

How is interprofessional collaboration making a difference in tobacco dependence treatment?

By

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Abstract

Objective: To explore the role of interprofessional collaboration in the delivery of team-based tobacco dependence treatments within primary care.

Methods: A narrative review of the literature was completed to examine FHT team functioning in Ontario, followed by a single, multi-site qualitative exploratory case study.

Results: Interprofessional collaboration contributed to changes in tobacco dependence treatment through the initiation of system-wide change, cultivation of collective action, and supporting enhanced quality of smoking cessation care.

Conclusion: Interprofessional collaboration can enhance the comprehensive delivery of evidence-based treatments for individuals trying to quit smoking. Supportive public policy, education for patients and providers, and evaluation research is needed to advance FHT functioning.

This thesis is dedicated to health care teams, whose collaborative efforts to enhance patient care result in the achievement of outcomes no professional could attain alone. This thesis is also dedicated to all patients; each of you forms the core of any team endeavour: leading, guiding, and teaching us better ways to attain optimal health.

I would also like to dedicate this thesis to my family: Nigel, Allison, Bronwyn and Kiara. In so many ways, having three daughters and a husband cheering on my efforts made this all possible. It became a learning experience for each of us, a stepping stone in our family's journey of lifelong learning. To my mom and dad, I extend many thanks for your continued support and love.

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Nomenclature

5 A's: Ask, Advise, Assess, Assist and Arrange

CAN-ADAPPT: The Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-Informed Tobacco Treatment

CCM: Chronic Care Model

CHCC: Community Health Care Centre

CINAHL: Cumulated Index to Nursing and Allied Health Literature

CNA: Canadian Nurses Association

CTUMS: Canadian Tobacco Use Monitoring Survey

EMR: Electronic Medical Records

FHT(s): Family Health Team(s)

GP: Physician

HCP: Health Care Professional

HFHT-MHP: Hamilton Family Health Team-Mental Health Program

HR: Human Resources

ICES: Institute for Clinical Evaluative Sciences

IHP(s): Interdisciplinary Health Professional(s)

KFHT: Kingston Family Health Team

KFL&A: Kingston, Frontenac and Lennox & Addington (KFL&A) Public Health

LHIN: Local Health Integration Network

MeSH: Medical Subject Heading

MOHLTC: Ministry of Health and Long-Term Care

N/A: Not Assessed

PR: Peer Reviewed

RFA: Request for Application

RNAO: Registered Nurses' Association of Ontario

SE LHIN: South East Local Health Integration Network

The Ottawa Model: The Ottawa Model for Smoking Cessation in Primary Care

UOHI: University of Ottawa Heart Institute

US PHS: United States Public Health Service

WHO: World Health Organization

Chapter 1: **Integrated Introduction**

Problem Statement

Smoking is the single greatest cause of preventable death and disability worldwide (WHO, 2005). In Ontario, heavy smokers have a life expectancy more than a decade lower than non-smokers (Manuel et al., 2012). Among Canadian's over 15 years of age, 18% currently smoke tobacco (CTUMS, 2010). Approximately 80% of these individuals visit their primary care provider each year (CTUMS, 2010), providing professionals in this setting an important opportunity to help patients with tobacco addiction and dependence. Smoking cessation however is one of the most significant missed opportunities in health care today (Els & Kunyk, 2010). Despite widespread patient interest in quitting and the effectiveness of currently available treatments for tobacco dependence, health care providers often neglect to intervene (Fiore et al., 2008; Smith, Sheffer, Payne, Applegate, & Crews, 2003).

The results of patient surveys have demonstrated that while up to three quarters of patients receive health professional advice to quit, less than half are offered assistance, and only 3 to 9 patients out of every 100 are prescribed medication or provided with follow up counseling support (CTUMS, 2005; Goldstein et al., 1997; Gottlieb, Huang, Blozis, Guo, & Smith, 2001; Quinn et al., 2005). Unaided smokers find quitting especially difficult, with only 3-7% achieving long term abstinence (Fiore et al., 2008; Hughes, Keely, & Naud, 2004; Zhu, Melcer, Sun, Rosbrook, & Pierce, 2000). Health care providers have the opportunity to support patients in doubling or tripling smoking cessation success (Fiore et al., 2008).

Multi-provider teams, working together, have demonstrated success in improving smoking abstinence but little is known about the process by which interprofessional collaboration influences tobacco dependence treatment delivery (Fiore et al., 2008). Since

2005, the province of Ontario has established 200 interprofessional Family Health Teams (FHTs) in order to improve the accessibility, effectiveness and quality of primary care health services across the province (MOHLTC, 2011). These teams include physicians, nurses, pharmacists, health educators and other allied health professionals working side by side in clinical practice (CNA, 2005). Primary care teams have been heralded for their ability to improve health care access, outcomes, and costs (Safran, 2003). The advent of interprofessional FHTs presents a novel opportunity to enhance the delivery of comprehensive tobacco dependence treatments using a team-based approach.

The Ottawa Model for Smoking Cessation in Primary Care (The Ottawa Model) was recently implemented in 36 FHT practices. The Ottawa Model is a team-based approach with integrated practice supports used to systematically deliver smoking cessation best practices (Papadakis, 2010). The intent of the Ottawa Model is to increase the number of tobacco users who achieve long-term abstinence by ensuring that they receive effective, evidence-based tobacco dependence treatments delivered by knowledgeable, proactive health care providers (Reid et al., 2010). Examination of interprofessional collaboration in the delivery of the Ottawa Model will help to advance knowledge regarding the mechanisms through which coordinated, interprofessional teams may influence the delivery of smoking cessation treatments and clinical outcomes for patients struggling with tobacco addiction.

Positioning the Researcher within the Research

In qualitative research, it is important to understand the motivation behind a researcher's study focus, their disciplinary orientation, and the potential audience for knowledge arising from their research project (Thorne, 2008). This research study was conceived out of my own personal clinical experiences. I am a Nurse Specialist in Stroke Prevention and have worked in acute and ambulatory neuroscience settings over the past 16 years. I participated in the implementation of the Ottawa Model in an outpatient clinic in Ottawa and have used this model in the delivery of smoking cessation services for the past five years. In my practice setting a team of receptionists, nurses, counsellors and physicians

have applied a collaborative care approach, inclusive of individual patient and family needs, to deliver best-practices in smoking cessation care.

When the Ottawa Model expanded from hospital and outpatient settings to primary care settings, I considered the immense potential of this team-based model to reach broad populations of smokers wanting to quit. While many clinical practice guidelines have been promoted and made available to support interprofessional health care providers in delivering comprehensive smoking cessation treatments, I had seen a significant clinical gap in achieving success with uni-disciplinary approaches. I wondered about the unique influence of the team-based approach, utilized in the Ottawa Model, on smoking cessation treatment use and patient outcomes in other settings such as primary care. Knowledge gained through this research study may be of interest to interprofessional team members from a variety of disciplines, health care administrators, educators and policy makers given the potential influence of successful smoking cessation on individual and community health.

Conceptual Framework

A Tobacco Dependence Treatment conceptual framework was developed for this study to guide the research protocol (Figure 1). This framework has incorporated key components from the Chronic Care Model and the Ottawa Model for Smoking Cessation in Primary Care clinical framework.

Chronic Care Model

The Chronic Care Model (CCM) is a framework designed to inspire fundamental changes within a health care system constructed to treat acute, episodic illness (Wagner et al., 2001). The CCM incorporates evidence-based interventions within broad community and organizational structures that are recognized as essential for chronic disease management (Wagner et al., 2001). One of the key assumptions underlying the CCM is a belief in the central role of an informed, empowered patient who interacts in partnership with a prepared proactive practice team (Funnell & Weiss, 2008). Tobacco dependence

represents a chronic, addictive and relapsing condition (WHO, 2005). The CCM provides an important framework for addressing the challenges associated with smoking cessation and for improving patient outcomes (Glasgow, Orleans, Wagner, Curry, & Solberg, 2001; Hung & Shelley, 2009).

The CCM includes six key elements which are deemed essential to the provision of high-quality chronic care (Wagner et al., 2001). Two elements provide broad, structural support: the health care organization (values, leadership), and community resources (community programs, advocacy) (Tsai, Morton, Mangione, & Keeler, 2005). Four additional elements support day to day processes in care. These include delivery system design (interprofessional role clarity, proactive care), decision support (integration of research evidence and clinical guidelines), self-management support (promotion of self-efficacy, shared decision making) and clinical information systems (patient registry, data accessibility) (Tsai et al., 2005). One of the assumptions within this model is the premise that having specialized knowledge about a chronic condition is not the same as knowing about the effect of that illness on the life of an individual (Funnell & Weiss, 2008).

The Ottawa Model for Smoking Cessation in Primary Care

The Ottawa Model for Smoking Cessation in Primary Care (The Ottawa Model) adds to what is provided within the CCM by focusing on the needs of patients, providers, and health care organizations in the delivery of tobacco dependence treatments. Within the Ottawa Model comprehensive interventions are delivered at the level of the health care practice and health care provider (such as outreach facilitation visits, tailored treatment protocols to fit the unique health care setting, provider prompts, defined provider roles, patient resources, audit and feedback) (Papadakis, 2010). These interventions are aimed at creating a supportive work environment, establishing common goals for smoking cessation, and are designed to enhance provider self-efficacy, knowledge, and skills (Papadakis, 2010). The Ottawa Model incorporates audit and feedback strategies to identify gaps between benchmark targets and actual performance (Papadakis, 2010).

The Ottawa Model is also focused on the delivery of comprehensive 5 A intervention support for patients (ask, advise, assess, assist and arrange). The 5 A interventions are customized to meet individual needs to enhance patient self-efficacy, goal setting, knowledge and skills, social support and outcome expectancy in an effort to enhance quitting success and relapse prevention (Papadakis, 2010). Self-management support is a core element of the Ottawa Model. Patients are supported with evidence-based assistance for quitting (behavioural counselling and pharmacotherapy) alongside follow up counselling support designed to enhance patient self-efficacy during the early period after quitting when withdrawal symptoms, cravings for tobacco, and relapse to smoking are most common (Papadakis, 2010).

The Tobacco Dependence Treatment Conceptual Framework

Comprehensive environmental and health system structures are required to support optimal interprofessional collaborative processes and improve patient outcomes in the treatment of tobacco dependence. The CCM was chosen for this research study due to its patient-centered focus and strengths in the identification of broad system determinants which may serve as barriers or facilitators to tobacco dependence treatment in primary care. It provides a lens through which to explore the structural and organizational factors which strengthen or weaken clinical tobacco dependence treatment. The Ottawa Model was chosen as a clinical framework to compliment the CCM due to its emphasis on the process of tobacco dependence treatment delivery with a focus on patient, provider and practice system needs. The Ottawa Model has been applied in a variety of health care settings as a program of care based on the 5 A interventions. The Ottawa Model framework is particularly ideal for this study as it utilizes interprofessional collaboration as a core element within the design, implementation and sustainability of tobacco dependence treatments in primary care (Papadakis, 2010).

The Tobacco Dependence Treatment conceptual framework has been used within this study as a theoretical guide for the examination of structural and process factors contributing

to patient and provider collaboration in the achievement of tobacco dependence treatment outcomes. An assumption of the Tobacco Dependence Treatment framework is the belief that supportive tobacco dependence treatment structures and clinical processes will result in a partnership whereby informed, activated patients and prepared, proactive health care teams are able to engage in effective partnerships. In turn, factors at the structural and process level will affect outcomes such as delivery of 5 A smoking cessation interventions and patient smoking cessation outcomes.

The CCM has previously been used within smoking cessation research alongside the 5 A intervention framework in a study by Hung & Shelley (2009). Within this study, a multilevel analysis was used to assess the probability of full 5 A service delivery based on CCM elements tailored to treat tobacco use within 60 New York primary care clinics (Hung & Shelley, 2009). A before-after implementation trial is also underway exploring the effect of nurse-led CCM interventions on smoking abstinence among hospitalized patients in four hospitals (Katz et al., 2009).

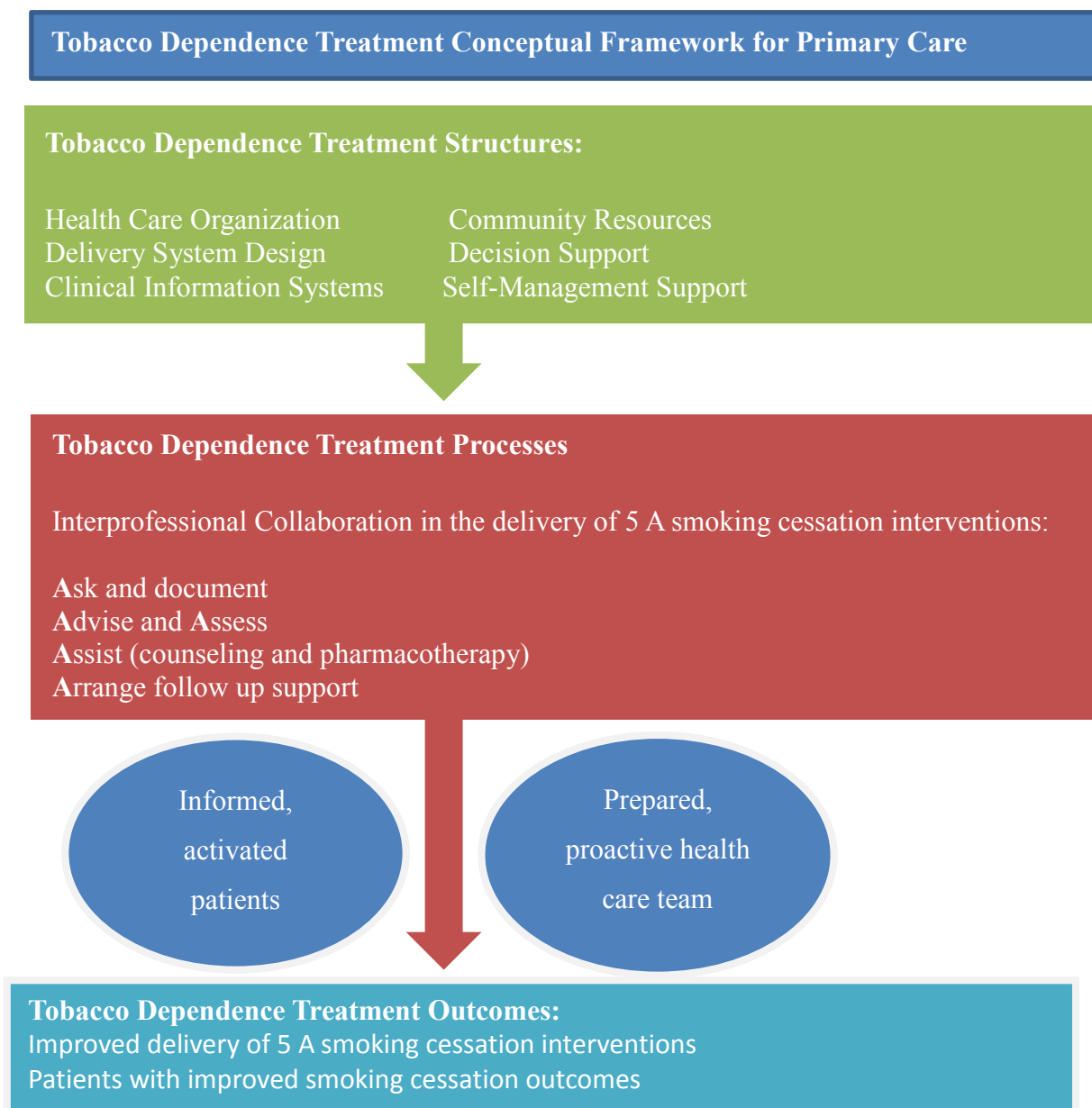


Figure 1: Tobacco Dependence Treatment Conceptual Framework for Primary Care

Purpose and Research Questions

The purpose of this research project was to explore the role of interprofessional collaboration in the planning and delivery of the Ottawa Model, a team-based tobacco dependence treatment program in the primary care setting. Two overarching questions were studied:

1. What determinants have influenced the success of interprofessional collaboration within Ontario's FHTs and what outcomes have FHTs achieved to date?
2. How is interprofessional collaboration making a difference in tobacco dependence treatment?

Format of the Thesis

This manuscript-based thesis consists of five chapters. Two of the chapters have been written as manuscripts to facilitate the timely publication of results. In chapter one, an overview is provided regarding the problem under study, the position of the researcher, the conceptual frameworks to be used, and the purpose of this thesis research. In chapter two, an examination of the literature is presented highlighting what is currently known about tobacco dependence treatment in primary care and team-based interventions. In addition, gaps in knowledge are identified and the rationale for this research project is provided. Chapter three (the first manuscript) is a review of the literature focused on interprofessional collaboration in Ontario's Family Health Teams. This review was conducted to advance current understanding of the determinants which support collaborative interprofessional practice and FHT outcomes achieved to date. Chapter four (the second manuscript) includes the case study research conducted with the Kingston Family Health Team, exploring how interprofessional collaboration is making a difference in tobacco dependence treatment. In Chapter five, an integrative summary of the thesis is provided. Furthermore, this final chapter includes a discussion of overall study findings and their implications for nursing practice, education, research and policy.

Continuous page numbering has been used for this thesis. A reference list is provided at the end of each chapter. There is some repetition of information within this thesis that was inevitable due to the manuscript-based format. Chapters three and four have been written as articles for publication and this required some redundancy in content in order to allow these articles to stand-alone for the designated journal audience. In addition, the two manuscript chapters have been formatted according to the requirements of the respective journals selected for manuscript submission.

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Chapter 2: Tobacco Dependence Treatment in Primary Care

A review of the literature was conducted to identify publications related to the interprofessional delivery of tobacco dependence treatments in primary care. The search was conducted using Medline, CINAHL and PsycINFO electronic databases in addition to a search of the Cochrane collaboration and thesis dissertations. The keyword search headings included: “smoking cessation” or “tobacco use cessation” and “primary care” or “primary health care”. The search timeframe was inclusive of all publications dating up to December 2011. Bibliographic references from retrieved articles were also hand searched for relevant publications.

