reliance ◥ focus on strategies to reduce the effects of social determinants of health ◥ provide nursing care that is effective (in terms of cost and health benefits)	◥ High client satisfaction ◥ More knowledgeable about health situation ◥ Improved physically and mentally ◥ Patients taking action on their own behalf ◥ Better use of healthcare resources (i.e. not using the hospital emergency room as much) ◥ Can communicate more effectively with healthcare providers ◥ Helping others through community action and group support

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			NURSE-LED MODELS		
34	Ismail, N., Ratchford, I., Proudfoot, C., & Gibbs, J. (2011). Impact of a nurse-led clinic for chronic constipation in children. *Journal of Child Health Care, 15*(3), 221-229.	Evaluative Study Impact of outpatient nurses managing children with chronic constipation using a questionnaire	UNITED KINGDOM	**Nurse-led** Chronic Constipation ◥ Nurse educates patients/children about the condition ◥ Establish a good toiletry routine ◥ Provided literature on care management ◥ Provide support/follow-up appointments	◥ Reduction in defecation pain ◥ Children more willing to use the toilet ◥ Parent knowledge of the condition increased ◥ Satisfaction with nurse-led clinic increased from 34-90%
35	Kovner, C., & Walani, S. (2010). Nurse Managed Health Centers (NMHCs) - Research Brief. Robert *Wood Johnson Foundation Nursing Research Network,* 1-2. Retrieved from: http://www.rwjf.org.	Research Brief Describing Nurse Managed Centres as a source of Primary care	UNITED STATES	**Nurse-led** Primary Care ◥ Model: Nurse-managed health centres (NMHC); usually under the leadership of an advanced practice nurse; emphasis on health education, prevention, and promotion; ◥ Usually provide care to underserved communities	◥ Some evidence that if NMHCs operated at full capacity, the cost of care per visit would decrease; less expensive than local medical care ◥ Some evidence that NMHCs prescribe higher rates of generic medication

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			NURSE-LED MODELS		
36	Laurant, M., Reeves, D., Hermens, R., Braspenning, J., Grol, R., & Sibbald, B. (Reprinted 2009). Substitution of doctors by nurses in primary care. *Cochrane Database of Systematic Reviews 2004, 4*(CD00127), DOI: 10.1002/14651858.CD001271.pub2.	Systematic Review Demand for primary care services has increased and supply of physicians is constrained – result is nurse-doctor substitution	GENERAL	Nurse-led Care Doctor-nurse substitution ◥ In 7 studies the nurse assumed responsibility for first contact and ongoing care for all presenting patients (mixed results, some positive) ◥ In 5 studies the nurse assumed responsibility for first contact care for patients wanting urgent consultations during office hours or out-of-hours (patients more satisfied with nurse-led consultations/care) ◥ In 4 studies, nurse took responsibility for the ongoing management of patients with particular chronic conditions (no significant differences)	◥ Findings suggest that appropriately trained nurses can produce as high quality care as primary care doctors and achieve as good ◥ health outcomes for patients (more studies required) ◥ Nurses have the potential to reduce doctor workloads and healthcare costs based on context
37	Lewis, R., Neal, R.D., Williams, N.H., France, B., & Wilkinson, C. (2009) Nurse-led vs. conventional physician-led follow-up for patients with cancer: systematic review. *Journal of Advanced Nursing, 65*(4), 706–723.	Systematic Review Review of effectiveness and cost effectiveness of nurse-led follow up for patients with cancer	GENERAL	**Nurse-Led** Cancer Care ◥ The role of the specialist nurse was to provide information and support, co-ordinate input from other agencies or services, and facilitate communication with GPs and primary healthcare teams	◥ Cost-efficient, feasible ◥ Patients preferred the convenience of nurse-led follow-ups by phone but enjoy in person follow-ups overall

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			NURSE-LED MODELS		
38	Lyon, S. (2011). Small, Independent, and Out in Front. *Stories from the field, Nurse-led Medical Homes: Increasing Access to Quality Care*, April, 1-2.	Case Study Examining the first nurse-led practice in the U.S. to receive Level 3 Patient Centred medical home recognition from the National Committee for Quality Assurance	UNITED STATES	**Nurse-led** Chronic Disease Management ◥ Facility where advanced practice registered nurses have the autonomy to practice without physician oversight ◥ Use of EMRs, electronic prescribing, registries for chronic disease patients	◥ Advanced practice registered nurses can deliver the same quality of care as family practitioners ◥ Patients feel comfortable in their healthcare environment; provided with education and counselling to take ownership of their health
39	Martin-Misener, R., Reilly, S.M., & Vollman, A.R. (2010). Defining the role of primary health care nurse practitioners in rural Nova Scotia. *Canadian Journal of Nursing Research, 42*(2), 30-47.	Mixed Methods Study Examining the influential factors for the full integration of NP`s into primary and acute care (legislative, educational, practice)	CANADA - NOVA SCOTIA	**Nurse-led** Primary Healthcare ◥ 9 Chairpersons – 6 female and 3 male – were interviewed ◥ In rural Nova Scotia, wait times to access a family practice is 3-4 weeks, so many people go to the ER ◥ Expand role of the NP and encourage nurse-led practices in order to perform more procedures, prescribe more medications, and admit patients when necessary ◥ The NPs are the link between the community and family practice and their role is to provide outreach services	◥ Findings suggest that nurse practitioners are not being encouraged or given opportunities to work to their full potential; barriers in their practice need to be removed ◥ This can be accomplished by educating the community on the role of the nurse practitioner and increasing patient access to nurse practitioners

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			NURSE-LED MODELS		
40	McAiney, C.A., Haughton, D., Jennings, J., Farr, D., Hillier, L., & Morden, P. (2008). A unique practice model for nurse practitioners in long-term care homes. *Journal of Advanced Nursing, 62*(5), 562-571.	Pilot Project Can NPs increase staff confidence, prevent hospital admission and promote early discharge	CANADA - ONTARIO	**Nurse-led** Gerontology ▸ NP would provide assessment and treatment for common complex conditions; rapid care ▸ Prevent unnecessary hospitalizations and promote early discharges ▸ Increase staff capacity to deliver optimal care ▸ NP would work alongside physicians and other staff members ▸ In the study, nurses prospectively collect data on their clinical activities and patient outcomes	▸ Significant decrease in hospitalizations ▸ Increase in staff confidence; strong display of trust between other team members and the nurse practitioners ▸ Low nurse practitioner-resident ratio still enhances quality of care
41	McLoughney, CR., Khan, A., & Ahmed, A.B. (20007). Effectiveness of a specialist nurse-led intervention clinic in the management of cardiovascular risk factors in diabetes. *European Diabetes Nursing, 4*(3) 100-105.	Intervention Clinical Study The effectiveness of a specialised nurse-led, protocol driven, doctor-supervised clinic	UNITED KINGDOM	**Nurse-led** Diabetes Care Specialist nurse-led intervention clinic in the management of cardiovascular risk factors ▸ Nurse had previous experience with diabetes/hypertension/hyperlipi-demia; physicians, clinicians, pharmacists, trained the nurse on how to implement protocols ▸ Nurse performed tests, created a patient management plan ▸ Each visit included feedback, goal evaluation and planning, assessment of smoking/obesity where applicable	▸ Improved patient satisfaction, symptom control, data collection, medical and lifestyle changes ▸ Patients achieved blood pressure control and lipid targets ▸ Diabetes control significantly improved

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			NURSE-LED MODELS		
42	Miles, K. (2003).Comparing doctor- and nurse-led care in a sexual health clinic: patient satisfaction questionnaire. *Journal of Advanced Nursing, 42*(1), pp. 64–72.	Qualitative Study Development of a patient satisfaction questionnaire: Comparing the satisfaction of nurse-led vs. doctor led genitourinary clinics	UNITED KINGDOM	**Nurse-led** Comparison Doctor vs. Nurse-led Clinic: Genitourinary Medicine ◥ Nurse attends educational interventions; makes clinical assessments; performs follow-ups, appointment reminders; provides regular feedback to patient's primary care provider	◥ Systematic follow-ups with patients had a positive outcome on detecting depression earlier
43	Ministry of Health and Long-Term Care. (2007) *Nurse Practitioner Led Clinics.* Retrieved from:http://www.health.gov.on.ca/transformation/np_clinics/np_mn.html.	Public Information	CANADA - ONTARIO	**Nurse-led** Primary Care ◥ In 2007 the Ministry of Health and Long-Term Care announced the creation of 25 nurse practitioner-led clinics to be fully operational by the end of 2012 ◥ These clinics would deliver comprehensive and holistic primary care that would enhance health promotion, chronic disease management and prevention ◥ Focus on integrated care through community partnerships and care coordination	◥ Comprehensive, accessible and coordinated family healthcare services to communities that do not have access to a primary care provider
44	Molzahn, A., Bruce, A., & Shields, L. (2008). Surveillance de l'affection rénale chronique dans une clinique gérée par du personnel infirmier et supervisée par des médecins: l'expérience CanPREVENT. *CJNR, 40*(3), 96-112.	Qualitative Research Study Examining the nature of care provided to patients with chronic kidney disease	CANADA - BRITISH COLUMBIA	**Nurse-led** Chronic Kidney Disease ◥ Clinic was run by a nurse and supported by a nephrologist ◥ Patients continued to receive care from their primary care physician ◥ Nurse was working in partnership with patients and their families to improve their health and overall quality of life	◥ Patients demonstrated a better response to some of the non-medical interventions such as fluid and diet restrictions, coupled with regular self-weighing and intensive counselling

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			NURSE-LED MODELS		
45	Moser, A., Houtepen, R. & Widdershoven, G. (2007) Patient autonomy in nurse-led shared care: a review of theoretical and empirical literature. *Journal of Advanced Nursing, 57*(4), 357–365.	Theoretical and Empirical Literature Review How nurses can support patient autonomy	UNITED KINGDOM	**Nurse-led** Hospice Care ◥ Shared expertise between patient and professional; share responsibility of problem-solving ◥ Patient sets goals, professional helps them to make informed decisions ◥ Patients gain a better understanding of their condition/ behaviours; problems identified by patient and caregiver	◥ Improves patient self-mastery skills and self-efficacy, positively impacting clinical outcomes
46	Moyez, J., Halkett, G., Deas, K., O' Connor, M., Ward, P., & O'Driscoll, C. (2010). How do Specialist Breast Nurses help breast cancer patients at follow-up? *Collegian, 17*, 143-149.	Thematic Analysis Consultations between Specialist Breast Nurses (SBNs) and patient	AUSTRALIA	**Nurse-led** Breast Cancer ◥ The SBN accompanies each woman through this phase in her life; the SBN provides a very strong supportive role – normalizing, facilitation of services, prevention, promoting self-confidence, embracing a proactive approach	◥ Positive – patients responded effectively to the fact that SBNs were offering more supports other than a follow-up of symptoms
47	Naylor, M., Aiken, L., Kurtzman, E., & Olds, D. (2010). The Importance of Transitional Care in Achieving Health Reform. *Health Affairs, 30*(4): 746-754.	Synthesis Review Nursing contribution to care coordination and transitional care	GENERAL	**Nurse-led** Primary Care ◥ Chronic Care Model: Nurse focuses on patient education and self-management to reduce hospitalization and readmission; how to adhere properly to medications	◥ Model appears to have some positive influence on patient adherence and quality of life ◥ No positive effect on mortality rates ◥ No evidence of cost-savings

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			NURSE-LED MODELS		
48	Nelson, K., Chistensen, S., Aspros, B., McKinlay, E.,& Arcus, K. (2009). Lessons from eleven primary health care nursing innovations in New Zealand. *International Nursing Review, 56*, 291-298.	Evaluation (Research and Development Approach) Evaluating and Assessment of various innovative models in the Primary Care setting	NEW-ZEALAND	**Nurse-led** Primary Care Nurse-led models ◥ Nurses have an essential role providing mentorship, advice, and advocacy for patients ◥ Role of nursing leadership ◥ Regulatory environment ◥ Numerous contextual factors	◥ Reduction in fragmentation in nursing services
49	New, J.P., Mason, J.M., Freemantle, N., Teasedale, S., Wong, L.M. & Bruce, N.J. (2003). Specialist Nurse–Led Intervention to Treat and Control Hypertension and Hyperlipidemia in Diabetes (SPLINT). *Diabetes Care, 26*, 2250-2255.	Randomized Controlled Implementation Trial Study Determining the effectiveness of a nurse-led clinic for hypertension and hyperlipidemia	UNITED KINGDOM	**Nurse-led** ◥ Diabetes Care: Hypertension and Hyperlipidemia ◥ Nurses helped to assess lung function, carried out exercise testing, education on how to improve quality of life, health promotion; studied infective exacerbations of patients	◥ No significant difference between nurse-led, physician-led clinic ◥ Increase of hospitalized visits in nurse-led care and re-admissions
50	Nurse-Led Outreach Teams on the Rise Bring a New Kind of 'House Call' to Long Term Care http://votehelena.ca/News/249?l=EN.	Website Article	CANADA - ONTARIO	**Nurse-led** Primary Care ◥ A new type of house-call for long-term care residents in the Central Local Health Integration Network (LHIN) ◥ Guided by 3 nurse-led outreach teams, seniors who become acutely ill and who may need to be transferred to the hospital are now receiving the care and support they need in their own homes	◥ Positive effect on wait times; minimizes transfers to the emergency department ◥ Provides safe, high quality care in a timely manner

