

Running Head: IMPACT OF AN IPE SESSION

Impact of an Interprofessional Education Session with Healthcare Professionals on Attitudes

Towards Interprofessional Teams

by

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Abstract

There is a widespread emphasis in healthcare delivery on the need for interprofessional collaborative care in order to enhance quality and safety in patient care. However, collaboration skills are neither intuitive nor necessarily learned on the job. Therefore, interprofessional learning about collaboration, problem solving and decision-making beyond the confines of individual professions is important for practicing health professionals. As attitude has been found to predict behaviour, a positive attitude by health professionals toward interprofessional teams could positively affect participation on such teams, interprofessional team functioning, and subsequently the quality of care provided to the patient. The purpose of this study was to determine whether an interprofessional learning experience would improve attitudes toward interprofessional teams using the Attitudes Toward Health Care Teams Scale (Heinemann, Schmitt, Farrell & Brallier, 1999). The Interprofessional Education for Collaborative Patient-centred Practice: An Evolving Framework (D'Amour & Oandasan, 2005) guided this study. Healthcare professionals attending a new employee orientation completed the Attitudes Towards Health Care Teams (ATHCT) scale before and after an interprofessional education intervention. Descriptive statistics and paired *t*-test were used in data analysis. Results revealed a statistically significant increase in ATHCT scale mean score following the interprofessional education intervention. Findings from this study suggest that interprofessional learning can be an effective means to increase attitudes toward interprofessional teams and potentially contribute to improving interprofessional collaboration in healthcare.

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CHAPTER 1 - INTRODUCTION

There is an increasing focus in healthcare literature on the importance of clinical competence and collaborative practice to deliver high quality care amidst the challenges of complex health organizations. Government and professional bodies have issued position statements and frameworks to promote interprofessional collaborative care to enhance quality and safety in healthcare (CIHC, 2010; WHO, 2010). The current expectation in Canada is that health professionals will engage in collaborative practice that supports patient centered care (Suter, Arndt, Arthur, Parboosingh, Taylor & Deutschlander, 2009). The World Health Organization (WHO) has also identified collaborative practice as a priority (2010). McCallin and McCallin (2009) state that in today's healthcare workplace collaboration is no longer an option: it is a basic prerequisite for effective practice and quality care. Consequently health organizations, including the Winnipeg Regional Health Authority (WRHA), are facing increasing pressures with decreasing resources to implement educational opportunities to foster IPC (Xyrichris & Lowton, 2008). The University of Manitoba and other academic institutions across Canada have established interprofessional education (IPE) initiatives to advance interprofessional collaboration (IPC) amongst health sciences pre-licensure students and to support the WHO and government priorities.

Traditional divisions between healthcare professions are less rigid than they had been historically, with overlapping scopes of practice visible in the health care system. Successful collaborative practice requires preparation, time and supportive structures (Craven & Bland, 2006). IPE for professionals that are expected to work together and share expertise in a team environment is imperative for the delivery of high quality patient centred care (Romanow, 2002). Students and practicing professionals need opportunities to learn about the roles of other health

care professions and how those roles interface with their own. Despite increasing enthusiasm for IPE by governing bodies and academic institutions there is limited evidence in current literature that practicing health professionals are provided with IPE to facilitate IPC in the clinical setting.

Driving Forces

Nationally and provincially, governments and regulatory bodies have set policies and are mandating decision makers and professionals to promote IPC (Cote, Lauzon & Kid-Strickland, 2008). The WHO has identified collaborative practice as a priority and published the Framework for Action on Interprofessional Education and Collaborative Practice in 2010 (WHO, 2010). This framework identifies a number of key mechanisms essential for achieving collaborative practice and promotes the use of IPE as a means to advance collaborative practice. The Health Council of Canada has included a recommendation that each university health sciences program offers an IPE subject to enhance students' readiness for clinical practice in a team-based healthcare environment (Bandali, Niblett, Yeung & Gamble, 2010). The Accreditation of Interprofessional Health Education (AIPHE) initiative is a "national collaborative of eight organizations that accredit pre-licensure education for six Canadian health professions: physical therapy, occupational therapy, pharmacy, social work, nursing and medicine" (AIPHE, 2009). The eight organizations forming AIPHE are: the Accreditation Council of Canadian Physiotherapy Academic Programs, the Canadian Association of Occupational Therapists, the Canadian Council for Accreditation of Pharmacy Programs, the Canadian Association of Schools of Nursing, the Canadian Association of Social Work Education, the College of Family Physicians of Canada, the Committee on Accreditation of Canadian Medical Schools and the Royal College of Physicians and Surgeons of Canada. Evidence of intentional IPE to support collaborative practice is required to meet accreditation

standards in the aforementioned programs. For example, the Royal College of Physicians and Surgeons of Canada (2007) states IPE and collaborative practice are expected competencies and outcomes. IPC is a key competency area identified in the CanMEDS role of collaborator (Royal College of Physicians and Surgeons of Canada, 2007). There are currently no AIPHE accredited Registered Nurse education programs. In Manitoba the College of Registered Nurses of Manitoba (CRNM) must approve all registered nurse programs and CRNM standards include the requirement of IPE opportunities (CRNM, 2016)

Benefits of Collaborative Practice

Effective IPC results in health care teams that are efficient and deliver improved quality of care in a cost-effective manner (Borrill, Dawson, Scully, Carter, Anelay, Patterson & Waring, 2011; CIHC, 2010; Kramer & Schmalenberg, 2003; Lindeke & Sieckert, 2005; Procter & Currie, 2004; Vyt, 2008; Wheelan, Burchill & Tilin, 2003; WHO, 2010; Xyrichis & Lowton, 2008; Zwarenstein, 2000). Effective IPC also results in improvement in interprofessional relationships, a higher degree of work satisfaction, and employee retention (CIHC 2013; Gaboury, Bujold, Boon, & Moher, 2009 Vyt, 2008; Zwarenstein, 2000; Zwarenstein, Goldman, & Reeves, 2009). A regional scan of IPC conducted in Ontario found having IPC practice in place increased the level of trust that patients felt towards healthcare providers (Casimiro, Hall, Archibald, Kuziemy, Brassat-Latulippe & Varpio, 2011). The WHO indicates that regardless of context the benefits of incorporating IPC can be seen across healthcare settings. These benefits support those found in the literature and include: improved workplace practices and productivity, improved patient outcomes, raised staff morale, improved patient safety, and better access to healthcare because the skill of the individual team members are maximized and duplication is reduced (WHO, 2010). Patients also value collaborative practice. From the patient perspective,

one example of lack of collaboration among health professionals may be experienced as having to undergo multiple assessments from multiple caregivers gathering the same information. Although sometimes warranted, this is often inefficient, and is frustrating for patients who wonder why their healthcare providers cannot communicate with each other and share this information.