This chapter provides an overview of the burden of tobacco dependence, the benefits of quitting smoking, challenges that patients experience in quitting and best practice guidelines for tobacco dependence treatment. It also contains a description of the primary care setting, current gaps in the delivery of comprehensive smoking cessation interventions and a synthesis of the literature which describes the influence of team-based care on treatment access, support and abstinence. An introduction to Family Health Teams (FHTs) is provided and a recent study employing the Ottawa Model for Smoking Cessation in primary care is also discussed.

Lethality of Tobacco Dependence and Benefits of Treatment

Smoking is the single greatest cause of preventable death and disability worldwide (WHO, 2005). In Canada, 18% of the population over 15 years of age are current smokers (CTUMS, 2010). Smoking tobacco leads to premature death for 50% of people who use this product precisely as designed (McIvor et al., 2009). Direct costs of tobacco use in Canadian

health care are estimated at 4.4 billion dollars per year, with an additional 12 billion dollars spent on productivity losses (Rehm et al., 2006).

The benefits of cessation treatments are extraordinary. Successful smoking cessation can increase life expectancy by up to 10 years (Doll, Peto, Boreham, & Sutherland, 2004). Furthermore, tobacco cessation provides significant, immediate health benefits. These benefits include, but are not limited to, improvement in circulation and lung function within two weeks to three months after cessation and a halving of the risk of coronary artery disease within one year of quitting when compared to a smoker (WHO, 2005).

Challenges in Achieving Smoking Abstinence

The majority of smokers want to quit but experience challenges in achieving abstinence. Among adult smokers, close to 70% report they would like to quit smoking and about 45% make a serious quit attempt each year (Health Canada, 2009). Unfortunately, less than 30% of quitters use treatments that have been shown to enhance their ability to become smoke free (Hammond, McDonald, Fong, & Borland, 2004). Without behavioural counselling or pharmacotherapy support, smokers find quitting difficult; only 3-7% of unaided smokers achieve long term abstinence (Fiore et al., 2008; Hughes, Keely, & Naud, 2004; Zhu, et al., 2000). Tobacco dependence is a chronic, addictive and relapsing condition (WHO, 2005). A Canadian survey showed that among those who have tried to quit, an average of six quit attempts are reported (The Lung Association, 2008). Nicotine addiction requires comprehensive treatment and all health care professionals have an important role to play in tobacco control (WHO, 2005)

A Standard of Care: The 5 A's Model for Tobacco Dependence Treatment

Universal tobacco dependence treatment is recognized as one of the most important, cost effective, preventative interventions that health care providers can offer (Cromwell, Bartosch, Fiore, Hasselblad, & Baker, 1997). The 5 A's model for tobacco dependence treatment has widespread recognition as a fundamental standard of care; consensus around

its' use has been achieved in best practice guidelines across health care disciplines (CAN-ADAPPT, 2011; CNA, 2001; Fiore et al., 2008; McIvor et al., 2009; RNAO, 2007). The five major components of the 5 A's model include: *Asking* every client, at every visit about their tobacco use and documenting their response; *Advising* each smoker to quit using clear, personalized messages; *Assessing* the willingness of each client to make a quit attempt; *Assisting* each client willing to quit using both pharmacotherapy and the provision of, or referral to additional counselling; *Assisting* clients unwilling to quit through the use of interventions designed to increase future quit attempts; *Arranging* follow up for those willing to quit, and following up with those unwilling to quit at each subsequent visit (CAN-ADAPPT, 2011; Fiore et al., 2008; RNAO, 2007).

The use of brief counselling advice, with an offer of support and appropriate pharmacotherapy is effective in many instances in doubling or tripling quitting success (Fiore et al., 2008; McIvor et al., 2009). The failure of health professionals to consistently intervene with every tobacco user undermines the reach of this model (Fiore et al., 2008) and neglects patient needs for cessation support.

Missed Opportunities in Primary Care

The primary care setting serves as a critical entry point to the health care system (Health Canada, 2006) and acts as a gateway for tobacco dependence treatment (Smith, Sheffer, Payne, Applegate, & Crews, 2003). In Canada, 80% of individuals who smoke visit their primary care provider each year (CTUMS, 2010). This presents primary health care professionals with unparalleled access to those who smoke in the community at large and affords significant potential for the improvement of individual and overall population health (Young & Ward, 2001). Despite the window of opportunity that is present in each health care encounter and the effectiveness of currently available treatments, health care providers often neglect to intervene (Fiore et al., 2008; Smith et al., 2003). Disparities exist in the access Canadians have to smoking cessation programs, medications and support (The Lung Association, 2008).

A survey of Canadian health professional groups, using self-report data, indicated that the provision of assistance for smoking cessation is inconsistent across disciplines, ranging between 8 and 63% (Tremblay, Cournoyer, & O'Loughlin, 2009). Furthermore, provider follow up support for those attempting to quit was particularly deficient with self-reports of between 0.3-15.7% (Tremblay et al., 2009). The paucity of comprehensive cessation treatment in primary care is validated using survey reports from tobacco users who suggest that only 51-71% of health care providers advised them to quit smoking; 56% assessed their willingness to quit, 15-49% offered assistance, 3-8% prescribed medication and 3-9 % arranged follow up contact (CTUMS, 2005; Goldstein et al., 1997; Gottlieb, Huang, Blozis, Guo, & Smith, 2001; Quinn et al., 2005). This stands in stark contrast to the treatment of other chronic conditions such as hypertension, where 80% of Canadians receive evidence-based interventions and 66% are successfully treated for high blood pressure (Els & Kunyk, 2010).

Multiple barriers have been cited to account for the evidence-practice gap in tobacco dependence treatment such as competing priorities, inadequate time, insufficient training, perceived lack of knowledge and skills, limited practice supports, lack of organizational leadership and perceived patient reluctance (CNA, 2001; Lounsbury, Levine, & Ostroff, 2007; McDaniel, Stratton, & Britain, 2009; McIvor et al., 2009; Vogt, Hall, & Marteau, 2005; WHO, 2005). In a systematic review, several strategies were identified which facilitated the delivery of tobacco dependence treatments and enhanced smoking abstinence rates in the primary care setting (Papadakis et al., 2010). This review found multi-component cessation interventions were most efficacious, although the optimal combination of methods could not be identified. Components which contributed to positive outcomes included provider training, checklists, screeners, electronic medical record prompts, academic detailing, provider performance feedback, increased length of physician consultation, and adjunct counselling (Papadakis et al., 2010). The effect of cost free cessation medications alone could not be determined as they were embedded within multi-component intervention studies. In isolation, provider training, tailored print patient

education materials, screeners/vital sign stamps, and provider incentives did not affect provider treatment rates or smoking abstinence (Papadakis et al., 2010).

Interprofessional Teams Enhance Treatment Access, Support and Abstinence

The benefits of interprofessional health providers working together in the delivery of tobacco dependence treatments have been identified in several controlled trials and meta-analytic reports (An et al., 2008; Fiore et al., 2008; Gorin & Heck, 2004; Hollis, Lichtenstein, Vogt, Stevens, & Biglan, 1993; Kottke, Battista, DeFriese, & Brekke, 1988; Papadakis et al., 2010). A meta-analysis of smoking cessation controlled trials, performed in 1988, identified that having a combined intervention involving a physician and a non-physician counsellor resulted in higher mean smoking cessation rates, outperforming either practitioner working on his/her own (Kottke et al., 1988). A subsequent meta-analysis, which also noted that team advice significantly increased quit rates, found that the delivery of advice from physicians was most significant in enhancing abstinence (Gorin & Heck, 2004). Higher rates of formal smoking cessation training among physicians may account for a component of this difference. While one quarter to one third of family physicians have received smoking cessation training, other health professionals such as dentists and nurses report rates of training that are less than 20% (Tremblay et al., 2009). In addition, until more recently, family physicians alone have delivered the majority of primary health care in Canada (Curran, 2007). Hence, physicians have been able to establish a significant relationship of trust with patients over their lifetime of health care and their advice to quit may be especially powerful (Gorin & Heck, 2004). Interdisciplinary health professionals also have a significant influence on the delivery of smoking cessation treatments and play a key role in assisting patients to become smoke-free.

A meta-analysis, examining adjunct counseling provided by nurses and other interprofessional providers, demonstrated a significant increase in provider rates of assistance with pharmacotherapy (pooled OR 6.27), arrangement of follow up (Pooled OR

13.75) and overall smoking abstinence (pooled OR 1.73) (Papadakis et al., 2010). This is suggestive of a synergistic effect that may occur when multiple providers are engaged together in smoking cessation interventions. In a population survey, patients who were asked about tobacco use by two or more types of professionals were more than twice as likely to make a quit attempt (An et al., 2008). In another study, three different nurse-led strategies all resulted in a near-doubling of abstinence rates when compared with physician treatment alone (Hollis et al., 1993). It was recognized that “perhaps what the nurse did was less important than that he or she did something to support smoking cessation” (Hollis et al., 1993, p. 524). Fiore et al. (2008) have also noted, through the use of meta-analysis data, that the effectiveness of interventions delivered by multiple clinicians (two or more) resulted in a 2.4-2.5 fold increase in the estimated odds ratio for smoking abstinence. It is recognized that this effect could be confounded by an increase in the overall number of contacts with health care providers or an increased intensity of cessation interventions (Fiore et al., 2008).

Overall, more intensive support has consistently been demonstrated to raise success in the achievement of long term smoking abstinence (Fiore et al., 2008; Hall, Humfleet, Reus, Munoz, & Cullen, 2004; Kottke et al., 1988). Intensive support involves an increased number of patient contacts and duration of involvement in a treatment program (Kottke et al., 1988). While minimal interventions (those lasting less than three minutes) increase overall abstinence rates, there is a strong dose-response relationship between the session length and successful abstinence (Fiore et al., 2008). Counseling sessions lasting greater than 10 minutes more than double successful treatment outcomes (Fiore et al., 2008).

Extending the overall amount of contact time to more than 30 minutes, or increasing the number of person-to-person contacts have also resulted in higher quit rates by two-to-four fold (Fiore et al., 2008; Hall et al., 2004).

Tobacco dependence treatment, as outlined using the 5 A’s model, is feasible, cost-effective and successful at assisting patients to meet their smoke-free goals (Cromwell et al., 1997; Katz, Muehlenbruch, Brown, AHRQ Smoking Cessation Guideline, Study Group, & al, 2004). Accounting for the excess medical costs incurred by those who smoke, tobacco

dependence treatments actually save more than they initially cost to deliver (Cromwell et al., 1997). Hospital-based cessation programs employing systematic, comprehensive, interprofessional 5 A treatment strategies, have demonstrated sustained quitting success rates of 22% (for out-patients) and up to 32% (for inpatients) in clinical practice (Hurt et al., 2009; Reid et al., 2010). Studies looking at multiple practices suggest that significant achievements could also be made in the primary care setting; quit rates of 12-18% are cited (Katz et al., 2004; Papadakis, 2010; Solberg, Maxwell, Kottke, Gepner, & Brekke, 1990). One study, examining clinical guideline implementation for smoking cessation in eight primary care clinics, combined intake clinician training, a vital sign stamp (provider prompt), offers of cost free nicotine patches and/or proactive telephone counselling, as well as provider feedback (Katz et al., 2004). These interventions resulted in a 5.6% absolute increase in 6 month quit rates by patient self-report. In addition, there were significant increases in provider delivery of the 5 A components (Katz et al., 2004). Physicians were not included among the health care providers targeted for this study which may have limited interprofessional supports, pharmacotherapy options and patient outcomes.

Organizational structures and processes of care employed by primary care practices may also influence the efficacy and delivery of 5 A interventions by health professionals working in those practices. One study, exploring the influence of system interventions on tobacco dependence treatment in 60 primary care clinics, found that health care providers were significantly more likely (2.04 to 5.62 fold) to perform all 5 A interventions when they were working in a setting that incorporated enhanced delivery system designs, clinical information systems, and patient self-management supports for smoking cessation (Hung & Shelley, 2009). This included the use of proactive, planned chronic care visits (rather than reactive responses to acute illness episodes) in addition to the use of self-care strategies which provided patients with information, skills and confidence in meeting their health goals (Hung & Shelley, 2009).

Family Health Teams: An Innovative Setting to Help Tobacco Users Quit

“Collaborative practice is an inter-professional process for communication and decision making that enables the separate and shared knowledge and skills of care providers to synergistically influence the client/patient care provided” (Way, Jones, & Busing, 2000, p 3). Teams in primary care have demonstrated success in the prevention and management of mental health conditions and chronic diseases and have contributed to improvements in health status and quality of life (Barrett, Curran, Glynn, & Godwin, 2007). Patients cared for in interprofessional settings report higher degrees of satisfaction as well as enhanced health knowledge, skills and self-care strategies (Barrett et al., 2007).

In the province of Ontario, 200 interprofessional Family Health Teams (FHTs) have been established since 2005 in order to improve the accessibility, effectiveness and quality of primary care health services across the province (MOHLTC, 2011). The FHT model links physicians with interdisciplinary health professionals (IHPs) such as nurses, dietitians and pharmacists to share patient care responsibilities and enhance the delivery of comprehensive, coordinated health services (MOHLTC, 2009). FHTs differ from other Ontario primary care models such as Family Health Networks (FHNs), and Family Health Groups (FHGs) which bring together groups of physicians, assign the physician responsibility for a panel of patients and employ relatively few interprofessional providers (Rosser, Colwill, Kasperski, & Wilson, 2011). Community Health Centres (CHCs), established since 1980, include interprofessional teams working to meet the diverse needs of rural, low-income, or minority populations (Rosser et al., 2011). Nurse Practitioner-Led clinics, established in 2009, are similar in concept to FHTs and also provide interprofessional team services (Hutchison, Levesque, Strumpf, & Coyle, 2011). These newer models of practice have resulted in a significant shift in team composition; the number of family physicians working in interprofessional teams has increased from 176 in 2002 to more than 2500 in 2011 (Hutchison et al., 2011). Family Health Teams provide care for 16% of Ontarians (Health Council of Canada, 2009). The advent of interprofessional

FHTs presents a novel opportunity to enhance the delivery of comprehensive tobacco treatments using a team-based approach.

The Ottawa Model for Smoking Cessation in Primary Care

The Ottawa Model for Smoking Cessation was developed at the University of Ottawa Heart Institute (UOHI) employing a 5 A's approach to tobacco dependence treatment (Reid et al., 2010). The aim of the Ottawa Model is to increase the number of tobacco users who achieve long term abstinence by ensuring that they receive effective, evidence-based tobacco dependence treatments, delivered by knowledgeable, proactive, health care providers (Reid et al., 2010). The Ottawa Model has been adapted for the primary care setting and integrates easy-to-use practice tools, tailored protocols, and a collaborative team approach to achieve comprehensive tobacco dependence treatment services (Papadakis, 2010). The Ottawa Model was recently implemented in 40 primary care practices, including 36 FHTs. Primary care sites partnering with the UOHI receive: training in smoking cessation best practices, support conducting surveys of smoking practices pre-and post-Ottawa Model implementation, coaching and facilitation to adapt the Ottawa Model into routine clinic practices, provider tools, patient resources, performance feedback and links to follow up support services for patients to use between clinic visits (Papadakis, 2010).

In a pilot study, including 8 primary care sites, the Ottawa Model implementation resulted in significant improvements in provider delivery of tobacco dependence treatment interventions as well as increased rates of patient quit attempts (Papadakis, 2010). Considerable variability occurred across provider practices in the uptake and utilization of the Ottawa Model without clear indication of which factors influenced success. Change scores for clinic use of 5 A interventions, between the pre- and post-Ottawa Model assessments, ranged from a reduction of 12.7% to an improvement of 43% (Papadakis, 2010). An examination of provider and clinic characteristics explained some but not all of the variability observed. Minimal between-clinic variance in 5 A delivery was documented, in part related to the small number of clinics included in this study (Papadakis, 2010). In

contrast, moderate provider-level variability was found such that intra-provider variability was consistently larger than between-clinic variability. Factors which were found to be significant at the provider level included: female providers who were more likely to refer patients for follow up support, as well as nurse practitioners who were more likely to arrange follow up than were physicians (Papadakis, 2010). The factors at play are likely more complicated than simple characteristics and require further exploration. Gaining a better understanding of what processes and team-based approaches can support the Ottawa Model and delivery of evidence-based treatment is important and will be explored as part of this study.

Summary

Health teams have a prominent role to play in helping patients become smoke-free. Given that 80% of smokers visit their primary care provider each year this setting has immense potential for the delivery of comprehensive interventions which impact both individual and population health. Effective treatments are available to support patients in successful smoking cessation though their use in clinical practice is substandard when compared to the treatment of other chronic conditions such as hypertension.

Interprofessional health providers working together in the delivery of tobacco dependence treatments have demonstrated success in improving patient access to cessation treatments and achieving smoking abstinence. The recently established FHTs in Ontario provide a novel opportunity to enhance the delivery of comprehensive tobacco treatments and patient health outcomes through the use of a team approach to care.

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Chapter 3: Interprofessional Collaboration in Ontario's Family Health Teams: A Review of the Literature

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Abstract

Background

In Ontario, 200 interprofessional Family Health Teams (FHTs) have been established since 2005 to improve primary health care access, patient outcomes, and costs. High levels of interprofessional collaboration are important for team success, however effective team functioning is challenging to achieve. FHTs are in their infancy and little is known about determinants which have influenced the quality of team collaboration or the outcomes Ontario FHTs have achieved. The objective of this paper is to examine current knowledge regarding FHT functioning.

Methods and Findings

A search of the literature resulted in eleven articles for final analysis. A narrative synthesis of study findings was completed. To date, research regarding FHTs has been primarily qualitative in nature. A number of common challenges to interprofessional collaboration were identified. Despite this, patients and providers described improved health care access, greater satisfaction and enhanced quality of health care using a FHT approach. Collaboration was fostered by effective leadership, communication, outcome evaluation and training inclusive of professionals and patients.