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NURSE-LED MODELS					
51	Palfreyman, S., Trender, H., & Beard, J. (2004). Do patients with claudication need to see a vascular surgeon? A before and after study of a nurse-led claudication clinic. *Practice Development in Health Care, 3*(1) 53–64.	Audit Comparing patient outcomes and quality indicators before and after the introduction of a vascular nurse specialist claudication clinic	UNITED KINGDOM	**Nurse-led** Cardiovascular Health ◥ Nurse receives referral letters from general practitioner, nurse makes appointment with vascular nurse specialist ◥ Physical assessments are completed ◥ Confirms diagnosis of intermittent claudication	◥ Reduction in wait times ◥ Thorough examination of patient's history
52	Paterson, B.L., Duffett-Leger, L., & Crutterden, K. (2009). Contextual Factors Influencing the Evolution of Nurses' Roles in a Primary Health Care Clinic. *Public Health Nursing, 26*(5), 421-429.	Qualitative Study (Interpretive Description Design) Research study on a nurse-managed Community Health Clinic; examining how the nurse role changed over time	CANADA - NEW BRUNSWICK	**Nurse-led** Community Health Clinic – Primary Care ◥ Socio, political and economic context shaped the development and sustainability of the model ◥ In this model the role of the nurse is extended beyond primary care to provide relationships with the clients and their families, and to actively participate in the community ◥ The clinic is run by a nurse practitioner who works with a social worker, outreach nurse, office worker, and data entry person ◥ Volunteers in the CHC include nurses, dentists, massage therapists, psychologists, mental health counsellors, addiction counsellors, and foot care specialists	◥ The funding that was provided for the CHC was not sufficient so the nurses had to do a lot of the fundraising themselves to encourage private donations ◥ Current funding mechanisms in place contradict collaborative relationships by creating competition between community agencies ◥ In this instance, nurses used political action as a means of caring for individual clients and the community

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			NURSE-LED MODELS		
53	Raftery, J. P., Yao, G.L., Murchie, P., Campbell, N.C., & Ritchie, L.D. (2005). Cost Effectiveness of Nurse-Led Secondary Prevention Clinics for Coronary Heart Disease In Primary Care: Follow Up of a Randomised Controlled Trial. *British Medical Journal, 330*(7493), 707-710.	Randomized Controlled Trial: Cost Effectiveness Analysis Establishing the cost effectiveness of nurse led prevention clinics for coronary heart disease based on four years' follow- up of a randomized controlled trial.	UNITED KINGDOM	**Nurse-led** Coronary Heart Disease ◥ Nurses helping patients to design self-sustainable plans that include frequent exercise, good diet, smoking cessation	◥ Study resulted in fewer deaths of patients ◥ Cost-effective model that can save lives
54	RNAO. (2008). Briefing note: increasing access to primary health care.	Briefing Note: Improving access to care through interprofessional collaboration and NP-led Clinics	CANADA - ONTARIO	**NP-led Clinics** Primary Care ◥ Improve quality and access to care for individuals with chronic diseases by enhancing chronic disease management programs; creating more opportunities for doctors, nurses and other healthcare providers to work collaboratively and liaise with one another ◥ Focus on investing and expanding the number of nurse practitioner-led clinics in the primary care sector to improve patient access to care	◥ Improving access to care by increasing the number of nurse practitioner positions ◥ Increase funding for chronic disease management programs and clinics in Ontario
55	Ryan, S., Hassel, A.B., Lewis, M., & Farrell A. (2006). Impact of a rheumatology expert nurse on the wellbeing of patients attending a drug monitoring clinic. *Journal of Advanced Nursing, 53*(3), 277-286.	Randomized Controlled Trial Study Nurse-specialist drug monitoring clinic with measureable impact on the well-being of patients with rheumatoid arthritis	UNITED KINGDOM	**Nurse-led** Rheumatology Expert Nurse – Drug Monitoring Clinic ◥ Nurse educates patients on starting arthritic specific medication ◥ Monitors patients for side effects ◥ Provides patients with ongoing support and education	◥ Positive – helped patients to cope with their arthritis; more adherence to medications, improvements in lifestyles ◥ No change – number of consultations or changes in drug therapy

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			NURSE-LED MODELS		
56	Schadewaldt, V. & Schultz, T. (2011). Nurse-led clinics as an effective service for cardiac patients: results from a systematic review. *International Journal of Evidence Based Healthcare, 9*, 199-214.	Systematic Review Review of effectiveness of a Nurse-led clinic for patients with coronary heart disease	GENERAL	**Nurse-led** Coronary Heart Disease ◥ Nurse-led cardiac clinics include patient education, risk factor assessment, continuity of care, counselling behaviour change, promoting healthy lifestyles	◥ Nurse-led care equivalent to non-nurse-managed clinics ◥ Patients did not experience any harmful outcomes ◥ Positive influence on overall quality of life and health status
57	Smeulders, E., Van Haastregt, J., Ambergen, T., Uszko-Lencer, N., Janssen-Boyne, J., & Gorgels, A.(2010) Nurse-led self-management group programme for patients with congestive heart failure: randomized controlled trial. *Journal of Advanced Nursing, 66*(7), 1487–1499.	Randomized Controlled Trial Report Assessing the effects of the Chronic Disease Self-management program (CDSMP) on patients with Chronic Heart Failure	NETHER-LANDS	**Nurse-led** Chronic Disease Management ◥ Focus on skills mastery, interpreting symptoms, behavioral and social changes ◥ Nurses discuss goal-setting and planning with patients	◥ Improved short-term outcomes (cognitive symptom management, self-care behaviour, cardiac-specific quality of life)
58	Sousa, K., & Zunkel, G.M. (2003). Optimizing Mental Health in an Academic Nurse-Manage Clinic. *Journal of the Academy of Nurse Practitioners, 15*(7), 313-318.	Evaluation (Descriptive Survey Design) Mental health outcomes of clinics in an academic nursing clinic	UNITED STATES	**Nurse-led** Mental Health ◥ Helping nurse practitioners with the early detection of mental health disorders so they can create a better care plan for the patient in a more timely way ◥ Nurse practitioner receives help with onsite consultation from a psychiatric clinical nurse specialist	◥ Integration of mental health intervention in primary care settings helps providers to optimize their patients' overall health

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			NURSE-LED MODELS		
59	Stenner K., Carey, N., & Courtenay, M. (2009) Nurse prescribing in dermatology: doctors' and non-prescribing nurses' views. *Journal of Advanced Nursing, 65*(4), 851–859.	Thematic Analysis Exploring nurse prescribing in dermatology	UNITED KINGDOM	**Nurse-led** Dermatology ◥ Case study of nurses prescribing medications in dermatological settings	◥ Patients were positive about their experience but had general reservations about nurse prescribing overall
60	Taylor, C.R., Hepworth, J.T., Buerhaus, P., Dittus, R., & Speroff, T. (2007). Effect of crew resource management on diabetes care and patient outcomes in an inner-city primary care clinic. *Qual Saf Health Care 16*, 244–247.	Time Series Analysis Determining the effectiveness and innovations in chronic disease management involving nurses	UNITED KINGDOM	**Nurse-led** Chronic Disease Management – Chronic Obstructive Pulmonary Disease (COPD) ◥ In the case management program nurses perform at-home visits, telephone follow-ups, and patient education on taking medications and smoking cessation	◥ Nurse-led programs result in fewer hospital admissions and readmissions; should be more widely used; further research required
61	Thompson, K., Parahoo, K., & Blair, N. (2007). A nurse-led smoking cessation clinic – quit rate results and views of participants. *Health Education Journal, 66*(4), 307-322.	Evaluation of a Quantitative and Qualitative Study Evaluating the success of a community nurse-led smoking cessation clinic	NORTHERN IRELAND	**Nurse-led** Smoking cessation ◥ Group therapy approach: nurse would use a combination of directives to promote smoking cessation: group consultation, individuals chats, telephone follow-ups, social support, coping skills, carbon monoxide monitoring ◥ Smokers could be referred to the clinic or come on their own	◥ Almost 30% of participants who attended the 6-week program quit smoking ◥ Weekly carbon monoxide monitoring was a great incentive to quit ◥ Most participants would have liked a program longer than 6 weeks

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			NURSE-LED MODELS		
62	Torrisi, D.L. (2011). A Home Next Door. *Stories from the Field, Nurse-led Medical Homes: Increasing Access to Quality Care*, April, 1-2.	Case Study The first nurse-led federally qualified health centre	United States	**Nurse-led** Primary Care ◥ Integrated behavioural model that allows a therapist to see patients needing extra care for 20-30 minutes up front on each visit ◥ Patients can drop in or get a same-day appointment; 48-hour turnaround time for referrals; shuttle to transport patients with barriers	◥ Patients very satisfied with the care they receive, allowing the program to expand, serving more than 17,000 patients ◥ Nurses find a degree of autonomy and can work in a diverse practice
63	Underwood, J.M., Mowat, D.L., Meagher-Stewart, D.M., Deber, R.B., Baumann, A.O., MacDonald, M.B., & Akhtar-Danesh, N. (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), 1-11.	Synthesis Report (Demographic Analysis) Describe the community health nursing workforce in Canada	CANADA	**Nurse-led** Primary Care ◥ An effective community nurse model includes professional confidence, strong team relationships, a supportive workplace and community support ◥ An environment that supports creative autonomous practice	◥ Factors that contribute to successful public health nursing: sound policy, supportive organizational culture, good management; vision driven by community needs and values; flexibility in funding; clear job descriptions
64	Van Zulien, A.D., Blankesteijn, P.J., Van Buren, M., Ten Dam, M.A.G..J., Kaasjager, K.A.H., Lightenberg, G., & Sijpkens, Y.W.J. (2011). Nurse practitioners improve quality of care in chronic kidney disease: two-year results of a randomised study. *The Journal of Medicine, 69*(11), 517-526.	Randomized Controlled Clinical Trial Study Is the care by NPs more efficient than physicians for patients with chronic kidney disease?	NETHER-LANDS	**Nurse-led** Chronic Kidney Disease ◥ Nurses providing patient education, encouraging lifestyle changes, behavioural changes in diet, increasing the use of vitamins, health promotion; performing routine tests such as blood pressure and lipid	◥ Intervention group led by the nurse practitioner saw a significant increase in blood pressure, lipid and medication control. Increase use of aspirin, vitamin D and ACE inhibitors

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			NURSE-LED MODELS		
65	Watts, S.A., Gee, J., O'day, M.E., Schaub, K., Lawrence, R., & Kirsh, S. (2009). Nurse practitioner-led multidisciplinary teams to improve chronic illness care: The unique strengths of nurse practitioners applied to shared medical appointments/group visits. *Journal of the American Academy of Nurse Practitioners, 21*¸167-172.	Case Studies Examining case studies where NPs play a leadership role; influence of NPs on shared medical appointments for patients with chronic illness	UNITED STATES	**Nurse-led** Chronic Illness Care ◥ Nurse practitioner adhering to Chronic Care Model guidelines (Wagner's Model) ◥ Nurse practitioner participates in educating patient in self-management, offering decision support, helps patient to design a care plan that fits them, offers community resources, keeps track of patient in a registry and notes clinical progress (which methods are working) ◥ Works with physicians, pharmacists, other health professionals	◥ Nurse practitioner provides holistic approach to chronic disease management ◥ Promotes behavioural and health changes in patient
66	Williams, F.L., Beaton, S., Goldstein, P., Mair, F., May, C., & Capewell, S. (2005). Patients' and Nurses' Views of Nurse-Led Heart Failure Clinics in General Practice: *A Qualitative Study. Chronic Illness, 1,* 39-47.	Qualitative Study Nurses' and patients' views and experiences of a nurse-led heart failure clinic	UNITED KINGDOM	**Nurse-led** Cardiovascular Health ◥ Nurses focused on improving nurse-patient communication ◥ Educated patients, increased their knowledge and understanding ◥ Provided self-care advice ◥ Improved patient's understanding of medications	◥ Increased patient's knowledge and understanding of their condition ◥ Some confusion around adhering to medicine and remembering nurse's advice

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			NURSE-LED MODELS		
67	Wong, F. & Chung, L. (2006). Establishing a definition for a nurse-led clinic: structure, process and outcome. *Journal of Advanced Nursing, 53*(3), 358-369.	Exploratory Study Defining a nurse-led clinic through structure, process and outcome	HONG KONG	**Nurse-led** 80% partnered with physician Ambulatory Health ◥ Nurses helped with medication adjustments, initiated therapies, diagnostic tests, performed assessments, health counseling, concentrated on symptom management	◥ High scores of satisfaction from patients; patients in nurse-led wound and continence clinics showed the most improvements
68	Working In Partnership Programme (N/Y). *Nurse-led chronic disease management*, Doncare.	Accredited Review Reducing the workload in general practice by redistributing tasks	UNITED KINGDOM	**Nurse-led** Chronic Disease Management ◥ 4-partner general practitioner practice and a 1-physician general practitioner practice combined their patients to address challenges using a larger support staff ◥ Nurses taking the lead on managing long-term chronic conditions; respiratory clinics, blood pressure control, and others	◥ Decrease in wait times; physicians could extend their appointments with patients ◥ Reduces workload, stress levels, hospital visitations by patients, improve job satisfaction of nurses/doctors