Antecedents

IPC by definition requires the collaboration between two or more health professionals (Baggs, Norton, Schmitt, & Sellers, 2004; CIHC, 2010; D'Amour et al. 2005; Gill & Ling, 1995; Lawson, 2004; McCallin & Bamford, 2007; McCallin & McCallin, 2009; Vyt, 2008; Zwarenstein et al., 2009). It is also necessary for the healthcare professionals involved in the team to be competent in each of their individual roles (Lawson, 2004; McCallin & Branford, 2007; Sataloff, 2010; Viejo, 2011). Competence promotes trust in each other's abilities to fulfill his or her role within the team. Trust is paramount in the establishment and optimization of IPC, especially within teams where professional silos previously existed (Conn, Oandasan, Creede, Jakubovicz & Wilson, 2010).

IPE plays a key role in fostering the competencies required for effective IPC (Reeves, Goldman & Oandasan, 2007; Rice, Zwarenstein, Conn, Kenaszchuk, Russell & Reeves, 2010; Sataloff, 2010). IPE programs are designed to improve how professionals work together (Rice et al., 2010; Thannhauser, Russell-Mayhew & Scott, 2010) through activities which allow them to learn with, from and about each other. IPE can be further defined as "any type of educational training, teaching or learning session in which two or more health and social care professions are learning interactively" (Reeves, Zwarenstein, Goldman, Barr, Freeth, Hammock & Koppel, 2007). Casimiro et al. (2011) found IPE to be the most influential systemic determinant of

successful IPC. These findings support the need for future studies to identify successful methods of IPE.

Organizational or institutional support is imperative for successful IPC. Support is required through allocation of resources for education and development of essential skills (Goldman, Meuser, Rogers, Lawrie & Reeves, 2010; Sataloff, 2010; Viejo, 2011; Vyt, 2008; WHO, 2010). This support also includes the encouragement of innovation and implementation of change (Borril et al., 2000; Xyrichis & Lowton, 2008). By embedding IPE and collaborative practice in legislation, hiring practices, accreditation requirements and/or registration criteria, policy-makers and government leaders can be champions of IPC.

Global Context

The WHO has been integral in moving collaborative care forward. In 1978 the WHO identified IPE as a means to promote collaborative care. IPE was entrenched in the WHO strategy to promote “Health for All by the year 2000” (WHO, 1978). Norway, Sweden, Finland and other smaller European countries were influenced by this strategy and began to incorporate collaborative practice into health care education and practice settings (Barr, 2000). The United Kingdom began taking steps to promote IPC, developed IPE initiatives and in 1987 founded the Centre for the Advancement of Interprofessional Education (CAIPE). In 2006, the WHO recognized that many health care systems were struggling to deliver comprehensive care. To change the culture of health care and to address the impact of a growing shortage of health care professionals worldwide the WHO began an extensive examination of the current models of health care.

WHO Framework for Action. In 2010 the WHO published the Framework for Action on Interprofessional Education and Collaborative Practice. The framework highlights the status

of IPC worldwide and provides health agencies across the world with ideas on how to contextualize their current systems, encourages them to commit to promoting a culture of IPC and to champion its benefits. The WHO investigated IPC for nearly fifty years and determined that effective IPE promotes respect among the health professions, eliminates harmful stereotypes, and elicits patient-centred care (WHO, 2010). The framework identifies a number of key mechanisms essential for achieving IPE and collaborative practice. Since its publication, the WHO framework has been widely cited in the literature addressing IPE and IPC and is referenced by key organizations including the Canadian Interprofessional Health Collaborative (CIHC, 2010).

Interprofessional Collaboration in Canada

The past decade has been important for primary health care reform in Canada. The Canadian literature provides some indication of what IPC in practice entails in Canadian settings, and demonstrates that knowledge of this complex concept is still developing. In 2001, the Prime Minister of Canada established the Commission on the Future of Health Care in Canada and the Honourable Roy Romanow was the sole commissioner. Romanow stated that in order to create a sustainable system, “We must transform our health care ‘system’ from one in which a multitude of participants, working in silos, focus primarily on managing illness, to one in which they work collaboratively to deliver a seamless, integrated array of services to Canadians” (Romanow, 2002, p. 19). The report provides forty-seven recommendations that support the core competency domains of IPC. Despite the recommendations of Romanow, it is evident upon review of the literature that a better understanding of the complex relationships which exist between healthcare professionals is still needed to operationalize IPC in clinical and educational settings (Rice, Zwarenstein, Conn, Kenaszchuk, Russell, & Reeves, 2010).