Conclusions

Ontario FHTs have improved health care access and outcomes for patients, professionals and the health system. Collaborative team functioning, while present, has not reached its full potential. Supportive public policy, education for patients and providers, and evaluation research is needed to advance FHT functioning.

Keywords: Primary health care, interprofessional relations, family health team

Introduction

The primary care setting serves as a critical entry point to the health care system [1]. It acts as a gateway for acute treatments and management of chronic conditions, as well as preventative care, health promotion, and population health initiatives [2]. There has been considerable reform in primary care across the globe, with an increased emphasis on delivering care using a team-based approach [3]. Interprofessional primary care teams include physicians, nurses, pharmacists, and health educators among many other health professionals working side by side in clinical practice [4]. “Collaborative practice is an inter-professional process for communication and decision making that enables the separate and shared knowledge and skills of care providers to synergistically influence the client/patient care provided” [5]. Interprofessional teams improve health care access, resource utilization, efficiency of services, outcomes, and costs [6,7]. Patients cared for in interprofessional settings express more satisfaction, as well as enhanced health knowledge, skills and self-care strategies [6]. In primary care settings a team approach has been shown to be successful in the prevention and management of mental health conditions and chronic diseases and has contributed to improvements in health status and quality of life [6].

Until more recently, family physicians alone have delivered the majority of primary health care in Canada [8]. At the First Minister’s Health Accord in 2004, a goal was established to provide 50% of Canadians with 24/7 access to primary health care delivered by a multidisciplinary team by 2011 [1]. With only 10% of Canadian family physicians working in multidisciplinary practices in 2002 [9], considerable efforts were needed to achieve this target. New models were therefore designed to replace solo primary care practices. These new models offered shared work environments for family physicians with an opportunity for information exchange and collegial support [10]. They also offered patients enhanced access, safety and quality of health care [10].

In practical terms, transitioning to interprofessional team models of care has been challenging. A shift from solo-practitioner to team-based services involves more than

merely pulling together a health care practice in which multiple disciplines are provided with a mandate to work together. High levels of team functioning are difficult to achieve [11,12]. Effective interprofessional collaboration incorporates several key attributes including: the engagement of two or more professionals from different disciplines who share a common goal, shared knowledge, multiple interactions over time, an understanding of each professional's role, interdependence among professionals, symmetrical power and a supportive organizational environment [13].

Almost three decades ago, the province of Quebec established interprofessional Community Health Care Centres (CHCC), the first of their kind in Canada [12]. Despite their long history however, a study exploring team functioning at more than 150 CHCCs demonstrated that only moderate levels of interprofessional collaboration have been achieved in these primary care settings [12]. Barriers to interprofessional collaboration include the divided education of health professionals according to discipline which creates a silo mentality negating the value of professional plurality and limiting the development of mutual understanding and respect [14]. In addition, team vision, hierarchy, professional culture, medico-legal responsibilities, funding and remuneration models, communication systems, clarity of roles, understanding regarding scope of practice and population health needs have been identified as important factors which influence the intensity of collaborative care [6,14,15].

In the province of Ontario, 200 interprofessional Family Health Teams (FHTs) have been established since 2005 as a transformational strategy to improve the accessibility, effectiveness and quality of primary care health services across the province [16]. The FHT links physicians with interdisciplinary health professionals (IHPs) such as nurses, dietitians and pharmacists among others, to share patient care responsibilities and enhance the delivery of comprehensive, coordinated health services [17]. While physicians are also IHPs, they are described separately in the literature and as such, this convention has been followed within this paper. The aim of FHTs is to enhance health care access within their communities and

reduce the strain on emergency departments, providing care for orphan patients (those previously without a family physician) and expanding available hours of service [17]. Goals include the provision of patient centred care, access to a variety of health professionals, assistance with health system navigation, expanded preventative care services and chronic care management [17]. FHTs are customized to meet the unique needs of their community. As such, they vary in size, spatial organization, team composition, governance models, partnerships and range of programs offered. FHTs in Ontario provide health care services to approximately 2.7 million people, of which 578,000 previously did not have a regular family physician [16]. These teams are in their infancy and little is known about the characteristics which have influenced the quality of team collaboration in FHTs or the outcomes Ontario FHTs have achieved using a team-based approach.

It is not known whether Ontario FHTs have been successful in transforming into effective team environments, mitigating common challenges to collaborative team functioning. It is also not known whether there are unique determinants which have particular importance for interprofessional collaboration in this setting. A deeper understanding of the factors that support collaborative interprofessional practice provides an opportunity to assess current FHT functioning, effective strategies for collaborative care and gaps which need further attention as these models of care progress.

Research Objective

The objective of this paper is to conduct a review of the literature and examine what is currently known about FHT team functioning in Ontario. Aims include the identification of determinants which have been found to influence the success of interprofessional collaboration and effective team practices within Ontario's FHTs, as well as an assessment of patient, provider and health care system outcomes achieved within FHTs.

Methods

A literature search was conducted using the MeSH heading “Primary Health Care” and the keyword search term: “Family Health Team” within Medline and CINAHL. The search was restricted to the English language and publications after 2005 as this year coincided with the inception of FHTs in Ontario. This search was completed April 10, 2012. It also included review of grey literature such as thesis and dissertation abstracts, Google scholar, and a review of Canadian and Ontario government and research websites. Bibliographic references from retrieved articles were also hand searched for relevant publications. The abstracts of all articles were screened for inclusion in this analysis by the lead researcher [SG]. Articles were included if the focus was on Ontario FHTs, and examined either collaborative team characteristics or FHT outcomes. Articles were excluded for the following reasons: duplication, article based on debate or commentary, study not pertaining to an Ontario FHT, no evaluation of FHT team characteristics or outcomes. Full text articles retrieved were reviewed according to the same criteria.

The analysis of selected research articles commenced with an exploration of study characteristics, methodology, and outcomes. This was followed by an examination and synthesis of the determinants of interprofessional collaboration and FHT outcomes according to the identified research objectives. No framework was used a priori for the analysis to allow new concepts to be identified.

Findings

Ninety-five articles were identified for review (Figure 1). Four additional articles were generated from a review of the bibliographic references of retrieved articles, Google scholar and a search of government websites for research reports. No further studies were identified by hand searches of the two journals from which most of the eligible studies were identified (*Canadian Family Physician and Journal of Interprofessional Care*). After initial screening

of titles and abstracts, 38 articles were identified for full text review. Eleven articles were included in the final analysis.

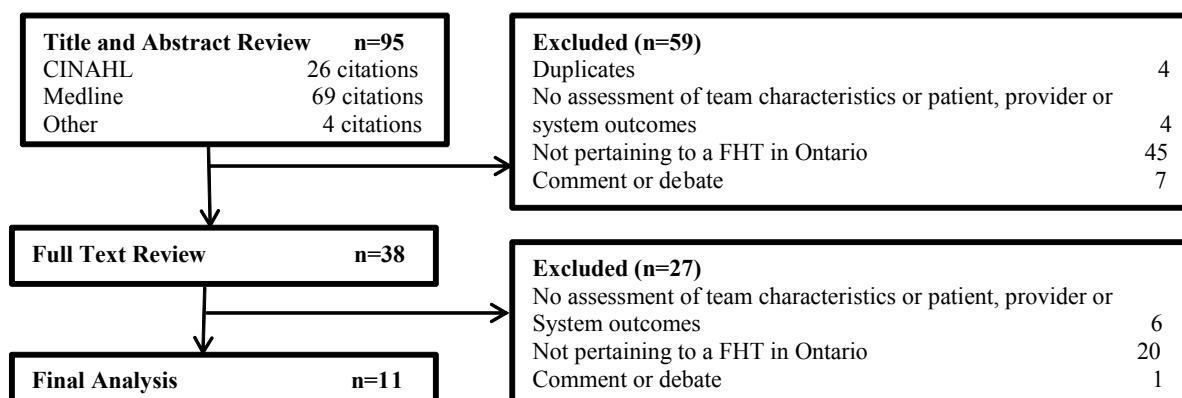


Figure 1 Literature Search

Study Characteristics, Methodology and Outcomes

A review of articles included in this analysis is provided in Table 1. Collectively, these 11 studies, published between 2008 and 2011, included 87 FHT organizations, 694 FHT staff members and 80 patients/family members. All studies except two were qualitative in nature, with the majority using a case study methodology. Two utilized a mixed methods approach. Data collection methods included interviews, surveys, focus groups, observation, chart audits and documentation review. Eight studies were published in peer reviewed journals, a further three were obtained from grey literature including final reports from academic or health research institutions. Among these, eight studies were designed to examine teamwork or interprofessional collaboration. The remaining three studies were focused on patient and physician experiences in transitioning to a FHT setting, the status of integrated mental health services in Northern FHTs, and the impact of integrated memory clinic services in primary care teams.

Table 1. Article Review Summary

Author(s), year and type of publication: Peer reviewed (PR) or Grey literature (Grey)	Study Design	Method of Data Collection	# of FHTs in study	# of staff or patients in study	Outcomes examined	Primary Findings
Conn et al., 2010 (PR)	Ethnography	Interviews and unstructured clinic observation	1	72 staff	Transformative organization changes in teamwork over 2 years	Perceived outcomes in team functioning: improved patient centeredness, efficiency, access, continuity of care and patient satisfaction. Formal and ad hoc communication increased. A clear vision, inclusive of the team was deemed important. Professional silos, hierarchical structure, physical space separation and medico-legal responsibilities served as barriers to optimal team functioning. Overall, team transformation was slow, incremental and ongoing.
Doran et al., 2009 (Grey)	Mixed methods study	Interviews and surveys	8	8 staff interviews 56 staff surveys	Interprofessional collaboration and FHT communication styles; Level of staff training in interprofessional collaboration; and Impact of FHT setting on capacity to treat patients.	Interprofessional collaboration increased health care provider abilities to deliver care. Challenges included communication between health care providers and with patients regarding new model of care; power struggles; and provider roles/scope of practice. Positive impacts in capacity to treat patients included: one stop shopping, increased access to health care and the right provider, timely communication through electronic medical record (EMR) use, enhanced effectiveness of care, decreased emergency room use and improved quality of patient care.
Goldman, et al., 2010a (PR)	Case study	Semi-structured interviews	12 FHTs and 2 primary care teams	32 staff	FHT members experiences of: a) interprofessional collaboration; and b) it's perceived benefits	Significant changes were experienced in traditional roles and scope of practice; management and leadership played an important role as well as interprofessional initiatives, shared time and shared space. Gains in patient centred collaborative care were noted as well as enhanced primary care. Patient adjustment and education regarding the new model occurred with perceived patient benefits.
Goldman, et al., 2010b (PR)	Case study	Semi-structured interviews; Observation of 5 task group meetings; project documentation	12 FHTs and 2 primary care teams	36 staff	Perceptions of interprofessional collaboration during protocol development and implementation; and collaborative processes used	Protocol development included a focus on best practice evidence, team collaboration and targeting of FHT needs. Participants expressed variable expectations for implementation. Protocol implementation strategies included the identification of champions and leaders as well as events to enhance awareness, disseminate evidence and provide formal education. Stage of team formation, staff mix, EMR adaption of protocols and spatial organization of FHTs affected protocol implementation. Participants perceived improvements in interprofessional collaboration, understanding of roles, screening practices, referral processes and communication.

Howard, et al., 2011 (PR)	Cross-sectional study	Mailed survey	21	411 staff	Scores on the team climate inventory and organizational factors of FHTs.	Interpersonal aspects of care such as culture, leadership, and EMR functionality were more important in predicting team climate than organizational composition of the teams (eg, number of HCP on staff, practice size, number of sites, governance structure).
Kates, N., et al., 2011 (PR)	Case study	Qualitative assessment	1	Note: 81 sites are integrated in this one FHT network	Influence of the Hamilton Family Health Team Mental Health Program (HFHT-MHP) on mental health services	Increased access to mental health services for children, adults and seniors as well as decreased wait times, earlier detection and treatment, expanded capacity, improved patient comfort, improved communication and coordination of care. An integrated approach to patient physical and emotional needs resulted in enhanced mental health outcomes.
Lee et al., 2010 (PR)	Mixed methods study	Chart audits, service records, surveys	1	8 staff 55 patients/caregivers	Influence of an interprofessional memory clinic team on the assessment and management of dementia	Increased access to memory assessment services and treatment of dementia. Enhanced referrals for community resources. "Very satisfied" patient and caregiver ratings. Family physician were "very satisfied" with the Memory Clinic services and reported increased confidence in their ability to assess and manage cognitive impairment.
Mulvale, Danner, & Pasic, 2008 (PR)	Case study	Semi-structured, open-ended telephone interview	10	38 staff	Factors influencing provider mix and quality of collaboration in mental health care among FHTs	Provider mix was influenced by funding, remuneration, scope of practice and research involvement. Physical space, population health needs, provider supply, geography, and local health systems also played a role in provider mix. Quality of collaboration was influenced by remuneration, practice scope, and accountability in addition to communication, professional culture, hierarchy, team vision, space and co-location.
Ragaz et al., 2010 (PR)	Case study	Interviews	4	10 staff	Essential leadership strategies for successful team functioning in FHTs	Essential leadership strategies included education and engagement of physicians in team model; shared understanding of interdisciplinary scope of practice and roles; open communication; strategies to balance Ministry and FHT priorities; establishment of early success; team-focused policies and targeted hiring practices, integration of EMR tools for communication, referrals, program planning and evaluation; sharing of success and continuous adaptation.
Sherman et al., 2010 (Grey)	Qualitative Descriptive Study	Semi-structured telephone survey interviews	14	14 staff	Degree to which Northern FHTs have integrated mental health services in primary care	The majority of FHT sites (10/14) had integrated some degree of mental health services in primary care. Just over half added at least one health provider to their interprofessional team who delivered counselling, assessment, referral and system navigation services. Accessibility to psychiatry services was problematic: only 4 FHTs reported regular and ready access to a psychiatrist.

Stalker, 2010 (Grey)	Qualitative pilot study	Interviews and focus groups	1	9 physician staff 25 patients	How physicians and patients have experienced the shift to a FHT model	Physicians reported increased satisfaction, less burnout and enhanced collegial support within the FHT model. Enhanced time and quality within patient interactions were also reported by physicians. Interdisciplinary health professionals were perceived to have improved the quality and breadth of patient care. Patients reported high satisfaction and increased access to care. Appreciation for the collaborative approach, holistic care, extended services and decreased wait times was also described by patients. EMR was seen by patients to increase communication, efficacy, and accuracy of care.
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Important Determinants for Interprofessional Collaboration and Effective Team Relationships in a FHT

Characteristics identified as important for collaborative team practices were assessed in all 11 studies. Several determinants were identified as important for interprofessional collaboration and effective FHT relationships (Table 2). Factors influencing collaborative team practice stemmed from three different levels of influence on FHTs including broad health care system determinants, a FHTs local context, and team determinants within individual FHT organizations.

Health Care System Determinants

Factors that supported effective interprofessional collaboration within FHTs at the health care system-level included adequate funding, human resources, remuneration incentives, and degree of professional preparation for collaborative practice.

Adequate funding, remuneration, and human resources. Adequate funding for interdisciplinary health professionals (IHP) enabled FHT patients to access primary health care services which were not previously available, such as mental health care and chronic disease management programs [15,18]. Physician remuneration changes from fee-for-service to blended capitation were credited as an important facilitator of collaborative care and a promoter of patient centred services [15]. Some teams however reported difficulty recruiting physicians or filling certain IHP positions limiting the advancement of collaborative care activities and needed clinical programs [15,19]. Recruitment challenges were multifaceted including geographic barriers with low representation of certain professional groups as well as inadequate remuneration of select IHP groups with low salary benchmarks compared to those in the hospital sector [15,20,21]. In FHTs, funding for IHPs is based on the number of rostered patients under the care of a family physician hence family physician shortages also limited funding opportunities for IHP team members making comprehensive care more difficult to provide [20].

Degree of professional preparation for collaborative practice. Six studies reported a need for enhanced professional preparation for collaborative practice [15,20-23,26]. Doran and O'Brien-Pallas (2009) described limitations in this area, reporting that only half of the professionals in their study received training for collaboration prior to FHT employment [21]. Moreover they also noted that, while 62.5% of the participating FHTs provided collaboration training for staff after joining the FHT, only one of the FHT organizations provided training to all team members, limiting the reach of this intervention [21]. Interprofessional educational forums were regarded as a means of increasing collaboration, enhancing understanding of professional roles, and supporting a team approach to care in day to day practice [15,20-23,26].

Local Determinants

Characteristics specific to a FHT's local context included the degree of Electronic Medical Record (EMR) integration and the formation of community alliances or program facilitation partnerships.

EMR integration. A highly functional EMR system for sharing and management of patient clinical data, decision making support and order entry was deemed important for interprofessional collaboration [19,22,24]. EMRs were identified as a critical tool for consistency in clinical care, continuity, and communication, in addition to data management for quality improvement, program planning and evaluation [15,22,23,25]. Teams described challenges in implementing EMR systems without dedicated human resources and identified a need to allocate EMR system management into the role of a staff member with technical expertise [23]. In some instances, challenges in updating EMRs limited the advancement of interprofessional team protocols and practices [19].

Community alliances or program facilitation partnerships. Three studies described benefits to collaborative team practice that resulted from inter-organizational or external partnerships and facilitation [15,19,26]. To enhance local health care delivery, FHTs have

been encouraged to collaborate with community partners [17]. FHT groups recognized they were interdependent with community partners in order to meet the broad spectrum of patient needs. They discovered that coordinated partnerships were necessary for comprehensive mental health care and to manage complex chronic health needs [15,19,26]. External project managers and facilitators were credited with providing assistance to teams in tool development, system planning and project advancement as FHT members found it difficult to dedicate time towards these tasks [19].

Team Determinants

The final group of factors pertained to team determinants. These included clarity of vision, hierarchical structure, use of a patient centred approach to care, group culture, effective leadership, communication, shared time and shared space. Other factors included adequate systems and processes to ensure that the right patient is seen by the right professional, roles and scope of practice that are clearly defined and understood, in addition to patient education regarding each professional's role in the collaborative care process.