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
CASE MANAGEMENT MODELS					
1	Ciccone, M.M., Aquilino, A., & Cortese, F. (2010). Feasibility and effectiveness of a disease and care management model in the primary health care system for patients with heart failure and diabetes (project Leonardo). *Dove Press Journal: Vascular Health and Risk Management, 6,* 297-305.	Feasibility Study Studying a disease and care management model with "care manager" nurses	ITALY	**Case Management** Chronic Disease Management ◥ Nurse acts as the care manager and is in charge of empowering the patient to manage his/her own health ◥ Nurse provides education on behavioural and lifestyle changes	◥ Patients achieved better control of their disease ◥ Very feasible to incorporate these care managers or specialized nurses to support general practitioners
2	Freund, T., Kayling, F., Miksch, A., Szecsenyi, J., & Wensing, M. (2010). Effectiveness and efficiency of primary care based case management for chronic diseases: rationale and design of a systematic review and meta-analysis of randomized and non-randomized trials. *BMC Health Services Research, 10*(112), 1-4.	Systematic Review (protocol) Importance of case management for chronically ill patients	GENERAL	**Case Management** Case management usually addresses elements of the chronic care model ◥ Provides continuity of care in thedelivery system, enhancing patients' self-management skills; contributes to better evidence-based recommendations such as diagnosis, pharmaceutical treatment, lifestyle counselling, patient monitoring	◥ Since most chronically ill patients receive medical care in primary care settings, this is where case management programs are mostly implemented ◥ Expected outcome: reduction of health resource use by enhancing patient self-mastery, medication adherence, and medication/ patient monitoring
3	Giddens, J.F., Tanner, E., Frey, K., Reider, L., & Boult, C. (2009). Expanding the gerontological nursing role in guided care. *National Gerontological Nursing Association, 30*(5), 358-364.	Pilot Study One year Pilot Study examining the Guided Care Nurse role in the Guided care Model	UNITED STATES	**Case Management** Guided Care Model Primary Care – Gerontology ◥ Nurse collaborates with primary care providers, patients/caregivers, health agencies ◥ In charge of 50-60 patients ◥ Nurse helps with assessments, creating an evidence-based care plan; performs follow-ups and care coordination ◥ Facilitates access to care, transportation, meals, home modification resources	◥ Guided Care Model results in fewer hospital admissions; family/ caregivers feel less burdened

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
CASE MANAGEMENT MODELS					
4	Larsson, M., Hedelin, B. & Athlin, E. (2007). A Supportive Nursing Care Clinic: Conceptions of Patients with Head and Neck Cancer. *European Journal of Oncology Nursing, 11*, 49-59.	Qualitative Study (Phenomenogra-phic Approach) Describes how cancer patients with eating problems receive support in a nursing clinic, before, during and after radiotherapy	SWEDEN	**Case Management** Cancer Care ◥ The nursing care clinic was complementary to the regular care and participation was voluntary ◥ The focus of the care at this clinic was the patients' needs of nutritional care, symptom control, and social and emotional support	◥ Treatment was most valuable during the periods before and after completion of the treatment
5	Norris, S.L., Nichols, J.P., Caspersen, C.J., Glasgow, R.E., Engelgau, M.M., Leonard, J.J., & Isham, G. (2002). The Effectiveness of Disease and Case Management for People with Diabetes. *American Journal of Preventative Medicine, 22*(4S), 15-38.	Systematic Review Effectiveness/ economic efficiency of case/disease management for people with diabetes	GENERAL	**Case Management** ◥ Patient receives counselling, additional health education, reminders and support interventions (community or healthcare) for disease management and case management when necessary	◥ Improving patient glycemic control and monitoring of glycemic control by the healthcare provider ◥ Effective with or without disease management but in conjunction with one or more education, reminder of support intervention
6	Van Der Sluis, C.K., Datema, L., Saan, I., Stant, D., & Dijkstra, P.U. (2008). Effects of a nurse practitioner on a multidisciplinary consultation team. *Journal of Advanced Nursing, 65*(3), 625-633.	Time Series Analysis What are the effects of an NP on a multidisciplinary team for patients with rheumatoid arthritis; comparison of an intervention and control group using a time series design	NETHER-LANDS	**Case Management** Rheumatology/Arthritis ◥ Team consisted of a rheumatologist, rehabilitation physician, plastic surgeon, occupational therapist ◥ NP gathered patient data, did a preliminary assessment, coordinated surgery and acted as the case manager	◥ Improved wait times, patient satisfaction levels, and organization of the office

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
PATIENT NAVIGATION MODELS					
1	Campbell, C., Craig, J., Eggert, J., & Bailey-Dorton, C. (2010). Implementing and measuring the impact of patient navigation at a comprehensive community cancer centre. *Oncology Nursing Forum, 37*(1), 61-68.	Program Evaluation Are patients more satisfied with patient navigation in Community Cancer Centres	UNITED STATES	**Patient Navigation** Cancer Care ◥ Nurse navigator caring for patient from diagnosis to end of treatment	◥ Survey showed improvements in patient satisfaction of care ◥ Staff satisfied with patient-navigated care
2	Cancer Care Ontario. (2010). Oncology Nursing Program Newsletter. *Oncology Nursing Program*. Toronto: Ontario, 1-6, Retrieved from: www.cancercare.on.ca.	Newsletter	CANADA ONTARIO	**Patient Navigation** Oncology ◥ Overview of CCO Patient Navigation pilot program. Course developed with de Souza Institute covers communication, assessment, screening for distress, culture and diversity, social support, and community resources. Based on Supportive Care Model (Fitch, 2000) and the Social Cognitive Transitional Model of Adjustment (Brennan, 2005).	◥ No outcomes discussed
3	Carroll, J.K., Humiston, S.G., Meldrum, S.C., Salamone, C.M., Jean-Pierre, P., Epstein, R.M., & Fiscella, K. (2009). Patients' experiences with navigation for cancer care. *Patient Education and Counseling, 80*, 241-247.	Randomized Controlled Trial Patient experiences with patient navigation	UNITED STATES	**Patient Navigation** Cancer Care ◥ Nurse navigator works with patients with abnormal breast/ colorectal cancer from diagnosis to end of treatment	◥ Patients receiving navigation experience less isolation; understand the information process better; diagnosis/ treatment options ◥ Patients prefer not to have male patient navigators for breast cancer cases

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PATIENT NAVIGATION MODELS					
4	Ell, K., Vourlekis, B., Lee, P-J., & Xie, B. (2006). Patient navigation and case management following an abnormal mammogram: a randomized clinical trial. *Preventative Medicine, 44*, 26-33.	Randomized Controlled Trial	UNITED STATES	**Patient Navigation and Case Management** Low income, ethic women – keeping appointments for mammograms ◥ Screening Adherence Follow up (SAFe) model was used: structured telephone-based, patient-centred adherence risk assessment, education, counselling, navigation assistance, tracking, reminders and referrals to community resources; assessment of barriers; use of clinical algorithm to assign service levels	◥ Significant increase in adherence to appointments ◥ Adherence varied with level of intensity of intervention
5	Ferrante J.M., Chen P.H. & Kim S. (2007). The effect of patient navigation on time to diagnosis, anxiety and satisfaction in urban minority women with abnormal mammograms: a randomized controlled trial. *Journal of Urban Health, 85*, 114–124.	Randomized Controlled Trail		**Patient Navigation** Follow up with abnormal mammograms – improve timeliness to diagnosis and patient satisfaction ◥ Navigation – meeting specific needs of women – emotional and social support, making appointments, being prepared for appointment, application for financial assistance, linking to resources and support systems, facilitating interactions and communication with healthcare staff and providers	◥ Significant positive findings – improvements in time to diagnosis, decreased anxiety and increased satisfaction

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PATIENT NAVIGATION MODELS					
6	Gilbert, J.E., Green, E., Lankshear, S., Hughes, E., Burkoski, V., & Sawka, C. (2010). Nurses as patient navigators in cancer diagnosis: review, consultation and model design. *European Journal of Cancer Care, 20*, 228-236.	Literature Review (Synthesis)	GENERAL - CANADA	**Patient Navigator** Cancer Care ◥ Nurse assists patients through the diagnostic phase of cancer ◥ Nurse exposes patient to various healthcare supports; communicates with physicians and oncologists ◥ Nurse takes part in multidisciplinary case conferences on the patient in question	◥ Diagnosis time is reduced with an increase in follow-ups; shorter wait times; hospital stays ◥ Physician has more time to focus on complex cases and patient anxiety is reduced ◥ Care is more coordinated, organized; patient is better informed and care plan expedited
7	Guadagnolo, B.A., Cina, K., Koop, D., Brunette, D., & Petereit, D.G. (2011). A pre-post survey analysis of satisfaction with health care and medical mistrust after patient navigation for American Indian cancer patients. *Journal of Health care for the Poor and Underserved, 22*, 1331-1343.	Pre-Post Cohort Study Survey Patient navigation satisfaction among American Indian cancer patients	UNITED STATES	**Patient Navigation** American Indian cancer patients ◥ Nurses receiving specific education in nurse navigation; culturally trained ◥ Focus on reducing barriers and access to care for vulnerable populations	◥ Improved satisfaction of patients after receiving patient navigation ◥ No significant improvements in mistrust, but high satisfaction rates of patients during cancer treatment

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PATIENT NAVIGATION MODELS					
8	Manderson, B., McMurray, J., Piraino, E., & Stolee, P. (2012). Navigation Roles Support Chronically Ill Older Adults through Healthcare Transitions: A Systematic Review of the Literature. *Health and Social Care in the Community, 20*(2), 113-127.	Systematic Review Avoiding too many healthcare transitions which usually results in fragmented care; case in point chronically ill older adults	GENERAL	**Patient Navigation** ◥ Role of a navigator for the chronically ill older person is a relatively new one; includes the creation of patient-provider care plans and treatment goals ◥ Most studies focused on hospital-home transitions for patients (discharge planning) ◥ Patient navigation included phone support, home visits, patient education, access to community services	◥ Various based on study/context ◥ Positive: improvements in caregiver and patient communication, self-management techniques, adherence to medications, decrease in ER use, improved mental health, more community referrals ◥ Negative: discontinuity of care, (lack of transition) for chronically ill older adults, especially those with multiple chronic diseases; too many hospital admissions
9	Nguyen, T. & Kagawa-Singer, M. (2008). Overcoming Barriers to Cancer Care Through Health Navigation Problems. *Seminars in Oncology Nursing, 24*(4), 270-278.	Overview of Theoretical Concepts Theoretical concepts in community based culturally tailored health navigation	UNITED STATES	**Patient Navigator** Community Navigator or Lay Health Cancer Care ◥ Community Navigators assist with tasks such as scheduling appointments, providing transportation, coordinating care, ensuring follow-ups are in place, arranging financial support, community outreach	◥ Nurses need to be more proactive in delivering care that is culturally sensitive, community based

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PATIENT NAVIGATION MODELS					
10	Pedersen, A., & Hack, T. (2010). Pilots of Oncology Health Care: A Concept Analysis of the Patient Navigator Role. *Oncology Nursing Forum, 37*(1), 55-60.	Concept Analysis Role of patient navigator in oncology	UNITED STATES	**Patient Navigation** Cancer Care ◥ Role of the Patient Navigator (PN): Facilitates access to care, provides education, links to resources, reduces barriers such as language/ cultural/ transportation issues	◥ Families receive access to health resources in a timely manner ◥ Patients feel more empowered through education sessions ◥ PNs are well trained in the cancer system, alleviating patient insecurities
11	Psooy, Brian, Schreuer, J., Borgaonkar, D., Caines, J. & Judy, S. (2004). Patient Navigation: Improving Timeliness in the Diagnosis of Breast Abnormalities. *Canadian Association of Radiologists Journal, 55*(3), 145-150.	Retrospective Cohort Study Research study determining the impact of patient navigation and timeliness when diagnosing breast abnormalities	CANADA - NOVA SCOTIA	**Patient Navigation** Breast Cancer ◥ Patient navigator contacts the physician directly when a breast lesion requiring further investigation occurs ◥ Patient navigator will book a diagnostic imaging or core needle biopsy appointment ◥ Early notification allows the physician time to contact the patient in advance and provide surgical consultation if needed ◥ Cases are followed diligently to ensure that patients do not lose out on follow-ups ◥ The patient navigator will minimize patient anxiety and there is minimal interference with patient or physician autonomy	◥ Positive results resulting in a decrease in wait-times from 20 to 14 days ◥ Potentially improve quality of life for patients with benign conditions and provide earlier treatment for those with malignant cases

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PATIENT NAVIGATION MODELS					
12	Wells, K.J., Meade, .C.D., & Calcano, E. (2011). Innovative Approaches to Reducing Cancer Health Disparities. *Journal of Cancer Education, 26*, 649-657.	Randomized Controlled Trial (Cohort Study Design) Efficacy in patient navigation in reducing screening delays	UNITED STATES	**Patient Navigation** Cancer Care ◥ An acceptable patient navigation program was designed; a randomized control trial evaluated the program; dissemination of the research findings determined if patient navigation reduced screening delays ◥ Practice Nurses (PNs) receive training in diagnostic and treatment for breast/colorectal cancer ◥ PNs assist with removing patient barriers: translation, interpretation, paperwork, hospice services	◥ Need for new materials surfaced due to patient language barriers; creation of "instructions for a colonoscopy preparation" ◥ No conclusive results yet on whether patient navigation reduces screening delays ◥ Outcome results were not available – study in progress
13	White, S. R., Conroy, B., Slavish, K.H., & Rosenzweig, M. (2010). Patient Navigation in Breast Cancer. *Cancer Nursing, 33*(2), 127-140.	Systematic Review Evaluating patient navigation in breast cancer care	GENERAL	**Patient Navigation** Breast Cancer ◥ Patient Navigation Model – some models include social workers and lay-health persons ◥ Focus on reducing diagnosis time, addressing linguistic, social, cultural, economic barriers, community outreach, improve screening rates	◥ Patient navigation improved adherence to breast cancer care; screening, diagnosis, treatment