IPC is a process not an event. Barr and Ross (2009) summarized the domains of IPC in the context of healthcare as occurring when multiple health workers from different professional backgrounds work together cooperatively in a team, problem solving, coordinating care, learning together, and networking as they deliver quality care to patients and their families. Both the CIHC (2010) and WHO (2010) identified six core competency domains required for effective IPC: role clarity, team functioning, interprofessional communication, interprofessional conflict resolution, patient/family-centred care and collaborative leadership. Individuals who are competent in the role clarity domain have a good understanding of their own role and that of others on their health care team. They are also able to draw on this knowledge appropriately to engage other members of the team to deliver high quality patient/client care to meet the patient's goals. To be competent in the patient/family-centred care domain health care professionals must actively engage the patient/family in the development and implementation of their healthcare plan. To be competent in the domain of team functioning, health care professionals/students must have a solid understanding of the principles of team dynamics and processes. Effective relationships must be established with other members of the team, including the patient, in order to participate in team decisions and be respectful of other team members' participation and actively reflect upon their functioning in the team and with patients. Health care professionals and or students who are competent in the collaborative leadership domain both understand and apply leadership principles that support IPC. Shared decision making is supported through the facilitation of effective team processes and an environment for collaborative practice amongst all team members. Within collaborative or shared leadership, professionals/students support the choice of leader depending on the background of the situation. To be competent in the domain of interprofessional communication individuals must be able to effectively communicate with

individuals from different professions, as well as patients and or families in a collaborative and respectful manner. This is achieved by actively listening to other team members, communicating in a manner that is clear, and ensuring understanding. The sixth domain of IPC is interprofessional conflict resolution. Competency in this domain requires the health care professional/student to actively and constructively address conflict as it arises. Individuals need to recognize the potential for conflict and be able to identify common situations that will likely lead to conflicts, including role ambiguity, stereotypes, hierarchies, and differences in goals. He or she also needs to understand strategies to deal with conflict and be able to create an environment that allows for safe expression of differing opinions.

Canadian Interprofessional Health Collaborative. In 2006 the Canadian government established funding to support the creation of the Canadian Interprofessional Health Collaborative (CIHC). The CIHC's goal is to be a creative, interactive and permanent hub for Canadian interprofessional activity. The CIHC provided the WHO with significant support during the development of the Framework for Action and published its own framework in February of 2010 entitled A National Interprofessional Competency Framework. The CIHC reviewed the literature related to IPC competencies and existing frameworks to develop this Canada-wide competency framework. This framework built upon work done by the National Expert Committee for IPE for patient centred practice (IECPCP) which identified factors influencing IPE/IPC readiness within the academic system and healthcare system (D'Amour & Oandasan, 2005). The CIHC has also supported the biannual Collaborating Across Borders conference for the past four years. This conference is a joint conference between Canada and the United States around the key topics of IPE and IPC. In 2012 the CIHC became a not-for-profit

organization. The CIHC continues to collate and synthesize information regarding IPE and collaborative practice, which can be accessed through the CIHC website.

Canadian academia. In response to recommendations put forward by the WHO and the Canadian government, health organizations and academic institutions across Canada are making changes to practice and programs. Accreditation Canada is creating motivation for this change by addressing IPC in the accreditation of healthcare delivery in Canada (CIHC, 2010). Academic institutions have begun to create programs similar to one at Laval University in Quebec City where three faculties; Medicine, Nursing and Social Work came together to pilot an interprofessional training program (Bilodeau, Dumont, Hagan, Pare, Razmpoosh, Houle, Briere & Iloko-Fundi, 2010). In 2007, the University of Toronto's Council of Health Sciences Deans delivered a mandate to establish mandatory Interprofessional Education (IPE) curricula. In 2009 the University of Toronto established the Centre for Interprofessional Education and launched a comprehensive IPE program for all students in Health Sciences faculties. The University of Toronto is closely linked with the University Health Network and the Toronto Rehabilitation Institute where collaborative care is operationalized in the practice setting. The mission of the Centre for Interprofessional Education is to develop a curriculum that will provide health profession students with the "core competencies needed for the provision of interprofessional evidence-based care in a collaborative, team practice environment" (Centre for Interprofessional Education, 2010). The Centre for Interprofessional Education also offers a certificate course for health professionals, leaders and educators: Educating Health Professionals in Interprofessional Care (ehpic®). The Centre's faculty have delivered this course to health professionals across Canada, the United States of America and Australia.

The College of Health Disciplines at the University of British Columbia has also been actively taking steps to facilitate various types of interprofessional experiences. In 2010, Charles, Bainbridge and Gilbert published the University of British Columbia Model of Interprofessional Education to address this gap in the area of IPE. The University of Manitoba also has an IPE initiative, which will be discussed in a later section.

All provinces and territories have made efforts to improve collaborative team-based care (Conference Board of Canada, 2012). Canadian research in interprofessional primary care has called attention to the relational aspects of teams, including the importance of role clarity among providers (Akeroyd, Oandasan, Alsafarr, Whitehead, & Lingard, 2009; Soklaridis, Oandasan & Kimpton, 2007), team education and team-building (Wilson, Moores, Woodhead Lyons, Cave, & Donoff, 2005), and creating opportunities for collaboration via optimal design, use of time and physical space (Oandasan, Conn, Lingard, Karim, Jakubovicz, et al., 2009). These studies support the six competency domains identified by the WHO and CIHC, and offer insights into ways to support IPC within primary healthcare teams in Canada.

Research Problem

There is clear support for the notion that collaboration among health professionals is necessary to improve quality and safety in healthcare. It is evident from the literature that efforts to improve IPC through IPE are taking place in Canada. Various IPE methodologies exist in the literature, including didactic, immersion, and experiential learning activities. The majority of IPE studies conducted to date are at the pre-licensure level for health professionals; there is a gap in the knowledge regarding the effectiveness of IPE interventions for practicing healthcare professionals.

Purpose of Study

Improving IPC amongst practicing healthcare professionals can improve quality within the healthcare system. The purpose of this study is to determine the effectiveness of an IPE intervention that employs both didactic and experiential learning components to promote role clarity and team functioning. Findings from this study may be used to inform organizational policy and future initiatives dedicated to increasing the level of IPC among practicing healthcare professionals.

Terms and Operational Definitions

Interprofessional education: Interprofessional education (IPE) is when professionals or students of two or more professions learn with from and about one another to improve collaboration and the quality of health care provided (CAIPE, 2006; Irajpour, Norman, & Griffiths, 2006).