Clarity of vision. The FHT vision was viewed as an active process and philosophy of care in which team efforts were coordinated towards a larger goal [15]. A clear team vision defined team culture and set the foundation for collaborative practice. In and of itself however, a vision inclusive of team practice did not translate directly into effective team functioning for FHTs [27]. Professional silos, spatial separation and hierarchical structures precluded the establishment of a shared vision [27]. In order to translate a vision from words into actions, teams needed guidance and explicit support from administrative and clinical leaders, as well as dedication of resources [19].

Group culture, flattened hierarchy and effective leadership. Effective leadership as well as mutual trust and respect within the team culture are essential in the team environment [23,24]. FHT leaders described strategies to develop the desired group culture including targeted hiring based on key attributes such as tolerance of uncertainty and flexibility,

leadership qualities and degree of initiative [22,23]. Effective human resource policies were also identified; these policies fostered a collaborative team structure, clear guidelines surrounding expectations for practice, enhanced conflict resolution and reduced professional hierarchies and disputes [22,23]. Effective administrative leadership unified team differences, enhanced problem solving, and provided support for innovative clinical practices [24,26].

Teams with a hierarchical structure reported negative effects from this work structure on teamwork [24]. However, shared power and accountability within group culture were challenging to operationalize [22]. Visible physician leadership was important to endorse team collaboration and provide role modeling for physician colleagues who were slower to embrace shared responsibility within the team, given the shift in expectations from solo-practitioner, independent practices [19,22,23,26]. A change in general discourse was suggested as a strategy to conceptualize the team differently; non-physician and physician staff were often separated in the language used by the team, serving as a barrier that restricted egalitarian advancement [27]. In addition comments from patients or physicians that described staff as belonging to a physician such as “my nurse” negated collaboration and reinforced a vertical hierarchy [21,27]. Current Canadian medico-legal responsibilities, wherein physicians shoulder primary accountability, were also seen as a barrier to shared responsibility and flattened hierarchy structures [27].

Clearly defined and understood roles and scope of practice. Health care professionals working at FHTs noted substantial changes, as well as uncertainty in their roles and responsibilities [22]. IHPs reported that working to their full scope of practice was a rewarding component of working in a FHT setting. However many IHPs described the challenges and frustration of defining unique contributions and educating clinical and administrative colleagues about their roles [21,23]. In order to optimize team effectiveness, a careful balance between role clarity and role flexibility was described in which overlapping

scopes could be delineated based on patient needs, unique professional skills and individual comfort level [15,23,26]. For physicians in particular, engagement and education around the role of IHPs were important to reduce team tensions and help physicians transition from a self-reliant style of practice to a shared care approach [15,21-23].

A patient centred approach to care and patient education regarding their role. Teams that focused on patient centered approaches to care were able to more readily engage in collaboration and innovation through their focus on meeting patient needs rather than organization of care according to professional convenience [15,18,27]. Patients however, experienced misunderstandings regarding the FHT model of practice as they were used to receiving care almost exclusively from their physician [21,22]. Not unlike all members of the FHT staff, patients also had learning needs; education of patients regarding interprofessional practice assisted patients in adjusting their expectations of care and facilitated patient participation in the team-based model of practice [18,22].

Systems and processes to ensure the right patient is seen by the right professional. It was noted that the key to patient access and FHT efficiency was ensuring patients are seen by the right professional for their care [22]. Structured referral processes, triage systems, and interprofessional dialogue were used to assist in the navigation of care and to enhance the efficiency and effectiveness of team functioning [21,22,23,25]. These strategies were credited with reducing wait times and streamlining care as well as expediting services for those at highest risk [22,23,25]. These systems were evidence-based and tailored to match team resources and population needs [19,25]. Interprofessional representation in the development of systems enhanced understanding of diverse professional roles and the establishment of practical and relevant team protocols [19]. Buy in from key stakeholders and FHT leaders were essential during protocol planning and implementation to support changes from the status quo [19].

Communication strategies, shared time and space. Communication was an essential component for developing group culture and creating a shared sense of accomplishment within the team [23]. Multiple communication strategies were reported to keep administrative and health care team members informed and engaged. This included emails, EMR messaging, team meetings, interprofessional committees, case conferences, brief daily “team huddles”, education rounds, team retreats and hallway conversations [21,22,23,27]. Challenges in engaging physicians were reported in three studies, with physicians remaining peripheral to team meetings and unit events [19,21,27]. Spatial divisions within FHT organization within offices or across FHT sites hindered opportunities for interprofessional collaboration and practice changes [19,22]. FHT staff highlighted the importance of shared time and space in fostering communication and collaborative care [15,27].

Table 2: Important Determinants for Collaborative Team Practice in a FHT Setting

Article	Clear vision	Flattened hierarchical structures	Physician (GP) leadership and management leadership	Effective communication and EMR integration	Shared time and shared space among HCPs	Education /training to prepare professionals (HCP); education to prepare patients	Clearly defined and understood roles and scope of practice for each HCP	Group culture / roles based on provider strengths	Establishment of a system or process to ensure patients see the right professional	Patient centred care focus	External partnership	Adequate funding, human resources (HR), and remuneration
Conn et al., 2010	+	+	N/A	+communicate	+time +space	N/A	+	N/A	N/A	+	N/A	N/A
Doran, O'Brien-Pallas, 2009	N/A	+	+ Mgmt	+communicate + EMR	+ time	+ HCP + patients	+	+	+	N/A	N/A	+ funding + remuneration
Goldman et al., 2010a	+	N/A	+ GP + Mgmt	+communicate + EMR	+ time + space	+ HCP + patient	+	+	+	+	N/A	N/A
Goldman et al., 2010b	N/A	N/A	+GP + Mgmt	+communicate + EMR	+ time	N/A	+	N/A	+	N/A	N/A	+ HR
Howard et al., 2011	N/A	+	+ Mgmt	+communicate + EMR	N/A	N/A	N/A	+	N/A	N/A	N/A	N/A
Kates et al., 2011	+	N/A	+GP willingness + Mgmt	+ EMR	+ time	+ HCP	N/A	+	N/A	+	+ partners	+ funding + HR
Lee et al., 2010	N/A	N/A	N/A	+communicate +EMR	N/A	N/A	+	N/A	+	+	N/A	N/A
Mulvale, Danner, & Pasic, 2008	+	+	N/A	+communicate + EMR	+ time + space	+ HCP	+	+	N/A	+	+ partners	+ funding + HR + remuneration
Ragaz et al., 2010	+	N/A	+ GP + Mgmt	+communicate + EMR	+ time	+HCP	+	+	+	N/A	+ partners	+ funding + HR
Sherman et al. 2010	N/A	N/A	N/A	N/A	N/A	+HCP	+	N/A	+	+	N/A	+ funding + remuneration + HR
Stalker, 2010	+	N/A	N/A	+communicate + EMR	+ space	+ patients	+	N/A	+	+	N/A	N/A

N/A = Not assessed; + indicates determinant was present in article

Health care system determinants: HR, Funding, Remuneration, Education/training to prepare HCP (Health care professional)

Local determinants: Community partnerships/facilitation, EMR integration

Team determinants: Vision, patient centred care, hierarchical structures, management and physician leadership, communication strategies, shared time and space, systems and processes to ensure right provider sees the right patient, group culture with a focus on provider strengths for determining they right provider for the task, clearly defined and understood roles and scope of practice, patient education.

Outcomes of a FHT Approach to Care

Eight studies included evaluation data pertaining to patient, provider and health care system outcomes. These were primarily qualitative in nature.

Enhanced access to primary care and extended health services. Enhanced patient access to primary care services was described in all eight studies reporting outcomes. For patients, this was identified as one of the most prominent benefits of participating in a FHT setting [18]. Availability of after-hours clinical services, reduced wait times and IHP services were seen as key drivers to enhancement of patient access [18]. In addition to improved access to basic primary care service, participants reported enhanced access to extended health services and more holistic care compared to what was previously available [19,21,22,26]. In some cases, preventative health care, chronic disease management and mental health care services were perceived as “add-on” components of care, rather than core services despite their central role in primary care [20]. Physicians noted that the diversity of professional expertise available in a FHT practice allowed them to address patient concerns they did not previously have the resources or skills to attend to thus changing their health management approaches [18].

Improved coordination, collaboration and patient centredness. Teams described improvements in their ability to provide comprehensive, coordinated, patient-centred services [15,22,25-27]. They described efficiencies based on patient needs rather than the needs of the professional. For example, multiple provider visits were coordinated on the same date for patient convenience and respect for patient time and resource constraints [27]. For patients, coordination of care through their primary care provider resulted in “one stop” services, improved patient choice, motivation for self-management participation and enhanced comfort and ease with which they received health services [18,20,26].

Clinical outcomes. There was a consensus across research studies that interprofessional collaboration among FHT practitioners generated improved clinical

outcomes for patient care in areas such as health promotion, disease prevention, chronic disease management, and mental health services [15,18,21,26].

Patient satisfaction. Enhanced patient satisfaction with care was described in five (out of eight) studies reporting outcomes [18,22,25-27]. Enhancements to patient access, comprehensive care, coordination of care, patient centeredness, adequate time during appointments, and opportunities for shared decision making were credited for these improvements [18,22].

Provider Outcomes

FHT professionals involved in interprofessional collaboration reported greater understanding of professional roles [22] and improvements in their professional skills and capabilities [25,26]. Moreover, physicians reported a greater sense of satisfaction within a FHT model of practice [18]. They indicated that working within a team provided increased collegial support, afforded them more time to spend with patients, and enhanced access to the resources needed to provide quality patient care [18].

Health Care System Outcomes

Increased health care access and efficiency. Providers reported improvements in the standardization of screening practices and accessibility of services [19]. Improved triage systems and referral processes were described which helped to ensure the right patients were seen by the right provider for the right health concern [19,26]. System navigation services also helped patients to access care more readily in their communities [20,25].

Increased effectiveness. Staff described improvement for patients who had been at a standstill in their health progress and credited broad commitment to working as a team [27]. More effective use of health resources, enhanced community partnerships and improvements

in clinical outcomes were also reported [19,21,25,26]. In addition, Emergency Department use decreased [21].

Changes in wait times. Decreased wait times were identified by both patients and providers as an enhancement to care [18,26]. Patient wait times decreased for primary care appointments, diagnostic testing and services such as mental health assessment [18,26]. In some cases, however, despite increased availability of social work or psychiatry services for example, accessibility issues remained as a result of high referral volumes or eligibility restrictions [18,20]. Patients also noted that while appointments in general were readily available with a variety of health professionals within the team, they experienced a longer wait to see their own personal physician [18].

Table 3: Outcomes of FHT Interprofessional Approach (n=8 studies)

Article	Enhanced patient satisfaction	Enhanced provider satisfaction	Improved quality of health care	Increased patient centred care	Extended/comprehensive health services and more holistic care (preventive, mental health, chronic disease management)	Increased patient access to health care services	Decreased patient wait times	Increased efficiency (use of the right provider for the right patient)	Increased effectiveness	Increased coordination and collaboration in care
Conn et al., 2010	+	N/A	+	+	N/A	+	N/A	+	+	+
Doran, & O'Brien-Pallas, 2009	N/A	N/A	+	N/A	+	+	+	+	+	+
Goldman et al., 2010a	+	N/A	+	+	+	+	+	+	+	+
Goldman, et al., 2010b	N/A	N/A	N/A	N/A	+ screening and referral: diabetes, depression, end of life care and 18 month well baby visit	+	N/A	N/A	N/A	+
Kates et al., 2011	+	N/A	+	+	+ mental health	+	+	+	+	+
Lee et al., 2010	+	+	+	+	+ cognitive assessment and treatment	+	N/A	+	+	+
Sherman et al., 2010	N/A	N/A	N/A	N/A	+ mental health	+	N/A	N/A	N/A	+
Stalker, 2010	+	+	+	+	+	+	+	+	+	+
N/A = Not assessed; + indicates outcome was present in article Howard et al., 2011; Mulvale, Danner & Pasic, 2008; and Ragaz et al., 2010 were excluded on this table as these studies did not report outcome data.										

Discussion

This review and analysis of the literature was conducted to establish a deeper understanding of FHT team functioning in Ontario. There are a number of common challenges to interprofessional collaboration within FHTs despite their clear mandate for team-based practice and Ontario Ministry of Health guidelines for establishing collaborative care. Notwithstanding these challenges, there is some evidence that interprofessional collaboration is gradually taking shape within these team-based practices and several positive outcomes have been identified through qualitative research in FHTs.

Patient and provider perceptions around the outcomes of collaborative care in a FHT setting suggest that interprofessional teams were able to provide enhanced access to care and extended health care services compared to what had previously been offered in a uni-professional model of care. Both patients and providers experienced more time for care and enhanced quality of health services. Interprofessional collaboration also assisted providers with shifting their approach to health care, addressing mental health or chronic disease concerns they previously avoided given their lack of professional resources or expertise. They described changes to health management approaches that were directly related to having access to skilled IHPs who could assist patients to effectively cope with diverse aspects of their health condition(s).

This literature review reinforces what has previously been found in research looking at interprofessional collaboration and team functioning within other health care settings. For example, in keeping with prior studies and systematic reviews, shared time and clinical spaces were seen as essential building blocks for team cohesion and collaborative practice [14,28]. In addition, interpersonal aspects of care such as group culture, leadership, and EMR functionality were found to be significantly more predictive of team climate than the organizational composition of the teams (such as number of health professionals on staff, practice size, number of sites, governance structure) [24]. This was also noted by Sicotte et al., (2002) in their analysis of CCHCs in Quebec where contextual factors were found to

have a limited impact on interprofessional collaboration compared to the significant effects of internal work group dynamics [12].

A clear team mission, established goals, and operational objectives have also been identified in previous research as important to the foundation of effective teamwork [29,30]. More than half of the research articles included in the current synthesis identified the importance of a clearly defined vision inclusive of the team approach to care. Together with clear team objectives, specific, measurable operational goals were seen as an important determinant of team success [23]. It was acknowledged that in the early development of FHTs, evaluation systems may assume a low priority; however their use provides teams with important benchmark data and impact assessment outcomes, assisting teams with resource allocation and program planning [23]. In previous research, formal assessment or evaluation of quality of care outcomes and program achievements were found to influence the intensity of collaboration [12].

The importance of strong leadership was also a notable determinant for effective FHT functioning. This leadership provided the groundwork for mutual trust and respect within team culture, and fostered a supportive work environment [23,24]. Leadership from family physicians was also an important factor in achieving shared responsibility, accountability and reducing hierarchical structures [19,22,23,26]. Mutual interdependency, partnership, and symmetry in power have been identified as key concepts in interprofessional collaboration [14,30]. The disciplinary isolation in which health providers are educated is a known barrier to collaboration [14]. The important role of training, role modeling, effective leadership, continuing education and facilitation in the refinement of team culture and collaborative practices were identified in this review [21-23].

This review builds on the knowledge that health teams benefit from training in collaborative care [14]. Training among patients is also needed to enhance their ability to take an active role in collaboration. Several studies indicated that patients needed to adjust

to the group structure of FHTs and benefited from education regarding IHP roles [21,22]. Miscommunication resulted in patient resistance to care from IHPs, inadequate knowledge regarding professional roles, and underutilization of provider resources [21]. A lack of patient understanding around professional roles could also limit full participation by team members and impede gains in patient outcomes that could be achieved through shared disciplinary expertise. Visible team care has been described as care in which the roles of each health provider are known and understood by the patient [7]. When invisible team care occurs, the roles and identities of IHPs are not clear to the patient and these health care providers are referred to as “not my doctor” [7]. Knowledge gaps exist in the examination of patient perspectives and patient readiness for collaborative roles within interprofessional models of care.

The importance of collaborative processes, including coordination and communication mechanisms, has previously been identified as a core concept within interprofessional collaboration [14,30]. This includes the establishment of processes or systems to assist patients in accessing the right provider for the right health concern. EMR integration and partnership/facilitation support are less studied elements which were identified for their importance in establishing enhanced collaborative processes of care. Dedicated human resources, funding and technical expertise were essential to EMR system integration and the advancement of interprofessional team protocols and practices [19,23]. Significant benefits resulted from coordinated partnerships and facilitation support for tool development, system planning, and team progress in the delivery of health promotion, preventative programs and chronic disease prevention and management [15,19,26].

Strengths of this literature review include the identification of research studies which collectively involved 87 FHT organizations, 694 FHT staff members and 80 patients/family members. FHT participants were represented by a variety of interprofessional team members and diverse FHT settings. Key determinants of interprofessional collaboration identified

through these research studies were reinforced by what has been previously published in systematic reviews.

Limitations of this study included low levels of quantitative research evidence and an under-representation of the patient's perspective as a key participant in interprofessional collaboration.

Implications for Practice, Education, Research and Public Policy

FHTs are proliferating in Ontario; as such, considerable focus and attention should be made to expedite and optimize interprofessional team functioning, thereby facilitating the achievement of improved accessibility, effectiveness and quality of primary care health services across the province.

Health care providers and administrative staff in FHTs are not alone in their need for preparation to collaborate in the advancement of high-quality patient care. While there is a definite need for professional education among health providers and administrative staff, it is also important to recognize that patient factors influence the quality of interprofessional collaboration. As a key participant in shared decision making and team-based care, patients need education and practical support to assume their central role within interprofessional teams. Accessing the right provider for the right health concern requires patients to be aware of the various scopes of practice and skills provided by a variety of health care practitioners.

D'Amour et al., (2005) have described gaps within interprofessional frameworks of care which have poorly conceptualized the role of patients in the collaborative process [30]. Patients and professionals alike need support to optimize their use of interprofessional models of practice. Further research therefore is needed to examine strategies which integrate patients more fully in the collaborative process. This should incorporate the perspective of patients to further understand their needs and enhance interprofessional collaboration in a fashion that endorses the patient's lead role in their health care.