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			SHARED CARE MODELS		
1	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.	Case Study Utilization of the nursing workforce and the nursing role	CANADA - GENERAL	**Shared Care** Primary care ◥ Family physician (FP) and registered nurse (RN) working in collaboration to maximize the need and care of patients ◥ Decrease role ambiguity ◥ Increase trustworthiness between the FP and RN	◥ Improved wait times, patient access to care ◥ Continuing education incentives for RNs to increase levels of trust
2	Allen, J K., Dennison, C.R., Himmelfarb, D., Szanton, S.L., Bone, L., Hill, M.N., & Levine, D.M. (2011). Coach Trial: A randomized controlled trial of nurse practitioner/ community health worker cardiovascular disease risk reduction in urban community health centers: Rationale and design. *Contemporary Clinical Trials, 32*, 403-411.	Case Study Cardiovascular Health Trial in federally qualified community health centres	UNITED STATES	**Shared Care** (NP and CHW) Cardiovascular Disease ◥ Focus on nurse case managers and community health workers to being effective therapy strategies to poorly funded health centres ◥ Focus on patient education, counselling and telephone follow-ups to increase patient adherence	◥ Nurses and community health workers develop strong relationships with patients ◥ Provide healthcare services to the underserved where traditional outreach strategies fail
3	Beaulieu, M.D. (2007). Family practice Teams: Professional Role Identity. *Introduction to the Session, Overview of the Literature: Health Canada FMF* Session. Power Point Slides, 1-89.	Presentations of several authors	CANADA	**Shared Care and Interprofessional Team** General ◥ Overview of family practice in Canada; Nova Scotia survey with family practice nurses; access to primary care; quality indicators	◥ No specific outcomes; factors for successful teams discussed

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SHARED CARE MODELS					
4	Brown, J.B., Smith, C., Stewart, M., Trim, K., Freeman, T., Beckhoff, C., & Kasperski, J.M. (2009). Level of acceptance of different models of maternity care. *The Canadian Nurse, 105*(1), 19-23.	Cross-Sectional Survey Examining five proposed maternity models	CANADA - ONTARIO	**Shared Care** Maternity Care A: Labour and delivery care for physician's patients B: Labour and delivery care for physicians' and midwives' patients C: Labour and delivery care for physicians patients, partnering with midwives D: Labour and delivery care for physicians patients and assisting midwives at birth E: Interprofessional clinic setting	◥ Preferred method of the 730 nurses that were surveyed was the first one (44.8% approval) ◥ Nurses were weary of collaborating with midwives; expressing resistance to change and lack of communication that would prevent an IP setting ◥ If the IP model was guided by nurses and emphasized role clarity, then nurses would be more willing to implement it
5	Ely, D.S., Del-Mar C.B., & Patterson, E. (2008). A Nurse-Led Model of Chronic Disease Care – An Interim Report. *Australian Family Physician, 37*(12), 1030-1032.	Interim Report - qualitative Investigating a nurse-led chronic condition model; its cost, effectiveness, and feasibility	AUSTRALIA	**Shared Care** ◥ The nurse works in partnership with the GP and each patient is reviewed on a 6-month basis by the GP and the practice nurse	◥ Increased efficiency and communication ◥ Increased attention to detail and systematic care ◥ Relationships between the nurse and patients were strengthened; patients more willing to voice their concerns ◥ Follow-ups with patients were more consistent and completed within appropriate time frames ◥ Patients became more motivated and responsive to chronic disease management care

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			SHARED CARE MODELS		
6	Griffiths, C., Miles, K., Aldam, D., Cornforth, D., Minton, J., Edwards, S., & Williams, I. (2007). A nurse-pharmacist-led treatment advice clinic for patients attending an HIV o outpatient clinic. *Journal of Advanced Nursing, 54*(5), 320-326.	Qualitative Study Can different treatment advisors improve adherence to HIV treatment	UNITED KINGDOM	**Shared Care** HIV Clinic 2 research nurses and pharmacist: HIV Outpatient clinic ◥ Worked in a treatment advisory clinic (TAC) to increase patient knowledge surrounding HIV and the HAART (highly active antiviral therapy) to help with patient decision-making and long-term adherence to the therapy	◥ Telephone support increased patient adherence
7	Hickman, M., Drummond, N., & Grimshaw, J. (1994). A Taxonomy of Shared Care for Chronic Disease. *Journal of Public Health Medicine, 16*(4), 447-454.	Two-Phase Postal Questionnaire Survey Creating a composition of shared-care approaches to address areas of chronic disease	UNITED KINGDOM	**Shared Care** Shared Care was classified into 6 models: 1. Community clinics 2. Exchange of letters/record sheets 3. Liaison between hospital team and GP 4. Computer assisted shared care (GP and hospital specialist) 5. Shared care record cards (patient is given booklets) 6. Electronic mail (GP and hospital specialist)	◥ Taxonomy offers choice to healthcare workers wishing to integrate/develop shred care ◥ Positive: shared care is approved by patients and GPs, just as effective as out-patient care; cost-effective; patients receive specialized advice

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SHARED CARE MODELS					
8	Kelly, B., Perkins, D.A., Fuller, J.D., Parker, S.M. (2011). Shared care in mental illness: A rapid review to inform implementation. *International Journal of Mental Health Systems, 5*(31), 1-12.	Rapid Review Examining evidence of shared care models of ambulatory mental health services	GENERAL	**Shared Care** Mental Health Effective shared care models included: ◥ Cross organizational commitment; carefully designed and delivered interventions; attention to staff training and selection; links across service levels; clinical monitoring, agreed treatment protocols; comprehensive services	* Depends on clinical setting ◥ Positive: improved social function, self-management skills, service acceptability reduced hospitalization, improved access to specialist care, better engagement and acceptability of mental health services ◥ Significant set-up costs, reduced patient costs, service savings in the long-run
9	Lawn, S. & Lawton, K. (2011). Chronic condition self-management support within a respiratory nursing service. *Journal of Nursing and Healthcare of Chronic Illness, 3*, 372-380.	Evaluative Study Examining an innovative chronic condition self-management support programme	AUSTRALIA	**Shared Care** Chronic Obstructive Pulmonary Disease ◥ Nurses played a central role in creating a more coordinated service for patients with COPD across the inpatient/community continuum ◥ Model brought together two respiratory nurses (RNs) and one Respiratory Chronic Disease Nurse (RCDN) ◥ Goal was to increase patient self-management techniques and education on respiratory conditions, devises, at-home oxygen use, (respiratory nurses dealing with more complex cases, and RCDNs with less complex ones)	◥ Improved patient education (more patients understanding what to do when an exacerbation occurs, not always necessary to admit oneself to hospital or use their emergency pack; development of better information sheets ◥ Study showed a lack of community providers practising chronic disease support; barrier for full integration of chronic care into the community as planned

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			SHARED CARE MODELS		
10	MacLeod, A., Branch, A., Cassidy, J., McDonald, A., Mohammed, N. & MacDonald, L. (2007). A nurse-/pharmacy-led capecitabine clinic for colorectal cancer: Results of a prospective audit and retrospective survey of patient experiences. *Journal of Oncology Nursing, 11*, 247-254.	Prospective Audit and Retrospective Survey Reducing toxicities in colorectal cancer patients through education and support	UNITED KINGDOM	**Shared Care** Colorectal Cancer Nurse-Pharmacy ◥ Patients were seen by either the nurse or the pharmacist; were provided verbal/written information regarding dosages, side effects, storage, food/drug interactions ◥ Emphasis on education and patients being able to recognize grade 2 toxicities in therapy	◥ All of the patients who responded in the study reported satisfaction ◥ Satisfied with treatment explanations and clinic experience
11	McCann, T.V. & Baker, H. (2003). Models of mental health nurse–general practitioner liaison: promoting continuity of care. *Journal of Advanced Nursing, 41*(5), 471–479.	Qualitative Study Identify models of GP collaboration and mental health nurses	AUSTRALIA	**Shared Care** Mental Health GP and Nurse ◥ Shared Care Model: Nurse maintains close contact with GP (General Practitioner) and is the case manager; decisions are made jointly ◥ Specialist Liaison Model: Community mental health team assumes overall responsibility of care and treatment, contact with GP is intermittent	◥ Shared care model is more consistent with supporting personal and organizational continuity of care; Specialist Model limited to personal continuity
12	Retchin, S.M. (2008). A conceptual framework for interprofessional and co-managed care. *Academic Medicine, 83*(10), 929-933.	Conceptual Framework Implications of IP care Models on practice and curricula changes	UNITED STATES	**Shared Care** Primary Care – Geriatrics, Mental Health ◥ Co-managed care system; NP or physician assistant co-manage the care and condition of the patient ◥ Less burden on the physician	◥ Reduces redundancy of tasks ◥ Less fragmentation in patient care

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SHARED CARE MODELS					
13	Science-In-Brief. (2011). Synopsis: community outreach and cardiovascular health (COACH) trial.	Synopsis of the COACH Trial (Community Outreach and Cardiovascular Trial)	UNITED STATES	**Shared Care** Chronic Disease Management ▸ Nurse practitioner and community health worker work together – COACH model, to control cholesterol/BP management of patients	▸ Underserved populations benefit from this model; mutual goal-setting; shared decision- making; encouraged self-monitoring and tracking of progress
14	Wilson, C. (2009). Nurse-Managed Free Clinic Fosters Care Connection for Homeless Population. *Rehabilitation Nursing, 34*(3), 105-9.	Qualitative Study Twelve years of observations at a nurse-managed health centre; improving care delivery for disenfranchised populations	UNITED STATES	**Shared Care** Addiction/Rehabilitation ▸ Nurse and social worker – examples of nurse-managed clinics ▸ Nurse provides psychiatric assessments, counselling, HIV/TB testing, health education addiction and social services ▸ Focus on developing collaborative relationships between nurses and patients	▸ Very popular clinic; 4,000 encounters per year/380 people per month ▸ Negative to positive perceptions of homelessness due to one-one interactions by care providers

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OTHER MODELS OR PAPERS RELATED TO MODELS IN GENERAL					
1	Barlow, J., Wright, C., Sheasby, J., Turner, A., & Hainsworth, J. (2002). Self-management approaches for people with chronic conditions: a review. *Patient Education and Counselling, 48*, 177-187.	Literature Review Overview of self-management approaches for persons with chronic conditions	GENERAL	**Other** Chronic Conditions Self-Management Approaches ◥ Group approach: combination of group/individual counselling with a nurse, telephone chats, consultations, take-home materials such as movies, booklets, audio tapes ◥ Individual approach: one-on-one sessions with a nurse, take-home materials to study/read ◥ Combination: individual sessions, group sessions, take-home work/materials	◥ Multi-component programs are considered the "best package" for self-management ◥ Benefits to patients include knowledge-gain, behavioural improvements in self-efficacy and overall health
2	Bodenheimer, T., Lorig, K., Holman, H., & Grumbach, K. 2002. Patient Self-management of Chronic Disease in Primary Care. *Journal of the American Medical Association, 288*(19), 2469-2475.	Comparative Study The difference between collaborative care and self-management education	UNITED STATES	**Self-Management** Primary Care – Chronic Disease ◥ Strong focus on patient education; providing a plan that allows patient to problem-solve their chronic condition	◥ Improved patient self-efficacy improves clinical outcomes ◥ Patient becomes more independent and empowered; knowledge to identify and solve chronic issues ◥ Apply problem-solving techniques to 3 areas of patient's life: medical, social, emotional
3	Bonsal, K., & Cheater, F.M. (2008). What is the impact of advanced primary care nursing roles on patients, nurses, and their colleagues – A literature review. *International Journal of Nursing Studies, 45*, 1090-1102.	Literature Review Assessing the impact of advanced primary care nursing roles on the patients, nurses, and their colleagues	GENERAL	**Various Models** Primary Care ◥ Advanced Practice Nurse provides "first contact care" ◥ Helps with diagnosis, treatment, referrals, health promotion, preventative care	◥ Patients who have nurses as their first point of contact tend to experience higher levels of satisfaction

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OTHER MODELS OR PAPERS RELATED TO MODELS IN GENERAL					
4	Canadian Nurses Association. (2008). Advanced Nursing Practice: A National Framework. *Canadian Nurses Association, Ottawa, ON.* Available at: www.can-aiic.ca.	Framework to promote a common understanding of Advanced Nursing Practice (ANP)	CANADA	**Other** Nursing Framework Primary Care ◥ Only two Advanced Nursing Practice roles are recognized in Canada; Clinical Nurse Specialist, (provide expert nursing care for specialized populations, promotes the use of evidence); and Nurse Practitioner (provides direct care focusing on health promotion, treatment/management of chronic conditions, autonomy to diagnose, order, interpret tests and prescribe medications)	◥ Why Advanced Nursing Practice? ◥ Improved client outcomes; quality of life, satisfaction of care, cost efficiency; Decrease ER visits; ER stays; fewer readmissions; allows nurses to work at advanced levels of clinical practice
5	De Guzman, A., Ciliska, D., & DiCenso, A. (2010). Nurse practitioner role implementation in Ontario public health units. Canadian *Journal of Public Health, 101*(4), 309-313.	Descriptive Study How to integrate NPs into Public Health Units, understand barriers, measure NP satisfaction	CANADA - ONTARIO	**Other** Public Health Units (PHU) Primary Care ◥ About 6% of NPs working in Ontario work with PHUs ◥ Responsibilities include performing diagnostic tests, interpreting the tests, prescribing pharmaceuticals, monitoring managing chronic diseases, treating acute, minor illnesses and performing Pap tests if specified by the PHU	◥ No clinical outcomes ◥ Survey revealed that physicians and health providers had trouble defining and understanding the nurse practitioner role; lack of staff to supplement the work of the nurse practitioners if they were away; specialists hesitant to take referrals from nurse practitioners ◥ If nurse practitioners are going to be a permanent part of public health units, then improving role integration through education and training is required