Interprofessional education differs from multiprofessional education, which is when two or more professionals or students learn in parallel.

Healthcare Professional: Professional is an all-encompassing term that is inclusive of all individuals whose skills contribute to the physical, mental and social wellbeing of a community (WHO, 2010). It is not limited to disciplines requiring an undergraduate degree. Common healthcare professionals include nurses, physicians, physiotherapists, occupational therapists, pharmacists, respiratory therapists, nursing assistants, diagnostic service professionals, nurse practitioners and physician assistants (WHO, 2010, p16). The CIHC (2010) defines a profession as a career requiring unique preparation.

Discipline: Refers to a subject that is taught. Can have multiple disciplines within one profession, for example pediatrics and oncology within the profession of medicine (Oandasan & Reeves, 2005)

Adult learning: Interprofessional learning is grounded in adult learning theory. The Theory of Adult Learning (Knowles, 1978), suggests learning is more likely to become embedded if the learner has a degree of control over the pace and content of learning and if the area of study is personally and or professionally relevant.

Experiential Learning: Kolb (1984) states that we gain knowledge through experiences, and results from the combination of understanding and converting the experience. Experiential learning is based upon the linkage of cognitive and behavioural domains, knowing and experiencing. Experiential learning activities include such things as: cooperative education placements, practicum experiences, and classroom-based hands-on laboratory activities.

CHAPTER 2 - THEORETICAL FRAMEWORK

Theories are conceptual tools that, regardless of their discipline of origin, can be used to understand and place complex phenomena into perspective and guide change (McKenna, 1997). According to Leathard (2003), models within collaborative practice should display a manageable context of how professionals or sectors can work together effectively. In this chapter the theoretical framework that guided this research will be discussed.

Frameworks

Opportunities and strategies for implementation and promotion of interprofessional collaboration within the Canadian healthcare system are discussed in the literature. Interprofessional collaboration frameworks and models can provide the necessary foundation to create and sustain a culture of collaboration. Apart from the framework developed by the CIHC discussed earlier, there are a limited number of models available developed for use outside academic institutions (D'Amour et al., 2005). D'Amour has researched, proposed and published potential frameworks that could improve our understanding of interprofessional collaboration in health organizations. One example is the Structural Model of Interprofessional Collaboration (D'Amour, 1997), which conceptualizes the process of collaboration. Gaboury et al. (2009) adapted the Input Process Output Model to gain a better understanding of interprofessional collaboration and identify constructs of IPC that may link to patient health outcomes.

D'Amour and Oandasan's Theoretical Framework

D'Amour and Oandasan (2005) developed a framework for interprofessional education and collaborative patient-centred practice (IECPCP). The framework developed by D'Amour and Oandasan (2005) provides a structure for IPE interventions and associated research and was used to guide this research study.

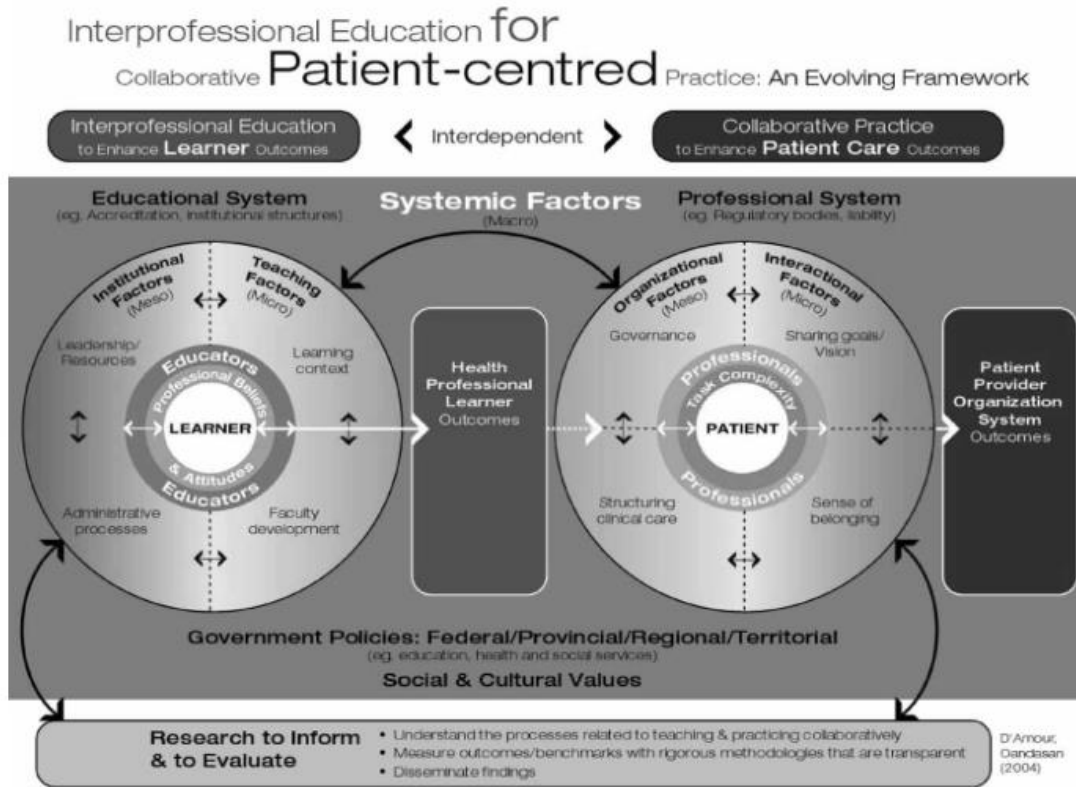
As a result of the development of the IECPCP framework D'Amour and Oandasan (2005) proposed a new concept: interprofessionalism. Interprofessionalism is a process; an approach to healthcare and education; and is defined as “the development of a cohesive practice between professionals from different disciplines” (D'Amour & Oandasan, 2005, p.9). This requires an understanding of the processes and determinants that influence IPE and IPC, and the linkages between them. The IECPCP framework (Figure 1) is made of two circles and provides a detailed graphic to illustrate the interdependencies between healthcare professions' education and IPC in practice. Micro, meso and macro levels are addressed in each circle, and linkages between the determinants and processes of collaboration are formed. The circle on the left focuses on the learner and factors that will affect his/her capacity to become a practitioner who is a competent collaborator. As the research study targeted learners who are practicing healthcare professionals, a detailed description this portion of the framework follows.