Evaluation of concrete operational measures must also become a higher priority amongst FHT leaders, clinicians and funding agencies. There is a paucity of quantitative data regarding FHT outcomes to date. Internal assessment of quality of care and program accomplishments can enhance the intensity of interprofessional collaboration [12]. Integrated supports and prioritization for quality improvement planning cycles and evaluation research are greatly needed in Ontario FHTs. The integration of electronic medical records (EMRs) in all FHTs was in part to facilitate evaluation of local population needs and program effectiveness [31]. Internal evaluation and feedback may in and of itself provide a means to intensify collaboration through the identification of successful programs, effective team partnerships, and reinforcement of collective actions which result in positive outcomes. Publication of evaluation findings is important for the replication of successful strategies and sharing of programs which demonstrate the greatest patient benefit across Ontario FHTs.

It is not enough for policy makers to establish interprofessional primary care practices. Careful planning is needed in the development of shared work space and supported EMR systems which facilitate easy communication and interprofessional program development. In addition to adequate funding, a need was identified for a funding model that remunerates all members of the interprofessional team in a way that supports interprofessional care and collaboration.

Policy makers need to provide leadership in the prioritization and standardization of preventive care, mental health services and chronic disease management as core elements of primary health care rather than allowing these essential services to be regarded as optional or “add-on” components of care. For health care teams, evidence-based educational interprofessional programs, community partnerships, and facilitation support may prove to be useful strategies to more fully develop provider skills and competence in the delivery of

comprehensive primary health services, providing benefits and positive outcomes for both patients and providers alike.

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Author Contributions

Sophia Gocan contributed to conception and design of the study, data collection and analysis, and writing of drafts, revisions, and final manuscript.

Kirsten Woodend contributed to the design of the study, data analysis and critically important content for research methodology.

Mary Ann Laplante contributed to data analysis and manuscript revisions.

All have approved the final version of the submitted manuscript and the order of authorship.

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Chapter 4: Family Health Teams: An Opportune Setting for Helping Tobacco Users Quit

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Abstract

Background: The primary care setting serves as a critical entry point to the health care system and acts as a gateway for tobacco dependence treatment. Despite the window of opportunity that is present in each health care encounter and the effectiveness of currently available treatments, health care providers often neglect to intervene. The aim of this study was to explore the role of interprofessional collaboration in the planning and delivery of an interprofessional, team-based tobacco dependence treatment model (The Ottawa Model for Smoking Cessation) within a primary care practice.

Methods: A single, multi-site, qualitative exploratory case study approach was employed, guided by the Chronic Care Model and the Ottawa Model for Smoking Cessation framework. Eight semi-structured interviews were conducted in addition to site observation and a review of site documentation pertaining to tobacco dependence treatment. The data were analyzed using an interpretive descriptive approach. A thematic summary was developed based on the main elements and relationships found in this analysis.

Triangulation of data sources and perspectives were utilized to enhance the validity of the findings.

Results: Three key themes were identified whereby interprofessional collaboration influenced tobacco dependence treatment: initiation of system-wide change; cultivation of collective action; and enhanced quality of smoking cessation care within the organization and community.

Conclusion: Study findings highlight the importance of engaging all team members and applying strategies to influence tobacco dependence treatments system-wide.

Interprofessional collaboration influenced tobacco dependence treatment implementation, sustainability and advancement through integration of diverse administrative and clinical roles. Leadership, partnership/facilitation, evaluation, communication and advocacy were found to play important roles in the successful delivery of evidence-based care for patients trying to quit smoking.

Keywords

Primary health care, smoking cessation, patient care team, interprofessional relations

Background

Smoking is the single greatest cause of preventable death and disability worldwide [1]. In Canada, 18% of the population over 15 years of age are current smokers [2]. Smoking cessation however is one of the most significant missed opportunities in health care today [3]. Despite widespread patient interest in quitting and the effectiveness of currently available treatments for tobacco dependence, health care providers often neglect to intervene [4,5]. Among adult smokers in Canada, close to 70% report they would like to quit smoking and about 45% make a serious quit attempt each year [6]. Unfortunately, less than 30% of quitters use treatments that have been shown to enhance their ability to become smoke free [7]. Without behavioural counselling or pharmacotherapy support, unaided smokers find quitting especially difficult with only 3-7% achieving long term abstinence [4,8,9]. Among individuals in Canada who smoke, 80% visit their primary care provider each year [2].

Since 2005, the province of Ontario has established 200 interprofessional Family Health Teams (FHTs) in order to improve the accessibility, effectiveness and quality of primary care health services across the province [10]. Interprofessional primary care teams include physicians, nurses, pharmacists, health educators and other allied health professionals working side by side in clinical practice [11]. These teams have been heralded for their ability to improve health care access, outcomes, and costs [12]. To date, these successes have not been realized in tobacco dependence treatment where primary care performance has been substandard compared to intervention rates for other chronic diseases.

A survey of Canadian health professional groups using self-report data indicated that the provision of assistance for smoking cessation is inconsistent across disciplines, ranging between 8 and 63% [13]. Furthermore, provider follow up support for those attempting to quit is scarce with self-reports between 0.3 to 15.7 percent [13]. Further validation of low provider intervention rates comes from patient survey reports where tobacco users have

indicated that only 51-71% of health care providers advised them to quit smoking; 56% assessed their willingness to quit, 15-49% offered assistance, 3-8% prescribed medication and 3-9 % arranged follow up contact [14-17]. Treatment of tobacco dependence pales in comparison to other chronic conditions such as hypertension, where 80% of Canadians receive evidence-based interventions and 66% are successfully treated for high blood pressure [18]. The advent of interprofessional FHTs presents a novel opportunity to enhance the delivery of comprehensive tobacco treatments using a team-based approach.

Multiple health providers working together to deliver tobacco dependence treatments have significantly improved patient access to comprehensive treatments and overall rates of smoking abstinence [4]. It is not clear however, how collaborative professional roles and shared clinical processes are best performed among primary care team members in the delivery of evidence-based smoking cessation treatments.

Tobacco Dependence Treatment Framework

Tobacco dependence represents a chronic, addictive, relapsing condition. As such, the Chronic Care Model (CCM) and the Ottawa Model for Smoking Cessation in Primary Care (The Ottawa Model) were used to provide the theoretical underpinnings for this research [19, 20]. The CCM is a primary care framework aimed at improving the quality of care for patients with chronic diseases [21]. It incorporates evidence-based interventions within broad community and organizational structures that are recognized as essential for chronic disease management [20]. One of the key assumptions underlying the CCM is a belief in the central role of an informed, empowered patient who interacts in partnership with a prepared proactive practice team [20]. The CCM provides an important framework for addressing the challenges associated with smoking cessation and for improving patient services [23,24].

The Ottawa Model adds to what is provided within the CCM by focusing on the needs of patients, providers, and health care organizations in the delivery of tobacco dependence treatments. It includes the delivery of interventions aimed at creating a supportive work environment, establishing common goals for smoking cessation, and enhancing provider and patient self-efficacy, knowledge, and skills [19]. The intent of the Ottawa Model is to increase the number of tobacco users who achieve long-term abstinence by ensuring that they receive effective, evidence-based tobacco dependence treatments, delivered by knowledgeable, proactive, health care providers [25].

The 5 A's model for tobacco dependence treatment (ask, advise, assess, assist and arrange) is widely recognized as a fundamental standard of care; consensus around its use has been achieved in best practice guidelines across health care disciplines [4,26-29].

Interprofessional collaboration is a core component of the Ottawa Model, wherein 5 A interventions are delivered using an integration of well-defined, interdependent, interprofessional team roles [19]. The Ottawa Model has been implemented within 40 primary care practices (including 36 FHTs) that together serve 75,000 smokers and deliver care for approximately 1 million patient visits annually [30]. This model has been associated with a significant increase in the rates at which health care providers deliver evidence-based treatments, patient assistance and follow up support as well as long term smoking abstinence [19, 25].

Research Aim

The objective of this study was to explore the role of interprofessional collaboration in the planning and delivery of the Ottawa Model, an interprofessional, team-based tobacco dependence treatment program.

Methods

Design

A qualitative exploratory case study methodology, guided by Yin, was used to explore meaningful characteristics of interprofessional practice as they occur in a FHT setting [31]. This research design was selected as it supports the development of an in-depth understanding of the process and the contextual conditions around phenomena of interest [31]. Research ethics approval was obtained from the University of Ottawa Research Ethics Board.

Setting

The Kingston Family Health Team (KFHT) was the focus of the qualitative case study. This multi-site, single Family Health Team was selected as a convenience sample based on evidence that it had implemented the key components of The Ottawa Model. Inclusion criteria encompassed the formation of a smoking cessation task force, use of an interprofessional tobacco dependence treatment protocol, and ongoing referral of patients for follow up telephone counselling support. The KFHT was identified as a centre which had incorporated broad interprofessional involvement in tobacco dependence treatment and had implemented the Ottawa model across its five physical sites, providing a diverse, real-world setting in which to examine the influence of interprofessional collaboration.

The KFHT was established during the third wave of FHT sites in 2006. The KFHT is a not for profit organization, managed by a provider-based Board of Directors who are responsible for operations and program management. It is comprised of five physical sites across the city. In 2010, health care providers at the Kingston FHT delivered services for 126,605 patient visits. They also maintained a patient registry of 29,884 rostered patients. There are 81 employees at the KFHT including 40 administrative staff, 21 physicians, 8 registered

nurses, 4 nurse practitioners, 3 mental health workers (social workers, psychologist), 2 foot care nurses, 1 dietitian, 1 pharmacist, and 1 physician's assistant. The KFHT implemented the Ottawa Model across all five of its physical sites in January 2011; ten months prior to the study period. Smoking prevalence among patients within the KFHT is 21-25% [30].

Data Collection

Research data was obtained through site observation, a review of documentation pertaining to tobacco dependence treatment and participant interviews. Purposeful sampling was used to obtain broad representation across professional and administrative groups among interview participants. A semi-structured, open-ended interview guide was used to explore the respondents' experiences of using a team-based approach to tobacco dependence treatment within their FHT. The interview guide was developed based on elements of the CCM and the Ottawa Model which provided theoretical support within this study [19, 20]. Four research questions were used:

1. How do professional roles influence a team-based tobacco dependence treatment program?
2. What elements of interprofessional collaboration are important in the delivery of a team-based tobacco dependence treatment program?
3. What barriers and facilitators influence interprofessional collaboration in the delivery of tobacco dependence treatment interventions?
4. How does the health professional team achieve a patient-centred approach across the 5 A tobacco cessation interventions?

Effective interprofessional collaboration was assessed according to eight key attributes which have been identified within the literature. These included the engagement of two or more professionals from different disciplines, a common goal, shared knowledge, multiple

interactions over time, an understanding of each professional's role, interdependence among professionals, symmetrical power, and a supportive organizational environment [32].

Analysis

Atlas Ti software was used to organize data and facilitate analysis [33]. Data were analyzed using an interpretive descriptive approach [34]. The participant interviews were audiotaped and transcribed verbatim. Smoking cessation documentation and observation notes were entered into a case study database and were analyzed in accordance with the same coding structure used for interview analysis. One researcher [KW], independent of the original analysis [SG], reviewed data groupings for their agreement with sorting patterns and relationships identified within the evolving analysis. A thematic summary was developed based on the main elements and relationships found between them. Triangulation of data sources and perspectives were utilized to examine for areas of convergence or variability in order to enhance the validity of the findings. Thick descriptions of the setting and shared experiences were used to increase the transferability of the findings. Critical appraisal of the links between the research data and the theoretical propositions assisted in the analysis of evidence and interpretation of study findings.

Results

Data collection occurred between November 2011 and January 2012. A total of eight interviews were conducted. Research data was also obtained through the observation of a KFHT Smoking Cessation Task Force meeting and a walk-through of the FHT sites, observing aspects of clinical care pertaining to the delivery of tobacco dependence treatment. In addition, the Executive Director provided a variety of documentation pertaining to tobacco dependence treatment at the KFHT including, as an example, baseline provider and patient evaluation data and post-Ottawa Model six-month follow up data, quarterly audit reports, the KFHT Tobacco Control Protocol, patient and provider education materials, meeting minutes

pertaining to tobacco control, letters written to advocate to government officials to support tobacco control and a poster presentation from the KFHT describing their outcomes in using the Ottawa Model and new targets for expansion and sustainability of best practices in smoking cessation.

Participant characteristics

Table 1. Participant characteristics

Age (Years)	Sex	Prior smoking cessation training	Ottawa Model training	Interview Duration (Minutes)
Average : 46 Range: 31-68	Male: Two Female: Six	Yes: Two No: Six	Yes: Eight	Average: 42 Range: 13 to 95

Among the eight interview participants, five were KFHT health care professionals, two were administrative staff, and one was an Ottawa Model Facilitator. There were two male and six female participants. They ranged in age from 31 to 68 years. Their professional titles for use in this analysis include: Executive Director, Program Assistant, Pharmacist, Physician, Registered Nurse, Registered Dietitian, Social Worker, and Ottawa Model Facilitator. Two of the interview participants had training in smoking cessation prior to the Ottawa Model implementation. All eight participants received tobacco dependence treatment training using the Ottawa Model, as did 80% of all KFHT administrative and health care provider staff. Training in interprofessional collaboration was not queried. Participant interviews were 42 minutes duration on average, ranging from 13 to 95 minutes in length.

Elements of Chronic Care Integration

Data from interviews, observations, and KFHT documentation were examined according to the core CCM elements and their respective interventions. The resulting classification of interventions used within the KFHT Ottawa Model program demonstrated broad integration of the CCM including all six core elements: delivery system design, self-management

support, decision support, clinical information systems, community resources and health care organization (Box 1) [21, 35]. Implementation of these interventions was achieved through the support of diverse interprofessional team members and enabled positive tobacco dependence treatment changes system-wide; these changes promoted effective partnerships between informed, activated patients and prepared, proactive health professionals. This was reflected in the performance data collected pre and post-Ottawa Model implementation which demonstrated improvements in the interprofessional delivery of smoking cessation support.

Box 1: Classification of the KFHT Ottawa Model Program according to the Chronic Care Model

<p>Health Care System Organization Visible leadership support Intra and inter-organizational collaboration Coherent system improvement and spread</p>	<p>Self-management Support Patient education Psychosocial support Self-management assessment Self-management resources and tools Collaborative decision-making with patients Guidelines available to patients</p>
<p>Delivery System Design Defined roles Planned interactions Team practice Care delivery coordination Care management roles Proactive follow up Provide phone visit</p>	<p>Clinical Information Systems Patient registry system Use of information for care management Monitoring and feedback of performance data</p>
<p>Decision Support Institutionalization of guidelines/prompts Provider education Expert consultation support</p>	<p>Community Resources Encourage patient participation in effective programs Form community partnerships to fill gaps Advocate for policies to improve care</p>

Changes in Provider Performance and Patient Outcomes

Evaluation data from site documentation and Ottawa Model statistics indicated that following implementation of the Ottawa Model at the KFHT, there was an 8% increase in asking and documentation of smoking status, and 12% more patients received advice to quit. Among patients ready to quit in the next 30 days, rates of assistance and follow up support

increased by 53% and 35% respectively [36]. In addition, among the 435 patients who participated in a KFHT quit plan counselling visit, 53.4% who completed the telephone follow up assessment were smoke-free 60 days following their quit date. A conservative estimate of quit rate in which all patients not reached are classified as smokers produced a quit rate of 26.3% at 60 days [36]. This compares to national quit rates of 4-7% among unaided smokers [4,8,9].

Key Themes

An analysis of the ways in which interprofessional collaboration influenced tobacco dependence treatment within the KFHT resulted in the identification of three key themes. These themes included: initiation of system-wide change; cultivation of collective action; and enhanced quality of smoking cessation care within their organization and across their community.

Initiation of System-Wide Change

One of the key themes that emerged during the analysis of this case study included a philosophical and clinical changing of practices system wide across the KFHT. Assimilation of a new standard of practice for smoking cessation and buy-in from FHT members was achieved through internal leadership, interprofessional protocol development and implementation, collective staff engagement, interprofessional training in tobacco dependence treatment, as well as external partnership and facilitation.

The KFHT social worker played an instrumental leadership role in the identification of the Ottawa Model as a viable and valuable approach to care delivery:

“I knew if we could bring this to primary care, that we would be doing what we absolutely have to do to be effective. Since [smoking cessation] is a social issue as much as a health issue, we really have to hit large groups to be

effective. Because it is an Ontario issue; it's a Canada issue; it's a world issue. [S]o why are we running a program with 15 people and/or 9 or whatever, expending all that energy?" (Social Worker)

The social worker advocated for the Ottawa Model and gradually educated other members of the team. Momentum for the program grew considerably once concrete support was secured from the Executive Director, lead physician, and the Board of Directors.

The UOHI Ottawa Model partners were critical to establishing a team-based, system-wide, standardized approach. The KFHT/Ottawa Model partnership followed a structured roll-out plan to ensure that all health professionals were using state-of-the-art approaches to smoking cessation and that these approaches were integrated into routine clinic processes. Members of the KFHT identified that their achievements in tobacco dependence treatment would not have been attainable without this collaborative relationship, facilitation support, or the funding that was provided. The Ottawa Model was described by participants as more than an individual with an idea; it was a system of care.

A Smoking Cessation Task Force was assembled with broad representation across disciplinary groups. This team was responsible for the development and implementation of a customized Tobacco Control Protocol. The protocol comprised a step by step guide describing the patient population, each individual professional's role, what each role entailed, how to deliver smoking cessation interventions, how to document care, established outcome measurement variables and KFHT target completion rates.

"I think the most significant thing that we did is we got the physicians, the nursing staff, and the front staff, like the medical receptionists involved and said you know what: How are we going to make this program work in practical terms? ... [W]ithout interrupting ... the regular work flow of the clinic?" (Pharmacist)

Study participants identified the fundamental role that the task force members played in uniting the broader team. Each task force member conversed with colleagues from their respective disciplines, soliciting support, and raising awareness that smoking cessation had become a priority. They shared with their colleagues the simplicity with which they could provide effective interventions and promoted the concept that smoking cessation was one of the single most important interventions that could be provided in primary care, akin to the treatment of hypertension and diabetes. Communication and tobacco dependence treatment training occurred broadly, involving all health care provider and administrative staff. Training sessions were designed to be useful in a practical sense:

“We had a lot of visuals, the actual procedure, what everybody’s role was, so it was, it was very (umm) again I keep coming back to user-friendly... if the people that you are presenting to can visualize themselves and their roles, and the impact their roles will have... I think if you start with a great foundation, then they embrace it and that’s exactly what we saw.” (Program Assistant)

The KFHT recognized the importance of having everyone’s engagement and participation. Even peripheral staff who would not be directly involved in the program were provided with basic knowledge about it, to allow for a greater awareness and consistency in care when enquiries were received.