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OTHER MODELS OR PAPERS RELATED TO MODELS IN GENERAL					
6	DiCenso, A., & Bryant-Lukosius, D. (2010). The Long and Winding Road: Integration of Nurse Practitioners and Clinical Nurse Specialists into the Canadian Healthcare System. *CJRN, 42*(2), 3-8.	Editorial	CANADA	**Other – Role Development** ◥ Special issue focusing on Canadian experiences – each paper reports part of a broader scoping review and findings from key informants	◥ No outcomes
7	Donald, F., Martin-Misener, R., Bryant-Lukosius, D., Kilpatrick, K., Kaasalainen, S., & Carter, N. (2010). The Primary Healthcare Nurse Practitioner Role in Canada. *Nursing Leadership, 23*, 88-113.	Literature Review (Synthesis) Develop a better understanding of Advanced Nursing Practice Roles	CANADA - GENERAL	**Other** Role of the PHCNP (Primary Healthcare Nurse Practitioner) in Canada PHCNPs have the authorization to carry out the following: make and communicate a diagnosis of disease; order and interpret diagnostic and screening tests; prescribe medications * In Quebec, establishing a primary diagnosis remain the exclusive domain of the physician	◥ Added costs and inefficiencies in system delivery when nurse practitioners wait for physicians to sign a prescription or request a test
8	El-Jardali, F., & Lavis, J.N. (2011). Addressing the Integration of Nurse Practitioners in Primary Healthcare Settings in Canada. *Hamilton, Canada: McMaster Health Forum*, 1-30.	Report – Issue Brief	CANADA	**Other** ◥ Problem: chronic disease management; optimal use of nurse practitioners ◥ Launch multi-stakeholder planning initiative to address issue of integration of nurse practitioners in PHC settings in Canada ◥ Support consistency in educational and regulatory standards, requirements and processes (standards) for nurse practitioners across the country ◥ Launch information/education campaign on innovations that could meet needs of patients in primary care ◥ Biggest barriers – support of physicians and organized medicine	◥ Not applicable

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OTHER MODELS OR PAPERS RELATED TO MODELS IN GENERAL					
9	Hutchison, B., Abelson, J., & Lavis, J. (2011). Primary Care in Canada: So Much Innovation, So Little Change. *Health Affairs, 20*(3), 116-131.	Discussion Paper Focus on policy	CANADA	**Other** ◥ Policies create path dependencies that are difficult to shift due to cost, change requirements, supports ◥ Policies: federal/provincial division of powers; private practice but public funding (FFS, clinical autonomy and control including location of practices); privileging physicians and hospitals ◥ Innovations ◥ 1st wave (1970s) – alternate payments e.g. CHCs (global), HSO (capitation), CSLC (hybrid); boards (CHCs, CSLC) ◥ 2nd wave (mid '80s) – support for alternate non-physician providers in primary care (midwives, NPs) – results not until '90s ◥ 3rd wave (mid '90s) – reform; demonstration projects	◥ Lessons ◥ Big bang or transformation may not be possible ◥ Accept a pluralism of models ◥ Blended funding models – addresses issue of resistance ◥ Need for significant investments in primary care

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
OTHER MODELS OR PAPERS RELATED TO MODELS IN GENERAL					
10	Kendall, S., Wilson, P., Procter, S., Brooks, F., Bunn, F., Gage, H., & McNeilly, E. (2010). *The Nursing Contribution to Chronic Disease Management: A Whole Systems Approach*. National Institute for Health Research-SDO Project, 1-7.	Evaluative Case Study Explore, identify and characterize effective Chronic Disease Management models	UNITED KINGDOM	**Various Models** Chronic Disease Management (Whole Systems Approach, Public Health Model, Primary Care Model, Community Matrons Model) **Whole Systems Approach:** Based on chronic disease management model (causal systems, data systems, patient experience) **Public Health:** School nurses provide a vision for asthma care; focus on awareness and prevention **Primary Care Model:** General practitioner provides care and follow up **Nurse Specialist Model:** Focuses on self-management **Community Matron Model:** Top-down approach, first point of contact	◥ Specialist models reduce hospitalizations and readmissions ◥ Further education of the public is required; changing perceptions of traditional nursing roles and scope

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
OTHER MODELS OR PAPERS RELATED TO MODELS IN GENERAL					
11	Koren, I., Mian, O., & Rukholm, E. (2010). Integration of Nurse Practitioners into Ontario's Primary Healthcare System: Variations Across Practice Settings. *CJNR, 42*(2), 48-69.	Exploratory study Tracking survey of NPs – differences in education, employment, IPC	CANADA – ONTARIO	**Other** **Education:** 22% had Master's; 70% had COUPN certificate; slightly higher education in hospital NPs **Geography:** PHC nurse practitioner highest % in North-East LHIN (14%), then Champlain LHIN (11%) and Toronto Central (11); 40% work in rural, remote, small towns **Practice Settings:** CHCs (32%), physicians' offices (23%), FHTs (15%), hospitals (12%), NP-led clinics (3%), and other practice settings (15%), which included mental health clinics, Aboriginal health access centres, nursing stations, university or college health services, long-term care facilities, public health units, health services organizations, and military **Experience:** Average 17 years as a registered nurse; 5.9 years as a nurse practitioner; 4.1 years as PHNP in current position; CHC had longer years of experience; most nurse practitioners working in hospital were full time; 25% of CHCNPs worked part time	◥ Not applicable

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
OTHER MODELS OR PAPERS RELATED TO MODELS IN GENERAL					
12	Martin-Misener, R. (2010). Will Nurse Practitioners Achieve Full Integration into the Healthcare System? *CJNR, 42*(2), 9-16.	Discussion Paper	CANADA	**Other** Barriers ◥ Legislation, regulation – strengthen credibility and workforce mobility in Canada; policies and acts in relation to diagnostic tests, prescribing; vital statistics acts – death, motor vehicle license, etc. ◥ Need for pan-Canadian standards on education beyond consensus on Master's level graduation for NPs ◥ Practice – need sufficient supply; incompatibility with physician fee-for-service models	◥ Not applicable
13	Morgan, P., & Strand De Oliveira, J. (2011). Physician assistants and nurse practitioners: a missing component in state workforce assessments. *Journal of Interprofessional Care, 25*, 252–257.	Assessments of state workforces Examining the recent treatment and best practices of Physician Assistants and Nurse Practitioners in state workforces	UNITED STATES	**Other** Primary Care ◥ Increasing the number of Nurse Practitioners (NPs) and Physician Assistants (PAs) to address lack of physician gaps ◥ Improve access to care because many of their duties overlap with the physicians'	◥ No clinical outcomes ◥ States should provide specific census data to pinpoint areas where additional support from PAs and NPs may be required

#	Reference (Alphabetical)	Type of Report/Paper	Location	Description of Model	Outcomes
OTHER MODELS OR PAPERS RELATED TO MODELS IN GENERAL					
14	Rout, A., Ashby, S., Maslin-Prothero, S., Masterson, A., Priest, H., & Beach, M. (2010). A literature review of interprofessional working and intermediate care in the UK. *Journal of Clinical Nursing, 20*, 775–783.	Literature Review Research available on intermediate care, and which interventions were used to develop IP working in intermediate care	GENERAL	**Various Models** Intermediate Care No clear discussion of models – more the factors that support the use of intermediate care ◥ Nurse-led units function successfully as a form of intermediate care; no adverse outcomes from patients receiving less routine care	◥ Need for a new layer of care between primary care and specialist services to help prevent unnecessary hospitalizations; support early discharge, reduce/delay long-care residence
15	Stevenson, L., & Sawchenko, L. (2010). Commentary. *CJNR, 42*(2), 17-18.	Commentary	CANADA	**Other** ◥ Barriers: nurse practitioner scope of practice overlaps with physicians – creates tension; non-sustainable funding models; legislation, regulation and education; willingness to collaborate	◥ Not applicable
16	Tomblin Murphy Consulting Incorporated. (2005a). Health human resource component: Literature review report. Health human resource planning: Modeling activities for primary health care nurse practitioners. Ottawa, ON: *Canadian Nurses Association & Canadian Nurse Practitioner Initiative*. Retrieved from: http://206.191.29.104/ documents/ pdf/ tech-report/ section4/03_HHR_ AppendixB.pdf.	Literature Review	GENERAL	**Other** Human Resource Planning ◥ Minimal planning in PHCNP education, deployment and employment	◥ Not applicable

APPENDIX C: CASE STUDY – INTERPROFESSIONAL MODEL OF CARE

Alberta Primary Care Network (PCN)

Headline: Do you know what your nurses at the Primary Care Network can do for you?

The Challenge: Why establish Primary Care Networks?

Primary Care Networks (PCNs) in Alberta have been established in response to a number of concerns.

- Many Albertans do not have access to primary care.
- There are increasing demands for effective management of chronic diseases, such as diabetes, as well as a need for strategies to manage complex needs of patients with multiple diagnoses, poverty, substance abuse, and challenging family relationships.
- Primary care nursing roles are not fully optimized to meet the needs of the population.
- There is a need to address the comprehensive needs of patients, including a focus on the social determinants of health.

Potential benefits of PCNs

It is anticipated that PCNs, when successfully implemented, will:

- Increase Albertans' access to primary care.
- Improve interprofessional collaboration.
- Improve coordination of primary care with other healthcare sectors.
- Improve care through proactive planning and links to supports (housing, nutrition and comprehensive care) in a timely manner.
- Increase emphasis on health promotion, disease and injury prevention, and attention to chronic disease management.
- Reduce hospitalization.
- Help the patient navigate through the health and social systems, so that they don't fall through health system gaps.

About Primary Care Networks: History, purpose and scope

- PCNs are funded by the Alberta provincial government through its Primary Care Initiative. Under the PCN model, groups of family physicians in local communities come together and voluntarily partner with Alberta Health Services to establish a PCN.
- The physicians receive $50 per patient, per year, from Alberta Health and Wellness (AHW). Physicians also continue to receive fee-for-service or other payments through alternate payment mechanisms.
- The per-capita funds can be used to hire nurses and other healthcare providers, and also to provide patient education or other programs. Under the model, family physicians, family health nurses and other health professionals work together as a multi-disciplinary team.
- The Primary Care Initiative was initially established in 2003, led by three organizations: Alberta Health Services (previously Alberta Regional Health Authorities); the Alberta Medical Association; and Alberta Health and Wellness (government department). A central Project Management Office

(PMO) was established to assist interested groups of physicians in submitting their letters of intent.

- A detailed set of tools was developed to support the development of the PCNs. For example, once a letter of intent was reviewed and approved by the Primary Care Initiative, the PMO team worked closely with the applicant group to develop operational and business plans. An important component of the planning and implementation process was to ensure that the PCN reflected local needs, context and partners.

The role of nurses in PCNs

Nurses play generalist and specialist roles in PCNs. As an example, here are some of the roles undertaken by nurses at the Red Deer PCN.

- Family nurses who are registered nurses provide counseling, patient education and navigation support. The PCN offers diabetes education, education related to high blood pressure, and education for moms and new moms.
- Doctors refer patients to the family nurse. The family nurse contacts the patient by phone and arranges appointments.
- Nurse practitioners run a Street Nurse Clinic, three days a week (with or without appointments), to serve the needs of vulnerable people in the downtown core. The nurse practitioner helps to provide essential healthcare services to people who may otherwise not have ready access to these services. Examples of services include communicable disease control, wound care, testing for sexually transmitted disease, management of chronic conditions such as diabetes and high blood pressure, and access to required resources.

Nurse practitioners also have their own panel of patients in PCNs, but with specific restrictions.

- Patients cannot have been seen by a family physician within a 36-month period.
- Patients cannot be already assigned to a PCN physician.
- The care provided by the nurse practitioner needs to be considered comprehensive. Examples of this comprehensive care can include ordering and interpreting routine screening for all ages according to appropriate guidelines; diagnosing, ordering tests and prescribing treatments and medications for primary care patient populations (from birth throughout the life cycle) as authorized through legislation; working independently yet in a collaborative manner with PCN core physicians (managing patients with chronic conditions and mental health issues as part of his/her practice, for example); and responding to requests for routine episodic care needed by the patient population.
- The nurse practitioner needs to have a current "Nurse Practitioner – Family/All Ages" Practice Permit with the College and Association of Registered Nurses of Alberta.
- The nurse practitioner needs to submit (or start submitting) shadow billings to AHW.

Development and implementation of the PCN model

- Forty (40) PCNs have been implemented between 2005 and 2012, with over 2,500 physicians participating.
- Depending on the needs of the community, PCNs have developed different programs–palliative care, for example.
- Many different models of PCNs currently exist (within the parameters of a provincial framework). For example, a PCN can be one clinic or have several clinics with different configurations of physicians,

nurses and other staff. The model is determined at the local level with input from local community stakeholders. This means that no two PCNs are the same.

Evaluation of the PCN initiative

Each PCN is expected to conduct its own evaluation. However, an evaluation of PCNs across the province was conducted between 2009 and 2011 by a private consulting firm contracted by the oversight bodies. The evaluation involved both a formative and summative evaluation. Details of the evaluation methods are not available.