The learner is in the middle of the first circle, providing the visual that a learner's capacity to become an effective collaborator is affected by professional beliefs and attitudes, educators, teaching factors (micro level), institutional factors (meso level) and systemic factors (macro level). Teaching factors include the learning context and faculty development. The learning context includes the delivery of IPE and addresses the audience, the content, the setting and timing of education. Faculty development involves developing the educator's capacity to facilitate IPE and how to self-identify his/her professional stance and opinions towards collaborative practice. Institutional factors include leadership/resources and administrative processes. Leadership deals with administrators championing IPE and collaborative practice through allocation of resources. Administrative processes encompass procedures for implementation of initiatives.

The IECPCP framework has been used to guide 135 research studies since its publication in 2005 (Google Scholar, 2015). For example, it was used in the U.S. by the Interprofessional Education Collaborative Expert Panel (2011) to identify and define core competencies for collaborative practice to develop health profession students who are ready to practice collaboratively. The IECPCP framework has also been used to guide tool development (e.g., Banfield & Lackie, 2009), undergraduate education programs (e.g., Walsh, Moore, Barber & Opsteen, 2014), and post-licensure IPE initiatives (e.g., Drummond, Abbott, Williamson & Somji, 2012).

D'Amour and Oandasan (2005) state that research in the area of IPC is needed to better understand the concept and advance this area further. Education and practice are viewed as interdependent, thus IPE will enhance patient-centred care. The IECPCP framework was used to guide the design of the intervention for the current research project.

Figure 2.1: Interprofessional Education and Collaborative Patient-Centred Practice (IECPCP) Framework. (D'Amour & Oandasan, 2005, *Copyright permission obtained*)



CHAPTER 3 - LITERATURE REVIEW

This chapter will include a review of the literature on the current state of IPC in Canada at the national, provincial and local levels. Common IPE interventions to promote IPC are then presented and a discussion of the common elements will follow.

IPC in Canada

The Canadian literature on IPC provides some indications of what IPC in practice entails, and demonstrates that knowledge of this complex concept is still developing. As discussed in Chapter One, Canada has made significant contributions to the study and understanding of IPC beginning in 2002 with the Romanow report on the Future of Healthcare in Canada. Subsequent to this, the CIHC (2010) developed a document titled A National Interprofessional Competency Framework and provided the WHO with significant support during the development of the Framework for Action (2010). Subsequently, numerous Canadian based investigations regarding IPE and IPC has taken place and a discussion of the findings in the literature follows.

Tools. In 2007, Interprofessional Care: A Blueprint for Action in Ontario was submitted to the provincial government by the Interprofessional Care Steering Committee, a committee composed of some of Ontario's leading experts and decision-makers in the fields of healthcare and education. The blueprint was created by the Interprofessional Care Steering Committee (ICSIC) in response to the 2006 IPC summit and provides four key recommendations and associated activities: building a foundation; sharing responsibility; implementing systemic enablers; and leading sustainable cultural change.

The Ontario Ministry of Health and Long-term Care funded the Quality Improvement and Innovation Partnership (QIIP), which developed The Team Building Resource Guide for Family Health Teams (QIIP, 2010). The Team Building Resource is a synthesis of materials intended to

assist teams to better understand team processes and find ways to strengthen collaborative practice within the Ontario healthcare system.

Many health professionals may believe that they are practicing collaboratively, however; measurement tools are needed to assess the level of collaboration to provide professionals with further insight (Orchard, King, Khalili & Buzzing, 2012). Several tools have been developed by Canadians to evaluate or measure IPC (Kenaszchuk, Reeves, Nicholas & Zwarenstein, 2010; King, Shaw, Orchard & Miller, 2010; Khimdas, Shetty, Rajakumar, Meyer-Macaulay, Shapiro, Cheshire et al., 2012; Mann, McFetridge-Durdle, Breau, Clovis, Martin-Misener, Mathewson et al., 2012). One example is the Interprofessional Collaborative Organizational Map and Preparedness Assessment (IP-COMPASS) tool, which was created in response to the Romanow Report (2002) and knowledge that incorporating IPE into curricula is a key challenge to delivering IPC (Parker, Jacobson, McGuire, Zorzi & Oandasan, 2012). The key authors of the IP-COMPASS, Oandasan and Parker, are affiliated with the University of Toronto. The IP-COMPASS is a “quality improvement framework that allows healthcare professionals in clinical settings determine their organization’s readiness for delivering IPE by self-assessing success factors in four key areas: commitment to IPC, IPC structures and supports, commitment to IPE, and IPE structures and supports” (Parker et al., 2012, p. 161). This tool was tested at four pilot sites independently for utility, validity and feasibility. The IP-COMPASS is used within the University Health Network to facilitate preparation for student IPE placements (L. Sinclair, personal communication, January 8, 2015).

Primary care. The current and future health care needs of Canadians are largely dedicated to managing chronic conditions. Primary health care settings, more than acute care settings, are where chronic conditions can best be managed. The literature identifies several

areas of healthcare that have a substantial unmet need for IPC, including mental health, chronic disease management, primary care and palliative care (Lee, Schneider, Bellefontaine, Davidson & Robertson, 2012). Chronic conditions include diabetes, cancer, mental health disorders, heart disease and physical impairments (WHO, 2002). The prevalence of diabetes in Canadians aged 12 years and greater in 2011 was approximately 1.8 million (The Conference Board of Canada, 2013). If incidence and mortality rates continue at magnitudes seen in 2008/09, the Canadian government estimates the number of Canadians living with diabetes will rise to 3.7 million by 2019 (Public Health Agency of Canada, 2011). There are significant costs associated with caring for patients with chronic medical conditions, in particular depression and diabetes. IPC teams have been identified as a potentially cost-effective method to deliver high quality healthcare to this population (Broyles, Conley, Harding & Gordon, 2013; van Steenberg-Weijnenburg, van der Feltz-Cornelis, Horn, van Marwijk, Beekman, Rutten & Hakkaart-van Roijen, 2010).