“[I]t pointed out you need to involve everybody. You need to give everyone a role and they have to know exactly what their role is and be clear about it; the importance of training; the importance of communicating the program widespread.” (Executive Director)

In addition to formal training cessations, the KFHT utilized internal communications such as newsletters and their staff retreat, to promote the program and prepare all staff for their

involvement. Open communication also took place during program roll-out using email, face to face communications and attendance at select team meetings. Over time, the KFHT developed a strong group of smoking cessation champions which generated significant buy-in across health care professional and administrative groups.

In addition to internal signs that a change in practice around smoking cessation was accepted by KFHT staff, there was outward evidence of this transformation. For example, the philosophy of ongoing commitment to KFHT patients was reflected in the information posted on the KFHT website which stated:

“This is not a brief program effort, but an ongoing health change process at KFHT. We intend to work with all smokers over time to help them make the decision to quit, to support their quit effort as fully as we can, to monitor their progress over time, and to offer continued help for anyone who relapses.”

[37].

Surveillance of clinical areas demonstrated visual clues that communicated this change in practice to patients such as program posters, Quit Plan booklets, Quit Smoking medication displays, and smoking cessation self-help resources which incorporated evidenced-based, 5 A strategies for comprehensive care.

Cultivation of Collective Action

The Ottawa Model for Smoking Cessation in Primary Care was designed with a team approach in mind. The Ottawa Model “Request for Application” (RFA) prompted prospective FHTs to identify dedicated staff to coordinate the program and for champions to be identified across disciplines such as medicine, nursing, clinical education and pharmacy. In their RFA, the KFHT identified that all members of their staff would be recruited to engage in tobacco dependence treatment support including their physicians, nurses, social workers, dietitian, pharmacist, psychologist, front staff and back administrative staff.

Participants reported that implementing the Ottawa Model program had promoted team-building and helped to demonstrate the success that could be achieved with collaboration. This sense was reflected broadly across the KFHT:

“[A]t our team retreat last year, we got so much positive feedback from everyone about this program like: Finally, a program that... suits the team. This is what teams were made for.” (Physician)

Participants indicated that while certain acute illnesses can be treated by one professional quite efficiently, preventive care and chronic diseases such as smoking cessation, diabetes, and obesity benefit from the coordination of care across a broader range of disciplines.

The data provided explicit evidence for the presence of seven of the eight key elements of interprofessional collaboration in the context of smoking cessation within the KFHT including the engagement of two or more professionals from different disciplines who share a common goal, shared knowledge, multiple interactions over time, an understanding of each professionals’ role, interdependence among professionals, and a supportive organizational environment. Symmetrical power was not as clearly visible, although the data supported the probable presence of this element. Each of these components carried significant importance in the interprofessional delivery of care for patients engaging in smoking cessation and examples of each element and their contributions are described below.

The KFHT worked to engage each discipline actively in smoking cessation delivery and evaluation. Broad involvement of FHT staff was achieved through the integration of clear roles for front-line staff, administrative staff, medical assistants, physicians, nurse practitioners, and nurse counsellors in the KFHT tobacco control protocol. In addition, consultant and supportive roles were identified for the pharmacist, dietitian and social worker.

The KFHT began with a clear vision and explicit goals for smoking cessation treatments in partnership with the Ottawa Model team. The primary goal was to provide optimal support and treatment for smokers accessing primary care services. To objectively evaluate program outcomes, the KFHT tobacco control protocol included measurable targets for the proportion of patients whose smoking status was documented; provision of cessation advice; completion of Quit Plan visits within one week; and referrals for telephone follow up counselling.

The training that was provided by the Ottawa Model team was identified as an important element that led to increased awareness and shared knowledge within this FHT. Training not only prepared staff to assume their individual roles, but also included interprofessional training to improve the understanding of each colleague's role. One KFHT physician remarked that the level of shared knowledge, standardization of care and use of interdependent working relationships was unique to tobacco dependence treatment:

“[E]veryone's involved at some level and we all know what the other people are doing; and everyone's doing it consistently...I have no idea what's happening with nurses and physicians and the front staff in hypertension management. I have no idea. I'm sure that we all handle it differently.”

(Physician)

It was clear that KFHT staff were interacting in their day to day activities, integrating team-based smoking cessation in their routine care. Key elements that were highlighted included trust and role flexibility. Participants remarked on their interdependence in performing the key clinical components of care which ultimately helped patients meet their objective of successfully quitting smoking. They identified an integration of key roles such as proactive identification of smoking status, standardized provision of advice to quit and offering of assistance, referral for quit plan visits, patient self-management support and follow up

counselling. Participants spoke about the transformation in smoking cessation care wherein they shared responsibility and maximized the use of each discipline's scope of practice.

“So it took... like the whole point of team is to take the burden and all the responsibility and share... and that's exactly how it's happened.” (Program Assistant)

The Executive Director of the KFHT described the importance of building a well-rounded, cohesive team in the development of a supportive environment. A targeted hiring strategy was used to meet this objective, seeking individuals who possessed the knowledge and/or skills required to complement and enhance team functioning. The expectation for interdisciplinary staff to see patients individually, while equally contributing in a collaborative way to the delivery of at least one primary care program, was also noted by participants as an asset to interprofessional team effectiveness.

Participants described organizational support for tobacco dependence treatment as an invaluable component needed for ongoing program success. This support was received explicitly from the KFHT Board of Directors and provided the backing needed when divergent interests placed stress on program development and sustainability. Evidence of a supportive organizational environment was also noted in team based program meetings. All KFHT members were invited to smoking cessation program meetings and the rates of attendance were unprecedented according to one study participant, drawing in team members who would not typically take part. Participants described a sense of value and acknowledgement for each team member's contribution in the success of the smoking cessation program.

“You know we've had 425 Quit Plan visits between six nurses... And how did that happen? And that's because of everybody. ...And the success rate was 22% quit after 60 days, and the national average is 4-7%... and I said that's

because of everybody in this room... [I]t's the facts. And being able to present the facts back and have...each individual in the role say I'm part of that. I'm part of that success. "(Program Assistant)

The physician lead and the administration team provided considerable leadership, and ultimately carried substantial power in establishing concrete commitment for the Ottawa Model program. It was noted that the Executive Director, for example "could kill it quickly, by just not supporting it." (Social Worker) Likewise, it was noted that leadership from the physician group was a compulsory component in bringing the smoking cessation program to fruition within the KFHT. The support from these groups was notably required both to initiate and maintain smoking cessation as a key priority within the FHT.

Participants also identified interprofessional team members who provided significant leadership and provided examples of shared power. For instance, the KFHT Social Worker was recognized as a key proponent in the initiation process. Participants also acknowledged the essential contributions of the program assistant, nursing leadership, and pharmacist, among others, in the planning, delivery and maintenance of the program. Each KFHT participant described having considerable power and influence over the aspects of his/her own role. They also spoke about their respect for each other and reciprocity in their roles whenever it was needed, recognizing that on busy days additional role flexibility may be required. In addition, the importance of patient empowerment within the program was recognized.

Medical directives were put into place to allow nursing staff to have the autonomy of providing patients with a prescription for any one of the three first line pharmacotherapies during Quit Plan visits. This was noted to enhance symmetry in power. It afforded both nurses and patients an opportunity to discuss preferences in medical treatments and follow

through with the provision of smoking cessation best practices offering both counselling and pharmacotherapy concurrently.

The “domino effect”

The active use of interprofessional collaboration in the delivery of patient care for smoking cessation established a “domino effect” in which the work of one individual prompted the work of another team member, each engaging with the patient in smoking cessation treatments.

“But it was only because of each role being specific and that what one did dominoed into the others... that it caused [success].” (Program Assistant)

The interprofessional dominos set off a comprehensive line of tobacco dependence treatment services each designed to provide enhanced patient identification and support.

Patient-centred care. A key benefit of the “domino effect” that was identified was enhanced patient-centred care. While the smoking cessation treatment process was comprised of distinct sections carried out by various health care providers, team members indicated that transitions between professionals were fluid and occurred in a cohesive fashion within the natural flow of care. An important component of this support was the telephone follow up counselling that occurred in partnership with Ottawa Model staff.

“[F]eedback, when I do see my patients regularly who have gone through the program has been really good, whether they have resumed smoking or not... they like that they have support, the follow-up.”(Registered Nurse)

“[I]t probably would appear from the outside if I was a patient coming in like that’s one of the most cohesive things the team does.” (Physician)

Interprofessional collaboration was seen as a key strategy in and of itself to help patients fulfill their self-management needs. One of the KFHT nursing staff spoke about efforts to

tailor each encounter to the patients' unique learning style, carefully selecting education strategies to meet their individual needs and specific concerns.

“[A]gain, even with smoking cessation, the ultimate goal with anything is to have them make their own decisions regarding their health, right? And to help support them to do that.” (Registered Nurse)

Cost-free pharmacotherapy. Another component of care that enhanced both the patient centred approach and the “domino effect” was involvement with the SmartPayment™ card program. The SmartPayment™ card program was available during the first 3 months after the KFHT implemented the Ottawa Model. This program was made available through KFHT participation in the ExtENDs (Extending Tobacco Treatment Excellence) research project aimed at increasing access to smoking cessation medications [38]. Patients were provided with a \$110-330 subsidy (SmartPayment™ card) for the purchase of first-line smoking cessation medications including nicotine replacement therapies, varenicline or zyban. The SmartPayment™ card was valued by clinicians as an agent of empowerment that provided patients with an enhanced degree of self-management and choice in their quitting efforts. Participants also noted that the SmartPayment™ card served as a catalyst for their own enthusiasm within the program; providing staff a tangible tool that they could offer their patients to help them with successful quitting. In addition, many KFHT patients referred their family members and friends so they too could take advantage of the opportunity to work at becoming smoke free supported by responsive health care providers and pharmacotherapy at no cost.

Provider variability. A downside to the “domino effect” was its linkage to a key failure mechanism that could occur: provider variability. If one team member did not perform his/her role, it was possible the other dominos would not fall.

“[I]f people come in for an annual visit... if we’re not asking the question...and they don’t mention it during the 15 minute visit that they’re here then, you know, we’ve missed... a window of opportunity.” (Registered Nurse)

Challenges with inadequate time and workload were commonly cited barriers to consistency in care. Unfortunately, participants indicated that if a smoker was not identified, or if there was a breakdown in the referral process, the window of opportunity would be lost to provide advice, self-management education and ascertain engagement of the patient in follow up support. Many staff however reported flexibility in picking up the role of their colleague if it was omitted for any reason. Challenges in establishing an ingrained routine of consistently asking about smoking status was acknowledged by many participants. Staff recognized that it takes time and practice to assimilate and ingrain smoking cessation in the same way as other routinely performed functions.

“[I]t’s so engrained now, they never would forget to do a blood pressure. (Umm), but they do let this slide sometimes, and not just because they’re busy; they just sort of get out of the habit.” (Physician)

Several strategies to address variability in care were identified at a task force meeting. Individual and group feedback, integration of quality improvement data in monthly site meetings and ongoing quarterly audits were among the planned approaches. In addition, a strategy was discussed to recruit new smoking cessation champions as a component of the annual plan to maintain momentum over time.

Enhanced Quality of Smoking Cessation Care

Interprofessional collaboration, collective action and implementation of system wide changes raised the quality and consistency of tobacco dependence services provided at the KFHT. Jointly, staff influenced enhanced access, timeliness of care, quality of care and comprehensiveness of services.

“[Patients have] more access because they can now go to where they regularly get their care. They can talk to the RN that they normally deal with most of the time and the physician if need be and he’s or she’s reiterating the same message... It adds a quality to it that maybe wasn’t there before because everybody’s still working for it.” (Executive Director)

Performance evaluation and feedback

The Ottawa Model and KFHT partnership agreement included a continuous evaluation and improvement cycle. This provided a crucial foundation for ongoing refinement of clinical processes and enhancement of patient care. The team engaged in careful planning, alongside the technical expertise of their program assistant, to ensure they were able to measure and track objective variables and build quality improvement plans.

“I think it’s very important to be able to understand your goals and objectives and to be able to (umm) track things, but also to be able to visually understand where you are. And so... how do we get this into the EMR, you know, what’s the easiest for the staff to track and then how do we pull it back out again?”
(Program Assistant)

Front line providers described the importance of receiving tangible evidence regarding the impact of their care through the use of measurable patient outcomes. It was seen as a way of enhancing commitment and reinforcing an even stronger impetus to focus on smoking cessation as a primary care priority.

“[J]ust doing something for the sake of doing it ...you can do it for a few months or so, but then what is the use of this? But if you actually see the benefits of what you are doing play out in your patient’s health I think that would be the biggest encouragement to say: You know what? We should be doing more of this and I want to continue doing this.” (Pharmacist)

Members of the KFHT spoke about the benefits of having a team member dedicated to program evaluation: their Program Assistant. This individual was recognized as the resident expert on their electronic medical record (EMR) system and as a person who gave staff access to the data needed to track their results. The availability of this data facilitated the modification of individual or group practices as needed for quality improvement.

Enhancing Community and Patient Resources

Members of the KFHT made it quite clear that their dedication to providing optimal smoking cessation treatment was not a fleeting phase. They assimilated the treatment of tobacco dependence into their concept of primary care fundamentals.

“So we’re always going to do this just like you would always ask about colorectal screening, or mammograms, or paps, then we’re going to ask about smoking... to make a difference.” (Executive Director)

In addition, several participants spoke about their desire to secure the future of this initiative as a long-term practice change within an environment of challenges with continuously diverging interests at the Ministry level. They also described visioning strategies to make their tobacco dependence treatment program stronger, expand its reach, and sustain it over time, not only within the KFHT, but across their region and province.

The KFHT participants were eager to share their experiences and early successes. They were enthusiastic about building community practices in which smoking cessation excellence could be achieved. The KFHT worked actively to engage others and provided support for FHT partners across their region. They took steps to engage other stakeholders in their community such as community pharmacists, local and regional FHTs and Public Health partners. They also participated in political advocacy to influence the structure and availability of health system and patient supports within their broader community.

Their commitment was reflected in new targets set by the KFHT one year after the Ottawa Model program implementation [36]. Their targets included:

- 1) An expanded model of smoking cessation practice to develop more effective relapse prevention strategies to recycle quit attempts among those who did not quit successfully;
- 2) Regular inter-FHT communication and sharing of best practices in eastern Ontario;
- 3) Forging closer links with public health, in addition to development of a joint smoking cessation protocol with hospitals, and initiation of employer-based quit campaigns; and
- 4) Increased contact with media, government and smoking cessation stakeholders [36].

In a letter that the KFHT wrote to the Ministry of Health and Long Term Care, and the Ministry of Health Promotion and Sport, the team described the impact of the Ottawa Model coupled with cost free pharmacotherapy for their patients:

“This system-wide practice change engages all 21 family physicians and 60 staff from front-line receptionists to nurses, dietitians, and social workers. The KFHT has 30,000 patients of which 3,555 are identified as smokers. Over the short period of three months, 8 Registered Nurses have provided more than 364 patient 'Quit Plan 'visits. The successful uptake of patients wanting to stop smoking was directly linked to the 'Smart Cards' supplied at the 'Quit Plan 'visit. This valuable resource contributed \$330.00 towards each patient's cost of first-line smoking cessation medications of their choice (NRT, Zyban or Champix). Patients, who otherwise would still be smoking, tell us that they have quit successfully with this program.”

Influencing the broader community of practice has had far reaching implications. Four more FHTs in the Kingston area have joined in partnership with The Ottawa Model to deliver comprehensive smoking cessation services. KFHT members have worked in partnership with these new sites, and a variety of other FHTs, to share their experiences, knowledge, EMR infrastructure, and team success strategies.

Discussion

This study, which examined how interprofessional collaboration makes a difference in tobacco dependence treatment, illustrated the significant role of interprofessional collaboration in the development of a system that provides consistent and meaningful support for tobacco users in their efforts to quit. Interprofessional collaboration played an essential role in the planning, implementation, and sustainability of the Ottawa Model and advanced the delivery of high quality tobacco dependence treatments. An interprofessional team approach was used to establish the Ottawa Model framework in which KFHT members were able to institute interventions influencing all six core elements of the CCM including delivery system design, self-management support, decision support, clinical information systems, community resources and health care organization. The implementation of core CCM elements has been shown to enhance clinical outcomes, process of care and quality of life for patients with chronic illness [21].

Within this study, interprofessional collaboration for smoking cessation took place in a domino-like, synergistic fashion, enhancing team effectiveness and the comprehensiveness of care. All eight elements of interprofessional collaboration, including the engagement of two or more professionals from different disciplines, a common goal, shared knowledge, multiple interactions over time, an understanding of each professional's role, interdependence among professionals, symmetrical power, and a supportive organizational environment, were important to the advancement of patient smoking cessation support [32]. These results coincide with other research in primary care which has demonstrated the benefits of team-based health care in improving access to services, resource utilization and continuity of care for patients [39].

Professional roles

Professional roles which influenced the team-based tobacco dependence treatment program included leadership, data management/evaluation, and facilitation support. Within the current study, both senior leadership and disciplinary leadership were recognized for their role in supporting collaborative practice. Strong leadership is recognized as a key element which heightens the level of teamwork achieved in FHT settings [40,41]. Support from senior and disciplinary team members helped to establish team buy-in, and promoted system-wide changes to clinical care, leading to the advancement of community resources and advocacy for excellence in patient care across the health care system.