Evaluation results

The evaluation findings were as follows:

- There has been a marked increase in the number of Albertans now attached to a family physician.
- PCN physicians have more time to spend with patients.
- Increased patient access to primary care is a priority for almost all PCNs.
- There has been improved access to primary care, including access to some specialized services within the primary care setting.
- PCNs have developed linkages within Alberta Health Services and external agencies and providers, most notably 100% with home care; 90% with community mental health and community health services; and 84% with public health, hospitals, emergency departments, and physician specialists.
- Expanding the multi-disciplinary teams has been a key priority for most PCNs.
- Multi-disciplinary teams continue to be well-functioning units within PCNs.
- Members of multi-disciplinary teams work to their full scope of practice in PCNs.
- There has been less utilization of emergency rooms by PCN patients.
- Targeting complex patients and/or patients with chronic disease is a priority in most PCNs.
- There is increased patient access to chronic disease management.
- Patients are informed of after-hours care alternatives.
- PCN physicians (compared with non-PCN physicians) more commonly screen for smoking (93% vs. 77%); tetanus/diphtheria immunization (59% vs. 33%); clinical breast exam (99% vs. 84%); mammography (96% vs. 85%);and bone density (63% vs. 44%).
- PCN patients report greater satisfaction with regard to wait times.
- 96% of PCN physicians have changed how they practice.
- PCNs have contributed to the retention of family physicians.

Looking ahead

- Nurses in PCNs need to continue to develop professional independence from physicians.
- The fee-for-service compensation model for physicians is not conducive to collaborative practice.
- Nurses have high workload and a high demand for their time, but are not working within their

full scope of practice.

- There are inadequate training opportunities for nurses working in primary care.

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APPENDIX D: CASE STUDY – INTERPROFESSIONAL MODEL OF CARE

Centre Local de Services Communautaires (Local Community Service Centres): The CLSC Model of Care

Headline: Adopting the Local Community Service Centre (CLSC) Solution

The Challenge: Why establish CLSCs?

- In the 1960s, Quebec recognized that it needed to modernize, redevelop, and expand its social and educational systems; prior to Quebec's 1960s "quiet revolution," all education, health and social services had been funded by the government, but remained under the patronage of the Roman Catholic Church.
- There was a need for greater responsiveness to the needs of local communities in the area of health and social services.

Potential benefits of CLSCs

It is anticipated that CLSCs, when successfully implemented, will:

- Provide preventive and curative health services to vulnerable groups (perinatality, senior citizens, youth, mental health, disabled).
- Enhance the social well-being of the population with a comprehensive (front-line) and community approach, bridging individual and community experiences, know-how and expertise.
- Allow individuals to confront problems and solutions autonomously. This means involving clients in the decision-making process and ensuring that the information passed on from healthcare workers to patients is well comprehended.
- Improve communication and collaboration between medical staff in the areas of patient referrals and follow-ups.
- Forge stronger partnerships with community pharmacies, community organizations, university hospitals, clinics, rehabilitation centres and newer entities such as GMFs (Family Medicine Groups) and the CSSSs.

About CLSCs: History, purpose and scope

- The context in which the government of Quebec launched the CLSCs was a holistic one. The aim was to provide alternative non-private healthcare facilities comprising both preventive and social services, whereby residents and visiting persons in need of health and social services would be able to access the care that they required in a timely, affordable, and supportive way.
- CLSCs were first established in Quebec in 1972 as outlined by the Castonguay-Nepveu Commission. At the time, it was the only model of its kind in Canada. The idea was to provide a range of healthcare services in a single location within a community-sponsored governing body.
- The CLSC runs under a provincially planned regional network and its services are defined by provincial statutes. Each CLSC has an elected board composed of internal and external members (providers, centre users, community residents).

- CLSCs fall under the jurisdiction of the provincial government's Ministry of Social Affairs, which is also the governing body from which it receives its funding. Funding is usually based on needs and is allocated according to the population of an area, not users of the centre.
- CLSCs are responsible for the individuals in their catchment area. Users of the centre have access to multiple service providers – doctors, social workers, homecare workers, and others.
- CLSCs provide various services including health services (walk-in clinics); primary social services; integrated health and social services (home, school, mother-child); prevention services (lifestyle education, self-help); and community organization services (programs for specific groups such as women in need, mental health, alcohol and addiction).

The role of nurses in the CLSCs

- Nurses play a central role in CLSCs including telephone follow-ups, at-home visits, (within 48 hours for a post-natal follow-up), physician referrals for special problems, referrals for psycho-social support workers, and return visits to CLSCs.
- The work of nurses also encompasses patient education and monitoring, which includes health promotion and encouraging patients to be more proactive in their own health through preventive measures, lifestyle changes, and self-care management.
- Examples of nurse-led assistance include arranging medical consultations, carrying out vaccinations, and performing screenings, post-surgery treatments and diagnostic tests (pregnancy, blood, glucose).

Development and implementation of the CLSC model

- 1st Phase: CLSCs were initially launched in 1972. By 1975, there were 50 active CLSCs across the province, all oriented towards prevention, participation, and local autonomy.
- 2nd Phase: Between 1976 and 1978, in order to control government spending and cost increases related to inpatient care, the focus was changed to that of expanding and strengthening external care services. CLSCs adopted general social services and CSSs (Centres of Social Services) absorbed specialized social services, with a plan for CSSs to transfer staff members to CLSCs. The planned transfer was delayed due to institutional resistance; implementation took place in 1984.
- 3rd Phase: Between 1979 and 1985, CLSCs received a new mandates: home, school, and child services; primary social service; and occupational health services. An evaluation commissioned by the Ministry of Health and Social Services (the Brunet Report) was carried out to assess the performance of CLSCs.
- By the mid-1990s, there were 160 CLSCs across Quebec employing over 16,000 staff and 1,200 doctors, of which 95% were on salary and did not follow FFS (Fee for Service) practices.
- To improve Québec's Primary Healthcare System and enhance collaboration, coordination and access to care, the CSSSs (Centres of Health and Social Services) model was designed in 2003 to encompass hospitals, community health centres, CLSCs (local community centres), CSSs (Centres of Social Services), and long-term care homes.
- CSSSs were established for stakeholders to provide health and social services under one agency, as CLSCs can support an even distribution of health and social personnel (physicians, nurses, nutritionists, dentists, lab technicians, social workers, domestic aids, psychologists, community workers, and others). This network of health centres and social service groups led to the establishment of 95 CSSSs throughout the province.

- CSSSs act as a hub to provide both general and specialized services, and refer individuals to CLSCs and available health services in their area.
- CSSSs host public, not-for-profit contracted and private health centres (private hospitals, nursing homes).

Evaluation of CLSCs

- In 1975, the Bilan report was commissioned to help classify the first groupings of CLSCs based on their adoptive approach of programs. The Bilan report was the first evaluation of the CLSCs.
- In 1980, Marc Renaud carried out a tension headache simulation study, where his graduate students were sent to fee-for-service and to CLSC centres for the same health conditions. The goal of the study was to assess GPs (general practitioners) working in different practice settings in the Montreal area.
- In 1983, Renaldo Battista and Walter Spitzer carried out a study on adult prevention care, comparing different primary care settings in Quebec, including CLSCs.
- In 1987, the Quebec Minister of the Department of Health and Social Services commissioned a study (widely known as the Brunet Report) to evaluate the current state of the 150 CLSCs in Quebec, and to make recommendations for their future.
- In 2002, Sicotte et al. evaluated 150 Community Health Care Centres (CHCCs) in Québec by conducting an empirical research study. The purpose of the study was to measure the intensity of interprofessional collaboration among CHCCs.

Evaluation results

- The 1975 Bilan report revealed that the CLSCs could be categorized in three ways: service-oriented model, community development model, or mixed model approach.
- This led to various important recommendations, 24 in total, several of which are now part of the CLSC mandate. As a result of these recommendations:
  - CLCSs now follow a mixed model approach.
  - CLSCs are small institutions close to the populations that they serve.
  - Staff are compensated by salary.
  - Facilities provide accessible services that are public and private.
  - Regional councils of health services and social services have responsibility for general coordination of services provided in their territory.
- Marc Renaud's tension headache simulation study revealed that private practice doctors were more likely to prescribe ''inadequate therapies." CLSC doctors imposed stricter time limits on prescription drugs, offered explicit warnings on chronic drug use, and provided information on alternative treatment methods. The examination time was more thorough at the CLSC, and the CLSC physicians were more complete in investigating the cause and nature of the headaches as well as the patient's medical history. This approach promoted a supportive relationship with the patient.
- Renaldo Battista's and Walter Spitzer's study revealed that CLSC physicians tended to uphold the recommended notions for preventive practice, and were more keen to pursue prevention when examining patient-physician encounters. The authors of this report have suggested that this is because CLSCs and Family Medical Groups are multidisciplinary, include more allied health professionals, and provide more preventive kits and information pamphlets on health issues, whereas the fee-for-service payment model does not adequately compensate preventive activities in private practice.

- The 1987 Brunet Report revealed differences in the status of health between different economic and ethnic groups. The report also identified a number of difficulties faced by CLSCs, including:
  - resistance from social service organizations and public health service to give CLSCs the resources they need
  - lack of clear policy directions from the Ministry of Health and Social Affairs
  - evidence from CLSC management boards that they had difficulties in understanding their mission; and
  - issues with unions. (Unions encouraged staff members who were sympathetic with their views to be elected to CLSC boards.)
- The Brunet report outlined the following recommendations:
  1) Establish a common level of service among all CLSCs.
  2) Put emphasis on early detection and first-line treatment of medical and psychological problems with appropriate referrals.
  3) Expand the home care program.
  4) Establish four program areas for "groups at risk:" infants and families; youth in difficulty; adults with mental health problems; and one other group at risk, selected by the CLSC, that has importance in the area it serves.
  5) Limit the activities of the community action component to avoid duplication with the work of other government services.
- The Sicotte et al. empirical research study produced modest results. It found that interprofessional collaboration was taking place, but that it was limited by internal working group dynamics. Professionals worked in monopolies to protect their fields of expertise and felt threatened in interprofessional environments, resulting in tension between disciplinary and interdisciplinary logics. The report recommended realigning professional training programs so that mixed, rather than like, professionals were receiving interprofessional education side by side, in order to foster more collaboration and collaborative relationships across different professional groups.

Looking ahead

CLSC challenges include:

- expanding and meeting the 200-centre target due to lack of government support and opposition from the medical field; and
- attracting physicians to work in CLSCs where salaries are well below fee-for-service averages of physicians in private practices.

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APPENDIX E: CASE STUDY – NURSE-LED MODEL OF CARE

Nurse-Practitioner Led Clinic (NPLC) Model of Care in Sudbury, Ontario

Headline: NP-Led Clinics win hearts of many who have not had a primary care provider for years

The Challenge: Why establish Nurse Practitioner-Led Clinics (NPLCs)?

NPLCs in have been established to address a number of concerns.

- There are thousands of Canadians who are "unattached" or labelled as "orphaned patients" – patients with no primary care physician.
- There is a chronic shortage of family physicians, particularly in pockets of urban, rural and remote communities.
- There is an increasing demand for chronic disease management, along with an increasing awareness of the benefits of routine preventive primary care and of the merits of interprofessional care.
- Across Canada, there is an aging population living with chronic health conditions in the community (their own homes). This population requires heath support, care coordination, and care management over a longer lifespan.
- Members of the population who are disadvantaged or who have special needs have access issues that need to be addressed.
- Patients experience long delays in getting seen by a physician in primary care.
- The high use of emergency rooms for non-urgent or emergent health issues in hospitals creates congestion and inefficiencies.
- There is a need for comprehensive and integrated primary healthcare.
- Healthcare costs are increasing, and all levels of government are aggressively searching for cost-cutting measures and cost-effective solutions.

Potential benefits of NPLCs

It is anticipated that NPLCs, when successfully implemented, will:

- Increase access to primary care in a timely manner and close to home.
- Increase interprofessional collaborative care, whereby the scope of practice of each provider is optimized in a cost-effective and efficient manner.
- Address complex healthcare issues such as those associated with chronic diseases, health promotion and disease prevention through screening and monitoring.
- Improve health and social outcomes of target groups.
- Provide cost-effective healthcare solutions.
- Provide continuity of care. (By registering with the NPLC itself rather than with a specific provider, patients remain with the clinic and receive consistent care even if the provider leaves the clinic.)
- Improve coordination of care through linking primary care with community-based prevention programs, home care, and hospital-based care.
- Use NPs appropriately to their full scope of practice.

About NPLCs: History, purpose and scope

- NPLCs are incorporated, not-for-profit entities with voluntary governing boards.
- The NPLCs are funded by the Ontario Ministry of Health and Long-Term Care and are supported by various community groups or agencies, health organizations, academic institutions and other partners through in-kind support, expertise and sharing arrangements.
- Community-based programs at NPLCs are developed through a systematic process of community outreach, collaboration, needs assessment, planning, implementation and evaluation.
- Examples of programs provided by NPLCs include diabetes education sessions, smoking cessation, HPV immunization, and programs for weight-loss.
- Under the NPCL model, physicians receive monthly stipends for consultations and fee-for-service for any appointments with patients.
- The first NPLC was started in Sudbury, Ontario in 2007 and served as the pilot. Successful acceptance, implementation and impact helped to build a case for an additional 25 NPLCs.
- NPLCs are located in areas of the province where there are shortages of physicians and many unattached patients as well as under-served populations. The Sudbury District NPLC model, for example, was built around the availability of qualified providers. In the case of Sudbury at the time the NPLC pilot model was introduced, there were eight unemployed nurse practitioners in the community. Some were working out of town or in the process of moving.
- In Sudbury, at the first NPLC, there are currently 5.5 nurse practitioners, two part-time physicians, a registered nurse, a pharmacist, a social worker, a dietitian, an office manager, and clerical staff. Two satellite clinics have been launched.