Acute care. Research regarding IPC in acute care is not as extensive as research in primary care. This may be because the Canadian government identified primary care as a priority area. Intervention based studies with regulated healthcare professionals have been conducted on medical and surgical wards to promote interprofessional communication (Rice, Zwarenstein, Conn, Kenaszchuk, Russell & Reeves, 2010). Interprofessional communication and collaboration within intensive care units is identified as a positive strategy that will improve patient safety and outcomes (Northway & Mawdsley, 2008; Rose, 2011). The importance of responding constructively to interprofessional conflict by team managers to promote interprofessional collaboration amongst team members is also identified (St-Pierre, 2012).

Specialty teams. Specialty teams such as palliative care teams are inherently interprofessional and value interprofessional care delivery (Blacker & Deveau, 2010). IPC is a

significant aspect of the palliative care philosophy. Burnham, Day and Dudley (2010) noted palliative patients achieved clinically and statistically significant improvements in pain management when care was delivered using a collaborative approach.

Quality care. Interprofessional relationships and dynamics are key factors in transforming a system into one that can achieve quality (Hilts, Howard, Price, Risdon, Agarwal & Childs, 2013). Some quality indicators identified by Accreditation Canada are length of stay, incidence of hospital acquired infections, medication management, incidence of critical incidents i.e., pressure ulcers and falls, and adherence to best practice (Accreditation Canada, 2015). Studies suggest that through optimizing IPC individual healthcare professionals' strengths are maximized leading to enhanced quality of patient care, decreased medical errors and optimized efficiency (Hoffman, Rosenfield, Gilbert & Oandasan, 2008; Jansen, 2008; King & Anderson, 2012). Consequently, Canadian governing bodies within healthcare are examining the potential for IPC to improve the quality of care provided by health care professionals (Baker, Denis, Pomey, & MacIntosh-Murray, 2010).

Collaborative interprofessional teams have been identified as a means to prevent unintentional injuries, a leading cause of death, in indigenous children and youth in Canada (Banerji, 2012). Interprofessional teams are needed to develop injury prevention programs that improve education, improve social determinants of health such as poverty and parenting and focus on the needs of Indigenous populations are needed. The development of these programs from current evidence will require multidisciplinary, collaborative and sustainable approaches.

IPC in Manitoba

The Winnipeg Regional Health Authority (WRHA) has chosen to label their interprofessional collaboration initiative *Collaborative Care*. Collaborative care is “when health

providers from various professions work together - and include people and their families in making decision about their health - to provide high quality care” (Lamont, 2013). The WRHA is committed to advancing collaborative care and dedicated positions to promote collaborative care were created at various levels. For example there is a position of Vice President of Interprofessional Practice, and another position entitled Chronic Disease Specialist. The role of the Chronic Disease Specialist is to ensure that collaborative care is embedded within all of chronic disease collaborative strategies, procedures and practices. The Chronic Disease Specialist is part of the Chronic Disease Collaborative and is housed in Primary Health Care although the role is to take a systems approach across all sectors of healthcare (C. Deckert, personal communication, February 23, 2015). The Chronic Disease Specialist also helps to build Collaborative Care capacity within WRHA leadership, teams and community partners (C. Deckert, personal communication, February, 23, 2015). The Chronic Disease Specialist does this by working with teams across the region to promote collaborative care, and support site based collaborative practice leads.

Three individuals from the WRHA received funding from the Executive Training for Healthcare Improvement Program (EXTRA project) through the Canadian Foundation for Health Care Improvement, with the goal of determining what a collaborative, high functioning team looks like. Eight indicators of a high-functioning, collaborative team have been identified: (1) the team has identified a standardized way to measure team performance and team performance indicators are monitored regularly and guide team decision-making; (2) care is organized based on the goals of patients (as opposed to the needs of health care providers); (3) team members have dedicated time for team development activities; (4) there is shared space in the environment for teams to work/socialize together; (5) the team has a defined team role statement and team

goals; (6) processes are in place for interprofessional care planning (discharge rounds, care conferences, care rounds); (7) team composition and roles are defined by the needs of patients, scope of service, and the goal of optimizing scope of practice of health providers; and (8) standard operating procedures/clear role statements for all team members exist and minimize unnecessary duplication of service (Bowman, Klaasen & Komenda, 2013). Subsequently, a team toolkit, The Extra Toolkit (2013), was created which provides teams with the resources necessary to walk them step-by-step through the process of enhancing collaborative care. The first step identified in The Extra Toolkit is to determine if the team/organization is ready to take steps to enhance collaborative care within their team/organization. The Extra Toolkit includes eight key questions to consider, if the team answers yes then the team/organization is likely ready. A facilitator then guides the team through a series of steps which includes meeting with leadership, a team orientation session, team self-assessment using the eight indicators of a high-functioning team, and then a debrief and development of an action plan. The recommended timeline for completion is eight to ten weeks. A primary care clinic in Winnipeg and a geriatric day hospital are examples of practice areas that have participated in the assessment. The toolkit is also used by the Centre for IPE in Toronto and can be accessed on the WRHA internal website.

The WRHA has developed numerous additional tools to support the advancement of collaborative care throughout the region. Their website provides a link to all of these tools, including videos which highlight the six core competency domains from a patient centred perspective; success stories from across the region, and links to key resources such as the CIHC.