The intensity of interprofessional collaboration can be increased through the evaluation of program accomplishments and communication of quality of care outcomes [42]. Evaluation of specific, objective measures provides benchmark data and demonstrates where practitioners are having the biggest impact, assisting with resource allocation and program planning [43,44]. Participants in this study described the importance of having a dedicated individual to assist with program evaluation and EMR integration in care. In addition, health care providers identified evidence of patient improvements in health as one of the most significant predictors of smoking cessation program sustainability. Furthermore, within this study, objective validation of internal program success provided the basis for advocacy and promotion of a systematic approach to smoking cessation within the broader community.

Health care professionals acknowledged the importance of Ottawa Model facilitation support and training in advancing their evidence-based knowledge and skills in the delivery of comprehensive smoking cessation services. Mutual understanding of roles and training of all interprofessional staff provided the infrastructure needed for the integration of tobacco dependence treatments into daily clinical practice, resulting in enhanced efficiency and

effectiveness in smoking cessation. These results underscore the importance of education and training for interprofessional care [45].

Patient-centred care

Study participants reported meaningful improvements in patient-centred care for smoking cessation and support for self-management needs. Interprofessional collaboration was central in restructuring the delivery system design used to provide tobacco dependence treatment within the day to day flow of primary care. Enhanced patient access to smoking cessation best practices was supported through the implementation of clearly identified professional roles, engagement of all staff, a coordinated care delivery protocol, self-management support, shared accountability, and proactive follow up counselling. Formalization of procedures and processes can improve team efficacy and enhance interprofessional collaboration capabilities [42].

Barriers and Facilitators to Interprofessional Collaboration

Several barriers and facilitators to interprofessional collaboration were identified in the current case study. All-inclusive team involvement, open communication of common goals, visible leadership, clearly defined roles, interprofessional training and interdependent team protocols, facilitation support, as well as feedback and evaluation were important facilitators of interprofessional collaboration. Collaborative team values, shared responsibilities, and recognition of diverse disciplinary perspectives and mutual skills contribute substantially to collective action and are fostered through interprofessional education and socialization [45, 46]. A supportive organizational environment, inclusive of administrative support, communication and coordination mechanisms, provides an important foundation for team consensus, commitment and effective team functioning [45].

Provider variability was a detrimental barrier to the systematized delivery of care and impeded the advancement of a collaborative care approach. Provider variability has previously been identified as a significant variable impeding consistency of smoking cessation practices within the primary care setting [19]. Interprofessional training played a critical role in establishing shared understanding and responsibility for care; however study participants noted that it takes time to integrate new standards of care in an instinctive, automated fashion. Data measurement and feedback gave providers objective evidence of positive patient outcomes and provided the reinforcement needed for ongoing team commitment. The data also helped team members identify inconsistencies in practice and supported the development of strategies to reduce provider variability.

Patients are an integral member of interprofessional teams [32]. Free pharmacotherapy and consistent, evidence-based interprofessional support were seen as measures which improved patient self-management and supported optimal patient cessation outcomes. Loss of free pharmacotherapy following the end of the SmartPayment™ card program research project was perceived as a barrier for interprofessional collaboration, in particular relating to limitations in patient choice, engagement and self-management resources. Advocacy for policy changes to support comprehensive coverage of smoking cessation medications is needed.

Results from this study reinforce the finding that “the best results for tobacco addiction treatment are achieved with a comprehensive, multidisciplinary approach that assures the availability, affordability and accessibility to longitudinal and diversified psychosocial and pharmacological interventions” [3].

Limitations and Strengths

FHTs vary greatly across Ontario in size, team composition, spatial organization and length of time since inauguration as an interprofessional primary care team practice. A limitation to this study is the use of a single case study design, which restricts transferability of findings to other primary care practices in Ontario. However, in other studies of FHTs in Ontario, similar elements have been identified for their role in influencing team functioning including strong leadership, evidence based protocols, formalized clinical processes, EMR integration, mutual understanding of roles, open communication and program evaluation [44,47].

The purposive selection of participants is also a study limitation. In particular, staff with leadership or clinical roles in smoking cessation, were asked to participate and share their experiences during the interview process. Although broad disciplinary representation was solicited to obtain diverse perspectives, differing views of other staff involved in the KFHT smoking cessation program may not be represented. In addition, the absence of the patient perspective in this process was a limitation within this study. These limitations need to be taken into consideration when interpreting the findings from this study.

To enhance the validity of study findings, triangulation of data sources was used including observation, documentation and interviews. To enhance reliability, the study employed both a theoretical model and a structured data collection and analysis protocol. Future research should explore both patient and practitioner perceptions and outcomes in improving health care services through collaborative team functions.

Conclusion

It is important to engage all team members and put strategies in place to influence tobacco dependence treatments system-wide. Interprofessional collaboration, supported through leadership, partnership, consistent provider approaches, and open communication, can

enhance, in a meaningful way, the comprehensive delivery of evidence-based care for patients trying to quit smoking. Outcome evaluation measurement and feedback to all team members are important factors for the sustainability and assimilation of tobacco dependence treatment into daily clinical practice. Collaborative interprofessional actions can raise the level of clinical services for patients, enhance the knowledge and skills of providers, and build community capacity to improve population health outcomes in smoking cessation.

Competing Interests

The authors declare that they have no competing interests.

Authors' contributions

SG contributed to the study conception, study design, data collection, and analysis, as well as drafting and revising the manuscript. KW and SP contributed to the study design and revising the manuscript.

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Chapter 5: Integrated Summary and Study Implications

In this thesis project, a review of the literature regarding Family Health Teams (FHTs) was conducted to establish a deeper understanding of FHT team functioning in Ontario. This review provided evidence that interprofessional collaboration is gradually taking shape within these team-based practices and several positive outcomes have been identified through qualitative research in FHTs. Important determinants of interprofessional collaboration included health care system determinants such as adequate funding, human resources, and adequate professional preparation for collaborative practice (Doran & O'Brien-Pallas, 2009; Kates, McPherson-Doe, & George, 2011; Mulvale, Danner, & Pasic, 2008; Ragaz, Berk, Ford, & Morgan, 2010; Sherman et al., 2010; Stalker, 2010). In addition, determinants specific to a FHT's local context such as the degree of EMR integration and the formation of community alliances/partnerships were significant contributors to interprofessional collaboration within these teams (Goldman, Meuser, Lawrie, Rogers, & Reeves, 2010a; Goldman, Meuser, Rogers, Lawrie, Reeves, 2010b; Howard, Brazil, Akhtar-Danesh, & Agarwal, 2011; Kates, McPherson-Doe, & George, 2011; Lee et al., 2010; Mulvale, Danner, & Pasic, 2008; Ragaz et al., 2010). Team-level determinants were also identified including the establishment of a shared vision, group culture, use of a patient centred approach to care, systems to facilitate the coordination of care, effective leadership and open communication (Goldman, et al., 2010a; Goldman et al., 2010b; Howard et al., 2011; Kates, McPherson-Doe, & George, 2011; Mulvale, Danner, & Pasic, 2008; Ragaz et al., 2010).

Patient and provider perceptions around the outcomes of collaborative care in a FHT setting suggested that interprofessional teams were able to provide enhanced access to care

and extended health care services compared to what had previously been offered in a uni-professional model of care (Doran, D., O'Brien-Pallas, L., 2009; Goldman et al., 2010a; Goldman et al., 2010b; Kates, McPherson-Doe, & George, 2011; Stalker, 2010). Both patients and providers experienced more time for care and enhanced quality of health services (Goldman et al., 2010a; Stalker, 2010) .

A single, multi-site case study was conducted to explore the influence of interprofessional collaboration on tobacco dependence treatment in a FHT setting. Interprofessional collaboration among KFHT staff and external partners facilitated the adoption of comprehensive, evidence-based interventions that were applied systematically to help tobacco users successfully quit smoking. Participants identified the importance of engaging each staff member in tobacco dependence treatment and acknowledged the significant influence of collective, collaborative efforts in building an effective smoking cessation program. Individual provider variability fragmented team efforts and impeded consistency in smoking cessation practices. Participants reported challenges in integrating standards of practice for smoking cessation in the same instinctive ways that high blood pressure or diabetes is addressed. However, interprofessional training in smoking cessation, and open team communication played a critical role in establishing shared understanding and responsibility for care.

The continuous evaluation and quality improvement cycle used by the KFHT provided a crucial foundation for ongoing refinement of clinical processes and enhancement of patient care. Objective measurement and feedback to staff also provided the reinforcement needed to establish ongoing support for the program and to motivate staff to assimilate smoking cessation as an essential standard within their primary care practice. Quantitative evidence of early program success and the visible benefits to patients added to the enthusiasm of KFHT staff and promoted community engagement initiatives. KFHT members engaged in collaborative efforts with stakeholders in their community and sought the support of political partners to advance patient access to comprehensive smoking

cessation treatments. These efforts advanced the delivery of evidence-based tobacco dependence treatments within the KFHT practice and among community partners.

Implications for Clinical Nursing Practice

Collaborative interprofessional practice is essential to moving the health care system from a position of fragmentation to a position of strength, optimizing shared care approaches to enhance health outcomes (WHO, 2010). The Tobacco Dependence Treatment framework, guided by the Ottawa Model and CCM, provided a useful framework for the examination of interprofessional collaboration in tobacco dependence treatment. These models assisted in the identification of structural and process mechanisms which supported interprofessional smoking cessation care. Within this study, collaborative team interactions provided the foundation for optimization of team roles in delivery system design, evidence-based decision support, patient self-management support and integration of information systems in the tracking and reporting of benchmark data. No single professional group could have transformed tobacco dependence treatment practices alone. Engagement of all staff members in the development of integrated team protocols and interventions is an important step towards building effective patient-centred programs (Goldman et al., 2010b; Ragaz et al., 2010).

Health care consumers, families and caregivers are also integral members of the collaborative team and should be involved in the planning, development, implementation and evaluation of interprofessional programs (Curran, Ungar, & Pauzé, 2006). Nurses need to actively seek opportunities to engage in interprofessional partnerships with health providers in other disciplines as well as patients/families in order to advance the true quintessence of successful collaborative practice.

Implications for Nursing Education

Team education and training, in collaborative smoking cessation care, played an important role in the delivery of an effective team-based tobacco dependence treatment

protocol. The evidence-based smoking cessation training provided by the Ottawa Model partners prepared staff not only to assume their individual roles, but also enriched mutual understanding of each interprofessionals' role. Staff reported high levels of shared knowledge regarding effective smoking cessation interventions, mutual understanding of roles and effective interdependent tobacco dependence treatment services.

Despite the importance of shared interprofessional knowledge, the majority of practicing health professionals have not received training in interprofessional practice (San Martin-Rodriguez, Beaulieu, D'Amour, & Ferrada-Videla, 2005). Educational institutions, health care organizations, and professional associations play a vital role in educating providers about the practices, expertise, skills and values of team members in other health disciplines (Nolte & Tremblay, 2005; San Martin-Rodriguez et al., 2005). As interprofessional teams continue to expand in the primary care setting, the role of interprofessional education programs will continue to gain importance in order to advance the effectiveness and efficiency of collaborative team functions (D'Amour & Oandasan, 2005). Nurses in a variety of clinical and leadership roles have an opportunity promote continued support for teamwork among health professional and patient groups through the promotion of joint conferences, education and training initiatives.

Implications for Nursing Research

In this study, health care providers identified visible improvements in patient health as one of the most significant predictors of smoking cessation program sustainability. Despite the value of evaluation programs in establishing benchmark data, identification of high-impact interventions, and assisting with resource allocation and prospective program planning, internal quality assurance programs and research initiatives are often a low priority for FHT groups (Ragaz et al., 2010). Nurses are well positioned to participate in, and provide leadership for evaluation programs to enhance the knowledge of the best ways to assist patients with smoking cessation success. EMR integration for the delivery of clinical

care and program evaluation is likely to play an important role in advancing primary care research (Terry et al., 2012). Nursing research, which capitalizes on rich clinical data in established patient registries and EMR documentation, are needed to advance the delivery of high quality interventions in primary care.

Implications for Public Policy

Noteworthy patient smoke-free successes were achieved through the Ottawa Model partnership with the KFHT. The facilitation, evidence-based training, partnership support and funding provided by the Ottawa Model team created an opportune environment for the establishment of a standardized, team-based approach to smoking cessation care. Integration of a collaborative team approach resulted in the adoption of new standards of care, patient-centred interventions, and the provision of comprehensive smoking cessation services. The Ottawa Model program incorporated an ongoing evaluation plan that supported the modification of individual and group practices in a timely manner. Effective quality improvement measures were supported through the integration smoking cessation benchmark data points within EMR functions and the designation of team members with dedicated time to perform evaluation and feedback responsibilities. Financial and human resources are needed to integrate evaluation research as a core element of primary care practice (Grumbach & Bodenheimer, 2004; Howard et al., 2011). This will assist FHTs both to identify and sustain effective clinical interventions.

The accessibility of both counselling and cost-free pharmacotherapy according to best practices, in a team setting, were found by KFHT participants to provide a notable difference in patient outcomes. Policy changes to support comprehensive coverage of quit smoking medications are needed.

Concluding Comments

Innovation and excellence in primary care are supported through the coordinated, synergistic influence of collaborative interprofessional teams. Interprofessional

collaboration provides a foundation for successful tobacco dependence treatment planning, delivery and evaluation of care. Collective interprofessional actions can support system-wide changes in practice and advance patient access to comprehensive, high-quality smoking cessation services. Health care teams working to advance care for patients with chronic diseases will benefit from the integration of a collaborative care approach.

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Appendix A: Key Informant Interview Questions – Health Care Professional

Date _____ Start time _____ Completion time _____
 Interviewee Code _____
 Title of Position _____ Age _____ Sex _____

The focus of our interview today is to find out about your views and experiences with the team based approach you use to deliver smoking cessation treatment and counselling with patients in your FHT practice.

1. **Can you tell me about your past experiences with patients in smoking cessation treatment before your practice starting using the Ottawa Model for Smoking Cessation?** Prompts: How did you see your role when it came to smoking cessation? What were your patient experiences like when you engaged smokers in cessation discussions or developed plans around quitting? Do you have an example you could share that highlights your previous role?
2. **Are there any differences in your role since your FHT implemented the Ottawa Model for Smoking Cessation? Can you describe the specific changes to your role and the things that you do to support smoking cessation treatment now?** Prompt: What have your patient experiences been like recently when you engage smokers in cessation discussions or plans around quitting? Do you have an example you could share that highlights your role?
3. **Can you tell me about the process that was used at your FHT to plan the implementation of the Ottawa Model for Smoking Cessation?** Prompt: What occurred that was important in planning to launch the program? Would you do anything differently if you were to revisit the planning process? Were there roles that you or others took on at your FHT that were important to getting commitment and engagement of staff in the smoking cessation program?
4. **Here in this FHT, do you feel that you work alone with patients on smoking cessation or are there other members of your team who get involved either separate to the work you do or together in collaboration with you?** Prompt: Do you have any stories or examples of ways that you work side by side or collaboratively with others in your practice? Are there limitations or negatives to working in this way? Can you tell

me about them? Are there positive things that come from working this way? Can you tell me about them?

5. **Do your team members know what you do in your smoking treatment role?** Prompt: What are some of the unique professional knowledge and skills that you bring to smoking cessation? Do you feel like you are working to the full scope of your practice or is there more you could contribute? **Is it clear to you what your colleagues do?** Do you feel you are all delivering consistent messages and interventions? Can you tell me more about that?
6. **Have there been barriers or facilitators which influenced how you worked out each professional's role?** Could you describe any barriers or boundary issues? Could you describe any facilitators?
7. **Are you able to communicate among one another the patients' preferences for care and maintain a patient centred focus while the patient transitions among members of the team for smoking cessation interventions?** Prompt: Who is involved in helping the patient identify their values and preferences for smoking cessation treatments? In your role, how do you know what treatment decisions others in the team have spoken with the patient about? How do you share discussions you have with the patient? What role does your EMR play? What role does the Ottawa Model documentation play? Could this process be improved? How so?
8. **Do you think there are things about the way care is organized here at your FHT that make a team-based approach to smoking cessation difficult to do? Easy to do?** Prompts: Are there things about the structure of the organization, physical, human or financial resources, division of labour, interpersonal interactions, policies, knowledge or attitudes or other things that act as barriers to your care? Are there things about the structure of the organization, physical, human or financial resources, division of labour, interpersonal interactions, policies, knowledge or attitudes or other things that act as facilitators to your care?
9. **In your own words, what do you think has been the value to your clinic and the patients you serve in implementing the Ottawa Model?** Prompts: Would you have an example? Are there differences in patient access to care for smoking cessation or the options for treatment and support that they receive? Do you have any experiences or stories to illustrate this?

10. What do you feel would help to keep this program active and sustainable in your practice setting? What would make it hard to keep this program active or sustain it over time?

11. Has this smoking cessation program been influenced by other projects that you established in the past? How so? Has this smoking cessation program influenced the way you deliver other programs? In what way?

Appendix B: Key Informant Interview Questions – Administration or Facilitator

Date _____ Start time _____ Completion time _____
 Interviewee Code _____
 Title of Position _____ Age _____ Sex _____

The focus of our interview today is to find out about your views and experiences with the team based approach used to deliver smoking cessation treatment with patients in your FHT practice.

1. **Can you tell me about your experiences with smoking cessation treatment programs?** Prompts: Can you describe your recent experiences with the Ottawa Model, and any previous experiences you have had with smoking cessation programs? Can you describe how you see your role when it comes to smoking cessation? Do you have an example you could share that highlights how you have carried out your role?
2. **Can you tell me about the process that was used at this FHT to plan the implementation of the Ottawa Model for Smoking Cessation?** Prompt: What occurred that was important in planning to launch the program? Would you do anything differently if you were to revisit the planning process? Were there roles that you or others took on at this FHT that were important to getting commitment and engagement of staff in the smoking cessation program?
3. **Here in this FHT, do you feel that the health care providers work alone with patients on smoking cessation or do other members of the team get involved to carry out work in parallel, or together in collaboration?** Prompt: Do you have any stories or examples of ways that health care providers work side by side or collaboratively with others in this practice? Are there limitations or negatives to working in this way? Can you tell me about them? Are there positive things that come from working this way? Can you tell me about them?
4. **Are team members knowledgeable and clear about the various professional smoking treatment roles that are part of the Tobacco Control Protocol at this FHT practice?** Prompt: Are there unique professional knowledge and skills that various disciplines bring to smoking cessation? Do you feel you like the various professional

groups all delivering consistent messages and interventions? Can you tell me more about that?