NPLCs are required to:

- Provide the same comprehensive family healthcare services that other models provide, using an interdisciplinary team of NPs, RNs, family physicians, and a range of other healthcare providers.
- Support their patients, through navigation and care coordination, to access care in other parts of the healthcare system as required, and connect them to community resources.
- Put emphasis on health promotion, illness prevention and early detection/diagnosis.
- Develop and provide comprehensive community-based chronic disease management and self-care programs.
- Involve the patient as a key member of the team and support the patient to make informed decisions and manage his/her self-care needs.
- Leverage information technology to support system integration by linking patient records across different healthcare settings, ensuring timely access to diagnostic and other patient information.

The role of nurses at NPLCs

- Nurse practitioners at the NPLCs are salaried and paid by the Ministry, as are other healthcare providers (except for physicians who work with them).
- Nurse practitioners provide comprehensive primary care with the ability to assess, diagnose, treat and monitor a range of health issues.
- Patients are registered with the clinic, but are assigned to a specific nurse practitioner.

Development and implementation of the NPLC model

The NPLC model was developed through a number of activities that occurred at several different levels, and through many different stakeholder groups. These activities included political advocacy, policy development, community engagement, research, and program planning/implementation.

Nursing leadership and political action were provided by Roberta Heale and Marilyn Butcher, two nurse practitioners who conceptualized and put voice to the idea of NPLCs. As well, lobbying efforts were made by the Registered Nurses' Association of Ontario.

Calls for proposals to establish NPLCs were issued in three waves, with the goal of having all 26 NPLCs in place by the end of 2012. The proposals followed a standard template and required the following:

- A description of catchment area and specific communities targeted by the NPLC, including population characteristics and a health profile.
- A description of existing family healthcare services in the proposed catchment area/community.
- Identified gaps in family healthcare services in the proposed catchment area/community.
- A proposed governance model for the NPLC (each NPLC was required to form a separate and distinct not-for-profit corporation).
- A list of nurse practitioners who would be affiliated with the NPLC, and their letters of commitment.
- A list of collaborating physicians and their letters of commitment.
- Statistics on the priority populations for the NPLC. (Potential patients had to be those who did not have a regular family healthcare provider and who were experiencing difficulty accessing family healthcare services.)
- Examples of specific programs that would meet the needs of the defined priority populations.
- Examples of other programs such as capacity development (student placements, research program).
- The intention to register 800 patients per nurse practitioner once the NPLC was fully operational.
- A description of community partners.
- A description of one-time and/or on-going financial or other supports from each source.
- A description of readiness to operate (length of time that would be required to get to full operation; availability of location; detailed work plan).
- Evidence of support of professional associations, regulatory bodies, government nursing leaders, and/or Ministry of Health champions.

An agreement was made between the NPLCs and the Nursing Secretariat, Ministry of Health, with the intention that the agreement would eventually also include the Local Health Integration Networks.

Various parallel activities in the province helped to support and expand the focus on NPLCs and other nurse practitioner roles in other models and healthcare sectors. These included:

- The establishment of the Nurse Practitioners' Association of Ontario, along with its networking and advocacy efforts
- Educational programs and legislative changes

- Attention to communication and collaboration between nurse practitioners and physicians and other health providers such as midwives, social workers and pharmacists
- Mentorship of novice nurse practitioners by experienced nurse practitioners
- Legislation that initially recognized nurse practitioners, and later, Bill 179, which removed restrictions to nurse practitioners (prescribing medications, ordering laboratory and other diagnostic tests, admitting/discharging patients, and requiring all regulated healthcare providers to carry liability coverage)
- The development of a common post-baccalaureate primary care nurse practitioner education program at 10 Ontario universities

Evaluation of the NPLCs

- The Sudbury pilot NPLC clinic developed and implemented its initial patient satisfaction survey after six months of operation, prior to the official Ministry evaluation.
- In 2009, there was a Ministry-led evaluation of the Sudbury clinic. The goal of the survey was to identify lessons learned in order to inform the establishment of additional 25 NPLCs.
- The evaluation included document review, key informant interviews (19), focus groups with 20 participants, and a survey of patients (603).
- The Sudbury NPLC has expanded to provide services in a remote community and has established a permanent clinic at a second site, for a total of three sites.

Evaluation results

- The 2009 evaluation showed a high level of awareness of the clinic amongst the public. However, media attention to the NPLC had generated both positive and negative publicity, related largely to interprofessional tensions in the community at the time.
- Over 37 % of patients said that their nurse practitioner identified something about their health that they were previously unaware of.
- After only one appointment, patients developed a clear understanding of the nurse practitioner's role and how it differed from the physician role.
- Targets for new patients could not be met within the expected timeframe because patients who were registered were highly complex, and many had not received medical attention.
- Concerns were raised about the inadequacy of the physician compensation model. Complex patients require more time, and the fee-for-service model was more conducive to seeing patients who required less time – patients who could also be seen by nurse practitioners.
- The NPLC model, compared to other models, does not provide funding for physicians to be on call or to receive educational stipends.
- The model of the NPLC was seen as appropriate.
- Nurse practitioners were working to full scope.
- Patients experienced improved access. No patients were turned away due to their medical complexity, due largely to the physician's role, which was to see these patients or provide consultation for them when their care fell outside the nurse practitioners' scope of practice.
- There were high levels of patient satisfaction reported. Patients liked the attitude of nurse practitioners, the thoroughness of care, the emphasis on patient education, and the decreased wait times.

Looking ahead

- There needs to be greater awareness of the nurse practitioner's role in the broader public as well as amongst healthcare providers, to avoid misunderstandings and to promote the benefits of the clinics.
- Greater interprofessional team development would allow for increased collaboration and further improvements in care.

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APPENDIX F: CASE STUDY – PATIENT NAVIGATION MODEL OF CARE

Patient Navigation Model of Care, Initiative of Cancer Care Ontario (CCO)

Headline: Is it cancer? Nurse-led patient navigation reduces wait times and improves patient experience from the time there is suspicion of cancer to diagnosis

The Challenge: Why establish the Patient Navigation model?

The Patient Navigation model for cancer care was implemented across Ontario based on a number of identified factors and needs.

- Patients were experiencing long wait times for diagnostic tests.
- There was a complicated process for diagnostic assessment.
- Patients reported high levels of anxiety and stress due to uncertainty.
- Patients were experiencing difficulty accessing information.
- Limited supports were available for patients.
- There was a need to spread innovative practices in the field. (For example, the pilot project included registered nurses performing flexible sigmoidoscopy and nurses using patient navigation strategies, both of which were highly appreciated by patients.)

Potential benefits of the Patient Navigation model

It is anticipated that Patient Navigation model, when successfully implemented, will:

- Reduce wait times for diagnostic tests.
- Improve patient experience and satisfaction.
- Decrease patient anxiety and stress.
- Allow for early assessment of clinical status and interventions related to symptom management.
- Improve provider satisfaction.
- Address gaps in the healthcare system and/or mitigate or circumvent the gaps.
- Improve coordination between different parts of the system.

About the Patient Navigation model: history, purpose and scope

Patient navigators work collaboratively with surgeons, specialists and other health professionals, and support staff, managers and steering/advisory committees. They work closely with the referring physician or nurse practitioner, supporting the patients by addressing their questions; referring and coordinating diagnostic tests; triaging symptoms and clinical status; making referrals for symptom distress; addressing social supports; and managing patients' anxiety and stress. Under the model, patient navigators can be registered nurses or registered practical nurses, social workers, or lay persons.

Cancer Care Ontario (CCO) piloted the role of patient navigator in January 2010 for two programs – thoracic/lung and colorectal cancer – to be part of the 14 newly established Diagnostic Assessment Programs (DAPs). DAPS were established at the same time to provide patient-centred care, information and linkage to the care team. A DAP is a place where patients going through the process of diagnosing for cancer can manage and coordinate the care and treatment they need in one single and central location, have access multi-disciplinary healthcare teams that can provide medical services for diagnostic cancer, and receive support services in a patient-focused environment.

A two-phase pilot program was funded by the Nursing Secretariat within the Ontario Ministry of Health and Long-Term Care. Each phase involved implementing seven patient navigator positions.

The role of nurses as patient navigators

- Collaborates with the interprofessional team members and coordinates patient care from referral to definitive diagnosis.
- Assesses patients' symptoms and clinical status that may lead to referrals for interventions; and provide patients with information and support.
- Addresses barriers to diagnostic tests and healthcare services.
- Identifies health system gaps and advocates to have these addressed.

Development and implementation of the Patient Navigation model

- Exploratory work was done over a one-year time frame. This work included doing a literature review and conducting focus groups with existing patient navigators and other key informants.
- Steering committees and/or advisory committees composed of key stakeholders were established at each DAP to provide direction and oversight.
- A total of 14 navigators were identified and situated in DAPs. Programs were established to provide comprehensive diagnostic assessment to patients with suspicion of cancer.
- Phase 1 of the pilot was launched in January 2010 for seven patient navigators at seven DAPs. Phase 2 was launched in April 2011 for another seven patient navigators. Lessons learned from phase 1 informed the implementation of phase 2.
- DAPs were spread across the province, which provided the opportunity to adapt the patient navigator role to different contexts.
- The navigators could be registered nurses or registered practical nurses. Several sites decided to utilize advanced practice nurses.
- Funding covered salary and benefits of the patient navigator, costs related to training, provincial meetings, and program evaluation. The DAPs contributed additional funding for clerical staff, office and other overhead costs.
- Patient navigators across the province participated in a national patient navigation working group of the Canadian Partnership Against Cancer (CPAC). This working group provided additional supports, knowledge exchange and networking across Canada.
- The de Souza Institute developed a course on patient navigation across the continuum of care. All 14 patient navigators took the course, which included online learning modules and a full-day clinical session using simulated patients. It is interesting to note that many other nurses also enrolled in the education program, applying the learning to other clinical roles.

- The navigators worked with physicians and many other staff within the DAPs to develop medical directives, clinical pathways and other protocols to facilitate patient care.
- A number of planned meetings were held to bring the patient navigators together for cross-sharing, learning and problem-solving. These meetings helped provide additional supports to the DAPs and to the patient navigators.

Evaluation of the Patient Navigation model

- Cancer Care Ontario established and implemented an evaluation plan, funded by CPAC.
- The program evaluation framework included evaluation of impact of patient navigation on system efficiency (diagnostic wait times), patients' experience, and provider feedback.
- Data sources included the following:
  - Data on wait times, tracked by DAPs
  - Assessment of patient physical and emotional symptoms using the Edmonton Symptom Assessment System (ESAS)
  - Problems identified through the Canadian Problem Checklist tool (used in phase 1 only)
  - Patient experience surveys
  - Interviews conducted with patient navigators, managers, physicians and support staff

Evaluation results

- The patient navigator role was unique to each DAP as expected. Some differences were a result of the type of DAP and/or the way the DAP was designed, and involved different elements of virtual and in-person interactions with the patients. More mature DAPs had navigators who took on a lot more responsibility for tests and decision-making within the parameters of standing orders and/or medical directives.
- The level of education, confidence, interprofessional collaboration, and physicians' knowledge of the nurses' scope of practice, as well as mutual trust between providers, were factors that influenced the types of responsibilities held by the patient navigators. Some DAPs were underdeveloped to the extent that the navigators were not able to realize their clinical role.
- High levels of patient satisfaction were reported (91% satisfied or very satisfied). Areas of satisfaction included the availability of the navigator to the patients; information on tests and test results; and management of symptoms, anxieties, worries or concerns.
- Reductions in wait times were reported: after 18 months, pilot sites had a 50% reduction in their average time to diagnosis.
- There were reductions of more than 30% in symptom severity including anxiety, pain, well-being and tiredness.
- 30% of thoracic patients experienced improvement in breathlessness as a result of navigator support, which included use of the Dyspnea Guide-to-Practice.
- There was improved information provision and support to assist patient decision-making.
- High satisfaction was reported among providers (navigator, physicians, managers, and support staff).
- There was evidence of improved referral systems (centralized), improved care paths, support systems for patients, and decreased situations where patients were "falling through the cracks."
- The program was a catalyst for system improvements through advocacy and facilitation by the navigator.

Looking ahead

- Based on promising results of the pilot project, a formal patient navigator program has been established across Ontario.
- The program will expand as DAPs expands, pending funding allocation.
- The current 14 patient navigators have base funding allocation from the Ministry of Health and Long-Term Care.
- A community of practice for patient navigators has been established to continue to provide a forum for ongoing work.

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APPENDIX G: CASE STUDY – SHARED CARE MODEL

Shared Care Model – Family Practice Nurses and Family Practice Physicians (The Family Practice Initiative)

Headline: Nova Scotia improves access and quality of primary care to its citizens by supporting registered nurses to share primary care practice responsibilities with family physicians and/or nurse practitioners in family practices across the province

The Challenge: Why establish the Family Practice Initiative?

The Family Practice Initiative – an example of the shared care model – has been implemented across Nova Scotia based on a number of healthcare needs and factors.

- There is an identified need to increase primary care access for patients.
- A high demand exists for services for chronic disease management.
- Primary care physicians are working in isolation, particularly those in solo practices or rural areas.
- Physicians and patients are encountering difficulties in coordinating care and challenges in navigating through the healthcare system.
- Registered nurses in primary care are not working to their full scope of practice.