In 2012 and 2014 the WRHA in collaboration the University of Manitoba sponsored the University of Toronto Centre of IPE to provide a five-day workshop for regulated health care

practitioners from across the region with the opportunity to gain a further understanding of collaborative care principles. The workshop attendees became members of a larger community of practice within the WRHA who are striving to promote collaborative care. While this is a great start, it was only available to ninety-eight people from across the region. Data to measure the impact of the sessions were not collected. There continues to be a large gap in educating practicing professionals within the WRHA, and across Canada. Collaborative practice is not innate; it is a skill that requires education and training (Halabisky, Hubert, Stodel, MacDonald, Chamber, Doucette, Dalziel & Conklin, 2010), therefore additional strategies to educate practicing professionals should be considered. The WRHA offered a four-day IPE workshop in May 2015, and a developmental evaluation is underway. Data from this evaluation will be used to inform future educational sessions and initiatives to promote collaborative practice within the region (S. Winters, personal communication, February 13, 2015). After attending the 2012 workshop, and as part of the collaborative care opportunity project required after the workshop, the researcher developed and implemented an IPE session for all new hires at Health Sciences Centre addressing the core competency domains of IPC. The department that developed and delivered education for new employees at the time employed the researcher and this influenced the timing of the IPE session.

Manitoba. The Manitoba government has developed four primary care networks. The networks build upon existing physician networks to deliver a multi-disciplinary approach to care that is patient-centred. The focus of these networks is disease prevention and coordinated disease management. All professionals in a network are expected to work together to plan and deliver comprehensive primary care. Members of the different teams include health care professionals such as physicians, primary care nurses, nurse practitioners, social workers,

physiotherapists, occupational therapists and mental health workers (Manitoba Health, 2012). Three 'QuickCare Clinics' led by nurse practitioners opened in Manitoba in 2011 and two others have since opened. The clinics also employ primary care nurses and primary care assistants. While the primary care networks and the quick care clinics were created to deliver more comprehensive patient-centred care an evaluation to determine if true collaboration has been achieved has not taken place (M. Crawford, personal communication, February 19, 2015).

Barriers to IPC

Healthcare professionals are socialized throughout their education to adopt a profession-based vision of their patients and the services they provide. Professions develop strong theoretical and profession based frameworks whereas collaboration requires making changes to these paradigms and implementing a culture of collaboration rather than competition (D'Amour, Ferrada-Videla, San Martin Rodriguez & Beaulieu, 2005). Power imbalance and power struggles that exist between healthcare professions act as a significant barrier to collaborative practice (Seenandan-Sookdeo, 2012; Jabbar, 2011; Gaboury et al., 2009).

This power imbalance is perpetuated by provider remuneration schemes and financial incentives as it creates a hierarchy. Physicians in Canada are predominantly paid under a blended model including fee-for-service; however, other healthcare professionals are often paid on a contract or salary basis (Conference Board of Canada, 2012). Referral policies in Canada create another barrier to IPC. For example, nurse practitioners screen and diagnose diseases and refer patients to medical specialists. Physician specialists receive a higher rate of financial compensation for patient referrals made by a physician. Furthermore, since physicians are not obligated to accept referrals made by nurse practitioners, there is a financial disincentive to see patients by a nonphysician referral. If the specialist decides to see the patient, they are not

required to provide a care plan to the nurse practitioner, thus limiting collaboration. Additional barriers to creating true IPC in Canada include lack of role clarity, and lack of IPE and training (Conference Board of Canada, 2012).

Interprofessional Education Interventions

Interprofessional Education at the Pre-licensure Level

Pre-licensure IPE involves students from two or more health care professional programs interacting with each other to learn with, from and about each other (CAIPE, 2002). The primary goal of IPE at the undergraduate or pre-licensure level is to help students become collaborative practitioners (Oandasan & Reeves, 2005). Universities across Canada, Australia and the United Kingdom are committed to the preparation of graduates who will be effective members of health care teams (Lapkin, Levett-Jones & Gilligan, 2013). Barr, Freeth, Hammick, Koppel, and Reeves (2000) argue that IPE is most successful when it is integrated early in the socialization and educational experience of diverse professionals. Evans, Cashman, Page and Garr (2011) argue that IPE needs to begin at the pre-licensure level to ensure that knowledge, attitude and skills necessary for collaborative practice are incorporated into the “DNA” of future health care professionals.

IPE has been implemented in Canada in a few different formats at the pre-licensure level. The University of British Columbia has developed a number of elective interprofessional courses available to health sciences students including courses directed towards the development of health care teams. Dalhousie University mandates that students in the Faculties of Dentistry, Health Professions and Medicine participate in a series of interprofessional learning modules (Johnston, Ryding & Campbell, 2003) that are threaded throughout the curriculum. Memorial University of Newfoundland and the University of Alberta have a separate interprofessional

course that the students must successfully complete in order to continue in their programs. Students at Memorial University are assigned to interprofessional teams and then complete a series of case studies including discharge planning, ethical dilemmas and community health (Cook, 2005). Students at the University of Alberta complete a 15-18 credit Certificate Program consisting of three components: knowledge, practicum and critical reflections. The University of Alberta published an evaluation of the initiative in 2006 (Philippon, Pimlott, King, Day & Cox, 2005) to inform the development of future programs. Philippon et al. (2005) conducted a one-year follow up with former students who had since become practicing professionals. Former students completed a site developed program evaluation tool. Findings suggest that students had an increased understanding of other disciplines and how to communicate their roles to each other. However, details of the tool and its psychometric properties were not reported.