5. **Have there been barriers or facilitators which influenced how this FHT worked out each professional's role?** Could you describe any barriers? Could you describe any facilitators?
6. **How do staff communicate among one another the patients' preferences for care and maintain a patient centred focus while the patient transitions among members of the team for smoking cessation interventions?** Prompt: Who is involved in helping the patient identify their values and preferences for smoking cessation treatments? How are patient discussions shared among members of the team? What role does the EMR play? What role does the Ottawa Model documentation play? Could this process be improved? How so?
7. **Do you think there are things about the way care is organized here at this FHT that make a team-based approach to smoking cessation difficult to do? Easy to do?** Prompts: Are there things about the structure of the organization, physical, human or financial resources, division of labour, interpersonal interactions, policies, knowledge or attitudes or other things that act as barriers to your care? Are there things about the structure of the organization, physical, human or financial resources, division of labour, interpersonal interactions, policies, knowledge or attitudes or other things that act as facilitators to your care?
8. **In your own words, what do you think has been the value to your clinic and the patients you serve in implementing the Ottawa Model?** Prompts: Would you have an example? Are there differences in patient access to care for smoking cessation or the options for treatment and support that they receive? Do you have any experiences or stories to illustrate this?
9. **What do you feel would help to keep this program active and sustainable in this FHT practice setting? What would make it hard to keep this program active or sustain it over time?** (End at Question 9 for the UOHI Facilitator)
10. **Has this smoking cessation program been influenced by other projects that you established in the past? How so? Has this smoking cessation program influenced the way you deliver other programs? In what way?**

Appendix C: Letter of Information for Case Study Research Project

Title of the study:

How is Interprofessional Collaboration Making a Difference in Tobacco Dependence Treatment?

Name of researcher: Sophia Gocan

Name of supervisor: Kirsten Woodend

Please read this Information Sheet and Consent Form carefully and ask as many questions as you like before deciding whether to participate.

Invitation to Participate: The Kingston Family Health Team (FHT) is invited to participate in the above mentioned research study conducted by Sophia Gocan and Kirsten Woodend. This research project is part of the requirement for a master's degree.

Purpose of the Study: The primary purpose of the study is to explore the role of interprofessional collaboration in the planning and delivery of a team-based tobacco dependence treatment program in a real-world primary care practice.

Participation: Participation will consist essentially of three key elements: 1) Providing the opportunity for the lead investigator to take part in a site observation of the Tobacco Dependence Treatment protocol interventions at our Family Health Team (FHT) site; 2) Providing the opportunity for 6-8 interprofessional health care professionals and administrative staff to freely decide to participate in key informant interviews; 3) Providing a comprehensive package with source documentation regarding our Tobacco Dependence Treatment Program including materials that would provide more information about the planning, organization, delivery, and sustainability of the Smoking Cessation program. This may include, but not be limited to: the organizational chart,

orientation of new staff, policies and procedures related to tobacco cessation, the number of patients seen per year, prevalence of tobacco use among patients, the site Tobacco Control protocol, Smoking Cessation Task Force meeting minutes, relevant email correspondence, and other tobacco control source documents.

These events would be organized over the next 4-5 months. More specifically, a site observation would be organized at the convenience of the FHT. Key informant interviews would be scheduled directly with interested staff volunteers. I could compile site source documents at my leisure over the next 4-5 months.

Risks: Participation in this study is not expected to cause the FHT any particular risks. I may feel inconvenienced by the time I spend completing the site observation and package of source documentation. I have received assurance from the researcher that every effort will be made to minimize these risks through the scheduling of an observation experience at times that are most convenient to me. **Anonymity of the FHT site is open to my discretion.** This risk can be reviewed, and the site can remain anonymous in the final report as desired by myself and key informant interview participants.

Benefits: Participation of the FHT in this study will contribute the development of knowledge around the ways in which interprofessional collaboration can impact the delivery of smoking cessation treatments for patients in the primary care setting.

Confidentiality and anonymity: I have received assurance from the researcher that the FHT information will remain strictly confidential. I understand that the contents will be used for analysis within the current research project. Although the research findings are shared with other health care professionals through research publications and presentations, **individual FHT staff are not identified.** The data will never be sold to a commercial organization. My privacy will be protected to the maximum extent allowable by law. **Anonymity** will be protected through the use of an individual number code and a professional title (such as physician 001). Health Care Provider names and/or initials will not be used in any of the research documents.

Conservation of data: The data collected will be kept (1) in a locked file in a room with limited access at the University of Ottawa Nursing Best Practice Research Unit (NBPRU) and will be entered into a database of the University of Ottawa via a secure connection (2) the computer files will be protected by a password, (3) I will not be identified in any way on all future publications, (4) if results are used for secondary data analyses, only my number code will appear on research documents, and (5) the data will be destroyed five years following their publication.

Voluntary Participation: The Kingston FHT is under no obligation to participate. The FHT may choose not to participate, without any negative consequences.

Acceptance: By participating in the site observation experience, facilitating contact with health professional and administrative staff and sharing source documentation around tobacco dependence treatment, I indicate the agreement of our FHT to participate in the above research study conducted

by Sophia Gocan [redacted] which research is under the supervision of Kirsten Woodend. I understand that I will need to write a **letter of permission** to the University of Ottawa Research Ethics Board to indicate that I support this research project at the Kingston Family Health Team site.

If I have any questions about the study, I may contact the researcher or her supervisor.

If I have any questions regarding the ethical conduct of this study, I may contact the Protocol Officer for Ethics in Research [redacted]

Appendix D: **Letter of Information and Consent Form for Key Informant Interviews**

Title of the study:

How is Interprofessional Collaboration Making a Difference in Tobacco Dependence Treatment?

Name of researcher: Sophia Gocan

Name of supervisor: Kirsten Woodend

Please read this Information Sheet and Consent Form carefully and ask as many questions as you like before deciding whether to participate.

Invitation to Participate: I am invited to participate in the abovementioned research study conducted by Sophia Gocan and Kirsten Woodend. This research project is part of the requirement for a master's degree.

Purpose of the Study: The primary purpose of the study is to explore the role of interprofessional collaboration in the planning and delivery of a team-based tobacco dependence treatment program in a real-world primary care practice.

Participation: My participation will consist essentially of one interview session that will take 30 to 60 minutes during which I will be asked about my experiences in smoking cessation treatments within a Family Health Team (FHT) practice and my impressions about structures and processes that have made it easier or more difficult to help patients who smoke. This interview will take place in English and will be audio-recorded. The researcher will schedule the interview at a time that is convenient for me. The interview will take place in a private office or conference room at my workplace.

I am eligible to participate in the key informant interview if I meet any of the following criteria. I am:

- a) A FHT staff member identified as a smoking cessation leader or champion;
- b) A Smoking Cessation Task Force member;
- c) A health care professional for whom at least one of the 5 A tobacco dependence treatments are a primary responsibility;
- d) A member of the FHT administrative staff who is involved in leadership of the Ottawa Model for smoking cessation;
- e) A UOHI partner member of the site Smoking Cessation Task Force working as a facilitator for implementation of the Ottawa Model.

Participants who do not meet inclusion criteria will be excluded.

Risks: My participation in this study will entail that I describe my personal contributions in smoking cessation and my perceptions of team practices. I may feel inconvenienced by the time I spend completing the interview. I have received assurance from the researcher that every effort will be made to minimize this risks through the use of a time and place that are easy for me to access. There is the possibility that my employer or colleagues will be aware of my participation in this project because interviews will take place in an office or conference room in my workplace. While my professional designation and a code number (ie Registered Nurse 002) will be used in research publications, there is the potential that I could be identified and that I could experience social repercussions from my employer or colleagues. I have received assurance from the researcher that every effort will be made to minimize this risk through maintaining strict confidentiality about my desire to participate or to decline participation.

Benefits: My participation in this study will contribute the development of knowledge around the ways in which interprofessional collaboration can impact the delivery of smoking cessation treatments for patients in the primary care setting.

Confidentiality and anonymity: I have received assurance from the researcher that the information I will share will remain strictly confidential. I understand that the contents of the interview will be used for analysis within the current research project. Although the research findings are shared with other health care professionals through research publications and presentations, **individual participants are not identified.** The data will never be sold to a commercial organization. My privacy will be protected to the maximum extent allowable by law. **Verbatim quotes** from my interview may be included in research publications. **Anonymity** will be protected through the use of an individual number code. It is important to note that my discipline or professional title will be listed next to my number code in publications (for example Physician 001), but my name and/or my initials will not be used in any of the research documents. **My FHT site has agreed to have the Kingston FHT name identified in the final publication. As our FHT name will be used, it may be easier for someone to identify me.** In addition, my employer or colleagues may be aware of my participation in this project because interviews will occur in my workplace. Every effort will be made to minimize this risk through maintaining strict **confidentiality** about my desire to participate or to decline participation.

Conservation of data: The data collected on paper or audiotape will be kept (1) in a locked file in a room with limited access at the [redacted] and will be entered into a database of the University of Ottawa via a secure connection (2) the computer files will be protected by a password, (3) I will not be identified in any way on all future publications, (4) if results are used for secondary data analyses, only my number code will appear on research documents, and (5) the data will be destroyed five years following completion of the Master's thesis. The lead researcher, her supervisor, and a transcriptionist will have access to the research data from this project.

Voluntary Participation: I am under no obligation to participate and if I choose to participate, I can withdraw from the study at any time and/or refuse to answer any questions, without suffering any negative consequences. If I choose to withdraw, all data gathered until the time of withdrawal can be used in the data analysis or permanently destroyed and removed from data analysis according to my wishes.

Acceptance: I _____ (*Name of participant*), agree to participate in the above research study conducted by Sophia Gocan [redacted]

If I have any questions about the study, I may contact the researcher or her supervisor.

If I have any questions regarding the ethical conduct of this study, I may contact the Protocol Officer for Ethics in Research [redacted]

There are two copies of the consent form, one of which is mine to keep.

Participant's signature: _____ (*Signature*) Date: _____

Researcher's signature: _____ (*Signature*) Date: _____

Appendix E: Data Collection and Analysis Plan

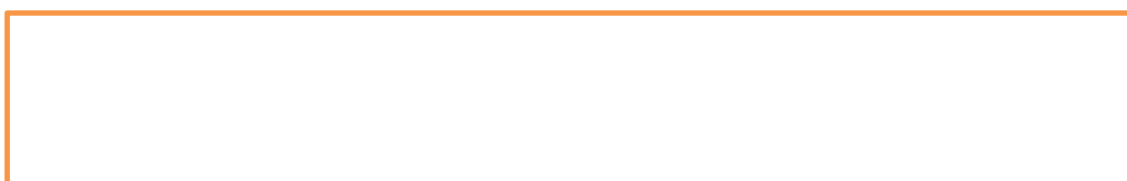
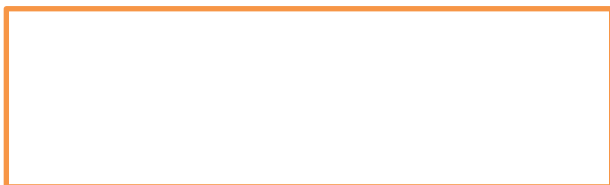
The purpose of this study is to explore the role of interprofessional collaboration in the planning and delivery of the Ottawa Model, an interprofessional, team-based tobacco dependence treatment program in a real-world primary care practice.

Research Question	Proposition/ Purpose	Operational Definition	Operational Measures: <i>NOTE: Items will be coded and reviewed for patterns which support, extend, or are contrary to other study findings in the research database.</i>	Source of Data
What elements of interprofessional collaboration are important in the delivery of a team-based tobacco dependence treatment program?	An exploration of the key elements of Interprofessional Collaboration (IP) when applied to tobacco related interventions will help to identify the presence or absence of IP collaboration components and their perceived importance.	<p><u>Elements of IP (interprofessional) collaboration:</u> The engagement of two or more professionals from different disciplines; a common goal; symmetrical power; shared knowledge; interactions over time; an understanding of each professionals' role; interdependence among professionals and; a supportive organizational environment</p> <p><u>IP collaboration influence in:</u> a) Planning; b) Implementation; and c) Sustainability of tobacco dependence treatment program</p>	Key informant interview data from questions 3-8. Evidence Site documentation of tobacco dependence treatment goals; Review of tobacco dependence treatment protocol, task force meeting minutes and source documents for evidence of IP collaboration elements during planning, implementation and sustainability phases; Site observation evidence of IP collaboration elements.	Key informant interviews; Tobacco dependence treatment protocol; Smoking cessation task force meeting minutes; Site observation; and Source documents.
How do professional	Exploration of professional	<u>IP professional roles:</u> a) <u>What are the key</u>	Key informant interview data from	Key informant

<p>roles influence a team-based tobacco dependence treatment program?</p>	<p>roles including those at the clinical level, and program delivery level will help to define the nature of these roles and their respective influence in tobacco dependence treatment programs.</p>	<p><u>clinical team roles? What influence does each role carry?</u> Initiator (first contact – identifies patient use of tobacco); decision coach (provider trained to support patient involvement in decision making); and collaborative health professionals. b) <u>What are key program delivery roles? What influence does each role carry?</u> Tobacco dependence leadership, champions, mentors, and internal/external facilitators/partners.</p>	<p>questions 1-8. Review of tobacco dependence treatment protocol and/or site policies or medical directives for identification of clinical and program roles and respective influences/outcomes; Site observation of roles; task force meeting minutes and source documents identifying roles.</p>	<p>interviews; Tobacco dependence treatment protocol; Smoking cessation task force meeting minutes; Site observation; and Source documents.</p>
<p>What barriers and facilitators influence interprofessional collaboration in the delivery of tobacco dependence treatment interventions?</p>	<p>An exploration of the key facilitators and barriers to IP delivery of tobacco dependence treatment will assist with understanding the nature of these factors and their influence in real-world clinical practices.</p>	<p><u>Barriers and facilitators for IP collaboration identified by CCM and literature review:</u> a) Professional division of labour; b) Professional interactions; c) Knowledge and attitudes regarding both IP collaboration and tobacco dependence treatment interventions; d) Organizational structures and resources; e) Environmental systems, health care policies and social influences.</p>	<p>Key informant interview data from questions 4-8. Review of tobacco dependence treatment protocol and/or site policies for evidence of barriers or facilitators influencing IP collaboration in the delivery of tobacco dependence treatment; Site observation of barriers or facilitators; task force meeting minutes and source documents identifying barriers</p>	<p>Key informant interviews; Tobacco dependence treatment protocol; Smoking cessation task force meeting minutes; Site observation; and Source documents.</p>

		<p><u>Consider at levels of :</u> Environment structures external to organization; Structures and processes within practice; Professional and individual influences.</p>	or facilitators.	
How does the health professional team achieve a patient centred approach across the 5 A tobacco cessation interventions?	Exploration of the means through which patient centred care is achieved in the context of IP tobacco cessation interventions can assist with understanding team approaches to collaborative health care delivery.	<p>Patient-centered care consists of providing care that is respectful of patient preferences, social context, and values. A goal of patient centred care includes ensuring that patient values guide all clinical decisions.</p> <ol style="list-style-type: none"> Focus on patient as a centre in the process Patient and family/significant other involvement in decision making Perception regarding the degree to which patient preferences, values and social context elicited Perceptions of IP collaboration influence on continuity and quality of care 	Key informant interview data from questions 4 and 7. Review of tobacco dependence treatment protocol and/or site policies for evidence of patient centred care approach across the 5 A tobacco cessation interventions; Site observation of patient centred care characteristics; task force meeting minutes and source documents identifying patient centred care characteristics.	Key informant interviews; Tobacco dependence treatment protocol; Smoking cessation task force meeting minutes; Site observation; and Source documents.

Appendix F: KFHT Letter of Permission



To Whom It May Concern:

I am writing this letter on behalf of the Kingston Family Health Team (KFHT) to ask permission of the University of Ottawa Research Ethics Board to participate in and thereby support the research project titled: How is Interprofessional Collaboration Making a Difference in Tobacco Dependence Treatment.

By participating in the site observation experience, facilitating contact with health professional and administrative staff and sharing source documentation around tobacco dependence treatment, I indicate the agreement of our FHT to participate in the above research study conducted by Sophia Gocan [redacted] whose research is under the supervision of Kirsten Woodend.

The KFHT is proud of its success in providing a systems level approach to smoking cessation for patients via the Ottawa Model Smoking Cessation program. We are willing to have the KFHT name used in the final report.

Thank you for your consideration.

Sincerely,

Executive Director

Physician Champion Smoking Cessation

Appendix G: Ethics Approval Notice



Date (mm/dd/yyyy): 11/11/2011

Université d'Ottawa
Bureau d'éthique et d'intégrité de la recherche

University of Ottawa
Office of Research Ethics and Integrity

Ethics Approval Notice Health Sciences and Science REB

Principal Investigator / Supervisor / Co-investigator(s) / Student(s)

<u>First Name</u>	<u>Last Name</u>	<u>Affiliation</u>	<u>Role</u>
Kirsten	Woodend	Health Sciences / Nursing	Supervisor
Sophia	Gocan	Health Sciences / Nursing	Student Researcher



Type of Project: Master's Thesis

Title: How is Interprofessional Collaboration Making a Difference in Tobacco Dependence Treatment?

<u>Approval Date (mm/dd/yyyy)</u>	<u>Expiry Date (mm/dd/yyyy)</u>	<u>Approval Type</u>
10/07/2011	10/06/2012	Ia

(Ia: Approval, Ib: Approval for initial stage only, I: Conditional)

Special Conditions / Comments:

Full approval is granted. Submission of a letter of permission from the Kingston Family Health Team has been received (on November 9th, 2011). Recruitment and data collection within this site may now begin.