Potential benefits of the Family Practice Initiative

It is anticipated that this initiative, once successfully implemented, will:

- Increase access to primary care.
- Improve quality of care (for example, outcomes related to chronic disease management, screening and prevention).
- Increase satisfaction of providers, with less stress on physicians.
- Optimize nurses' scope of practice by better defining and supporting the role of the family practice nurse.
- Provide collaborative support for complex patients who require more time.
- Make peer support more available through collaborative practice, and in doing so, help to address issues related to healthcare professionals working in isolation.
- Provide an economically feasible model of primary care.

About the Family Practice Initiative (shared care): History, purpose and scope

- A pilot project was initiated by Capital Health in 2008-2009, supported by the Nova Scotia Department of Health.
- The business case was strong: the initiative was cost-neutral for the family practice, and it was anticipated that revenues generated from increased volume would offset costs for family practice nurses' salary and other expenses.
- A recruitment strategy was initially developed to identify interested family practices. The strategy included marketing materials, presentations and one-on-one meetings. Enrolment of physicians and family practice nurses was voluntary.
- There was strong support from physician stakeholders.

Key components of the program:

- Team manuals are disseminated as part of the program. The manual includes budget requirements, the business case, Medical Service Insurance (MSI) guidelines, liability information, and information on nursing roles.
- A team resource kit has been developed that includes patient education materials and aides, assessment tools, and reference materials.
- An education and orientation program for the nurses is routinely provided by the Registered Nurses Professional Development Centre (RNPDC). The program includes an initial five-day orientation program and 10 education modules completed over a one-year period.
- Governance and accountability structures and processes have been developed. These include medical directives, a certification program for advanced nursing skills, and billing guidelines.
- Mentorship and support for the practices (assessment of workflow, collaboration, scheduling, approaches to care) were initially provided by the project lead and are now provided through the RNPDC.
- Collaborative team days are organized and held regularly. Nurses and physicians have joint time to strategize on changes needed to improve care.
- Financial support is provided to attend collaborative team days and partnership development.
- Partnerships have been developed with industry partners, to support collaborative team days and team resource kits.

Roles of nurses in the Family Practice Initiative

- Under the model, registered nurses are employed in family practice (fee-for-service practice environment). The physicians and nurses build a team approach to patient care.
- Focus for care is on disease prevention, screening, complex patients, chronic disease management, follow-up, support, and coordination.
- Patient education and infection control practices are developed and coordinated at the practice.
- Nurses and physicians are encouraged to have greater involvement in primary care research. The Department of Health provides financial support for the education itself and for education time.

Development and implementation of the Family Practice Initiative model

Primary Health Care (PHC) at Capital Health spearheaded a pilot initiative in 2008-2009 with a project lead support. After the pilot project was completed, the Department of Health provided standards, supports and financial support to all districts to continue to implement the initiative.

Evaluation of the Family Practice Initiative

- An evaluation plan was developed using a logic model and an evaluation matrix with defined indicators and key data sources.
- An evaluation consultant was hired to support the evaluation.
- Phase 1 evaluation was conducted in February 2009. The focus was on process evaluation using document review, surveys, and the service tracking form.
- Phase 2 evaluation was conducted in June 2010. The focus was on the impact of the initiative, and included client surveys and chart audits as well as data sources from phase 1.

Evaluation results

The evaluation of the pilot project revealed that local autonomy and decision-making had resulted in various physician and nurse collaborations.

- Of the 10 practices that provided information, the majority of them had hired one Family Practice Nurse (FPN). 6 out of the 10 practices reported that the FPN had her own patient appointments and in the remaining 4, they shared the appointment. 7 out of 10 FPNs had their own examination rooms.
- Fewer than half of the collaborations had policies/procedures for risk management, patient safety and medication errors.
- 6 out of 10 had job descriptions for nurses.
- 2 had medical directives, policies and procedures.
- 4 had an employment contract.
- The family practices incorporated learners and students in their practices.
- There was enhanced participation in primary healthcare research.

Findings from the process evaluation

- Provider satisfaction was noted in decision-making processes, clarity/understanding of roles in collaboration, and communication.
- Different communication mechanisms were used by different practices. These included informal communication, e-mails, to-do lists, regular meetings, and team- building workshops.
- 80% of practices improved their clinical protocols or assessments to coordinate patient care, vaccine management, recording of current medications, and infection control.
- Improvements were found in documentation – both in information capture and use (patient profiles, quality indicators).

Findings from the outcome evaluation

- All physicians would recommend hiring family practice nurses to their colleagues.
- They identified improvements in time with patients and rapport; balance between patient care and paperwork; and improvements in level of care.
- 60% of physicians had improved satisfaction on how care was coordinated within the healthcare system.
- The Family Health Initiative practices improved comprehensive screening and care for both episodic and chronic disease management (particularly with cardiovascular patients).
- Improved access to primary care was achieved; 50% of practices accepted new patients; there were decreased wait times for regular appointments and more patients scheduled per hour; and patients reported ease in getting an appointment.
- There was an increase in referrals to a variety of community programs.
- Patients provided top ratings on nurses' listening, how seriously nurses took patients' health concerns, thoroughness of nurses' assessments, and the ease at which the nurses put the patients. Over 90% reported overall satisfaction with the nurse and the clinic. All would recommend the nurse to others.

- The majority of patients reported positively on health promotion and prevention items, indicating specifically the nurses' role in providing lifestyle information, advice and influence.
- Improvements were found in annual testing for fasting lipid profile, foot assessments (for patients with diabetes), fasting blood sugar tests (patients with CAD), and blood pressure measurements (patients with CAD).
- There was an increase in patients with depression who were offered non-pharmacological treatments (nurses do not prescribe medications under this model).

Looking ahead

Several recommendations and areas for improvement were identified through the pilot evaluation, to be considered as the Family Health Initiative continues to be implemented.

- There needs to be adequate time for physician-nurse collaboration, training and mentorship.
- There are continuing pressures on the financial feasibility and sustainability of including family practice nurses in these practices. Practices can be cost-neutral only if they increase their volumes of patients. Many of the practices are not covered by the fee codes, creating constraints for nurses.
- It is important to continue to build patient acceptability of the family practice nurse's role and scope of practice.
- There needs to be a focus on preventive strategies and screening for specific areas that require improvement.
- Inefficiencies in billing practices should be addressed, so that the patient does not have to see the physician each time.
- There is a need for nursing leadership to address ongoing issues and practice development.
- Currently, the family practice nurses do not have a benefits package with their salaries.

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APPENDIX H: FACTORS INFLUENCING APPLICATION OF MODELS OF CARE IN PRIMARY CARE

Success Factors and/or Challenges	References
POLICY/SYSTEM LEVEL FACTORS	
Policy decision-makers understanding of roles such as of NP	Sangster et al, 2010
Pan-Canadian approach to legislative and regulatory framework development and implementation	DiCenso et al, 2010 Donald et al, 2010 Stevenson & Sawchenko, 2010
Graduate level education for advanced nursing practice roles	DICenso et al, 2010 Donald et al, 2010
Good data and research to understand current status and impact of changes in the system, for example to assess impact of NPs already in the system – patient volume, access. Health human resource planning to encourage collaboration and coordination of services (also appropriate numbers, distribution, skills)	Donald et al, 2010 MacAdam, 2008 Minore & Bones, 2002 Tomblin Murphy Consulting Inc, 2005
Restrictive/barriers posed by legislation and regulation (restrictions on prescribing drugs, break down barriers that encourage silos)	Donald et al, 2010 Dufour & Deborah-Lucy, 2010 McPherson et al, 2012 Oandasan et al, 2006
Professional malpractice	Martin-Misener et al, 2004 Oandasan et al, 2006
Appropriate compensation models for physicians (has to have incentives if they are not to bill) and other providers (NPs, for example)	De Guzman et al, 2010 Dufour & Deborah-Lucy, 2010 Goldman et al, 2009 McPherson et al, 2012 Oandasan et al, 2006 Rosser et al, 2011 Schadewaldt et al, 2011
Innovative funding mechanisms for teams to operate	Baumann et al, 2009 McPherson et al, 2012 Patterson et al, 2009 Stevenson & Sawchenko, 2010
Interprofessional education, pre-licensure and post- licensure	Goldman et al, 2009 McPherson et al, 2012 Oandasan et al, 2006
Curriculum for family practice nurse or family health nurse	Alsaffar, 2005 Brynes et al, 2012
Educate physicians, other team members and public at large on nursing roles	Alsaffar, 2005

Success Factors and/or Challenges	References
New standards for service delivery, evidence-based processes/interventions	Goldman et al, 2009 Russel et al, 2009
Global set of metrics	McPherson et al, 2012
Standardized language across providers – support consistent and standardized measures	Barton et al, 2003
Greater networking on IPE/IPC	Côté et al, 2008
APPROPRIATE MODEL OF CARE	
Community needs assessment – model must work for community of patients – what are the high needs such as extent of unattached patients (no physician); models may require changes as the needs of the population changes	Dufour & Lucy, 2010 Psooy et al, 2004 Ragaz et al, 2010
Patient population characteristics and needs	Clement et al, 2006 Minore & Bones, 2002
Client-centred approaches	Baker & Denis, 2011 Clement et al, 2006
Patient willingness to receive care from alternates, teams	Byrnes, 2012 Craven et al, 2006
Involvement of patient and family	Demiris et al, 2008 Pauzé, et al, 2005
Involvement of stakeholders early on (for example, unions related to nurse practitioners)	De Guzman et al, 2010 Sangster et al, 2010
Multi-component model – important components – patient education, systematic follow-up, medication adherence	Craven et al, 2006 Humbert et al, 2009 Malin & Morrow, 2007
Length of engagement with patient/Intensity of interventions	Schadewaldt & Schulz, 2011 Sicotte et al, 2004
Process – holistic approach – assessment, including monitoring and evaluation, screening for complications, health teaching, case management (coordination of care, appropriate referrals), treatment and procedures for managing health issues, symptom management, diagnoses,	Goldman et al, 2009 Wong & Chung, 2006
Group visits, shared appointments	Watts et al, 2009
Presence of NPs in teams	DiCenso et al, 2010 Humbert et al, 2009 Soeren et al (2003)
Scope of practice – based on roles	Brynes, 2012 Cioffi et al, 2010 De Guzman et al, 2010 Martin-Misener et al, 2010 McPherson et al, 2012 Oandasan et al, 2006 Sangster et al, 2010

Success Factors and/or Challenges	References
INDIVIDUAL AND TEAM LEVEL FACTORS	
Effective teams – clear purpose, objectives, goals, communication, coordination and mechanisms to address conflicts; non-hierarchical/equity	Byrnes, 2012 Clement et al, 2006 Goldman et al, 2010 Hall et al, 2008 Hillier et al, 2011 Howard et al, 2011 Humbert et al, 2009 Huron Pert Health Alliance, 2010 Martin-Misener, 2004 Sangster et al, 2010
Mutual trust, power balance	Akeroyd et al, 2009 Baxter & Markle-Reid, 2009
Knowledge and experience working in teams	Reeves et al, 2009
Knowledge of each other's roles and scope of practice	Byrnes, 2012 Ragaz et al, 2010
Willingness to collaborate, have a common goal, relinquishing professional "turf", collaborative relationships	Baxter & Markle-Reid, 2009 Byrnes, 2012 Craven et al, 2006 Thornhill et al, 2008
Physicians have to share their role	Goldman et al, 2010
Physician leadership training	Baker & Denis, 2011
Co-location of team members	Craven et al, 2006 Demiris et al, 2008 Oandasan et al, 2006
Enable right tools and information to support teamwork, communication, client-centered approaches including involvement of patient/family in decision-making	Clement et al, 2006
Appropriate scheduling – flexible structures, time for team meetings, collaboration	Byrnes, 2012
ORGANIZATION FACTORS	
Common grounding philosophy consistent with primary healthcare	Dufour & Deborah-Lucy, 2010
Clear business plan	Ragaz et al, 2010
Selecting the most appropriate healthcare providers	Dufour & Lucy, 2010
Hire experience, competent nurses, confident	Wong & Chung, 2008
Medical directives	Humbert 2009
Need interprofessional organization interventions (staffing, policy, workspace, culture changes)	Goldman et al, 2009
New models of governance	Goldman et al, 2009

Success Factors and/or Challenges	References
Electronic medical/health records plus unimpeded flow of information and communication; common tools	Baker & Denis, 2011 Cioffi et al, 2010 Goldman et al, 2009 MacAdam et al, 2010 Ragaz et al, 2010
Meeting space, other tools	Demiris et al, 2008 Hall et al, 2008 Humbert et al, 2009
Sufficient funding for model to sustain required supports	Craven et al, 2006 Patterson et al, 2009
MODEL IMPLEMENTATION FACTORS	
Leverage existing toolkits that have been developed to implement models or roles such NP	Côté et al, 2008
Adequate time for system-level collaboration to develop – requiring staff buy-in, leadership support, formal policy changes, performance monitoring	Craven et al, 2006
Service restructuring to allow model to work – including integration of process (referral mechanisms, consultation processes)	Craven et al, 2006 Goldman et al, 2010 Lacopino, 2010
Support team development, transformation process from group to team practice	Clement et al, 2006 Dufour & Deborah-Lucy, 2010
Address inconsistencies in working relationships between nurses and physicians	Donald et al, 2010
Protect from staff turnover, particularly during the implementation phase	Taylor et al, 2007
Training in chronic disease management	Barlow et al, 2002 Giddens et al, 2009
Satisfactory delegation of responsibilities	Cioffi et al, 2010
Mentorship for nurses new in roles	Alsaffar, 2005 Sangster et al, 2010
Evidence-based guidelines/protocols	Craven et al, 2006

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