All students in the Faculty of Health Science at McMaster University in Hamilton, Ontario are required to participate in mandatory IPE activities. There are a variety of learning activities developed to choose from that are based on adult learning principles (Solomon & Salfi, 2011). The communication skills sessions are one of the learning activities and is three hours long. Students from medicine, nursing, physiotherapy, occupational therapy, midwifery, pharmacy and physician assistant programs are able to participate. During the session students review a patient scenario and plan the initial interview with a standardized patient. Students then conduct an interview with that standardized patient. Upon completion of the interview, students meet to discuss their findings and develop a treatment plan. A follow up meeting is then conducted with the standardized patient to share the interprofessional care plan. A faculty member is observing all of these activities. Upon completion of the activities there is a feedback session with the faculty facilitator, and individual and team feedback is provided. Using a

pretest-posttest design Solomon and Salfi (2011) evaluated the communication skills session with the *Interdisciplinary Education Perception Scale* (IEPS) (Leucht, Madsen, Taugher & Patterson, 1990). Students were also asked to participate in an interprofessional focus group or an interview. A significant difference was found between the IEP's overall score following the communication skills session ($p=.034$) compared to before the session (Solomon & Salfi, 2011). However, only one of the subscales, Perception of Actual Cooperation, reached a statistically significant level ($p=.009$). Qualitative analysis of the sessions indicate that the communication sessions were very effective means of teaching the skills required for effective interprofessional communication. While the IEPS tool has undergone rigorous psychometric testing, it is not without problems. Challenges with the tool are attributed to a lack of consistent vocabulary and consensus regarding the important elements that need to be measured in IPE initiatives (Thannhauser, Russell-Mayhew & Scott, 2010).

Watt-Watson, Hunter, Pennefather, Librach, Raman-Wilms, Schreiber, et al. (2004) developed, implemented, and evaluated a twenty-hour pain education program for five hundred forty students in health professions' programs, which was based on the curriculum guidelines published by the International Association for the Study of Pain week at the University of Toronto. Together, students from six different health sciences faculties took classes that dealt explicitly with interprofessional approaches to pain management. The program was not elective, and students were expected to attend all sessions as a component of their current coursework. The twenty-hour curriculum was scheduled across five mornings of a single week. Didactic multi-professional large groups sessions were held on the Monday, Tuesday and Friday morning. Interprofessional small-group case based sessions were held on the Wednesday and Thursday morning. Clinicians from all the professions represented facilitated these sessions. The

clinicians received two hours of facilitator training. The first two levels of Barr et al.'s (2000) modified typology of education outcomes were used to evaluate the session namely; the learners' view of the program; and changes in learners' knowledge and beliefs. Participants reported that interprofessional learning gained during the smaller group work exceeded their expectations regarding an increased awareness of interprofessional roles and the importance of interprofessional collaboration during pain management (Watt-Watson et al., 2004).

A pilot study was conducted at the University of Leeds in the faculties of Medicine and Health Sciences to determine what types of IPE activities and under what circumstances produce what types of outcomes (Kilminster, et al., 2004). Medicine, nursing and pharmacy students participated in a series of three workshops. A consistent sample selection strategy was not used as nurses volunteered to attend, while pharmacists and medicine students were required to attend the workshops. The workshops were developed with the intent of promoting participants' understanding about each other's professional roles, enhancing teamwork and developing communication skills. The project group had representation from all three professions, all of whom acted as facilitators. They received two half-day training sessions to facilitate the student sessions. The student sessions incorporated an experiential learning approach, with clinical scenarios and a standardized patient. The scenarios were developed from information obtained through a student questionnaire. Semi-structured interviews were conducted with the participants before the workshops and then again two to three months afterward. Participants from all three professions reported improvements in their individual communication skills with other professions and an improved understanding of both their own roles and those of other professionals. There were no improvements reported in the participants' abilities to engage in shared decision-making and clinical action planning. Findings from this study suggest that

facilitated case based learning using standardized patients is an effective method to promote role clarity and interprofessional communication amongst undergraduate students.

Queen's University in Kingston, Ontario offers the 'Professionals in Rural Practice' course. The course was developed to prepare students in professional programs in Canada to become better equipped to work in a rural interprofessional team (Medves et al., 2008). This course also utilized experiential and interactive teaching methods. The course is unique from other university courses developed because it aims to prepare professionals beyond the health sciences and includes theologians, nurses, teachers, physicians, occupational therapists and physical therapists. The goals of the course are to provide the learners with knowledge of and respect for the roles of other professions, to support the development of collaborative skills necessary for rural practice, including shared decision making, interprofessional communication and conflict resolution (Medves et al., 2008). Interactive and experiential teaching strategies are used throughout the eight week course. Enrolment in the study was voluntary. The course was evaluated using a mixed methods approach, a survey that included both open and closed ended questions were distributed to the participants. The closed ended questions were adapted from the Interdisciplinary Education Perception Scale (Leucht, Madsen, Taugher & Petterson, 1990). Open ended questions were transcribed and a content analysis of the data was completed. The course was evaluated over two separate years. Feedback from the first year led the instructors to be more intentional about explaining how students would be evaluated and a constant instructor across learning modules was implemented to ensure students had a facilitator available for consultation. The value of increased knowledge of other disciplines and strategies to promote collaborative practice were apparent in the second offering of the course. This highlights the importance of constant evaluation and the potential merit of replication studies.

A randomized control trial (RCT) to assess the effectiveness of IPE to promote Collaborative Practice is logistically challenging. At the undergraduate level a RCT would (ideally) involve many universities; some universities or programs would make significant changes incorporating IPE while others would not (Zwarenstein, Reeves & Perrier, 2005). Street, Eaton, Clarke, Ellis, Young, Hunt, et al. (2007) conducted a mixed methods RCT at the University of Bristol and the University of West England to evaluate the effectiveness of using community-based case studies of disabled children and their families for IPE. Participants were fourth year medical students and second year pediatric nursing students. A total of one hundred sixty students were randomly assigned into either interprofessional (case) or uni-professional (control) pairs. Each group met for an introductory session at the beginning of a two week period. Each pair then visited a disabled child at home and school and presented their experience to the rest of the group.

Quantitative and qualitative evaluation methods were used to evaluate the learning experience. Quantitative data was collected with the Attitudes Toward Health Care Teams Scale (Heinemann, Schmitt, Farrell & Brallier, 1999). Student attitudes towards interprofessional education and professional stereotyping changed as a result of this IPE exercise. Qualitative data were collected during audio taped focus groups on the learning experience and outcomes. The focus groups were conducted in the four different study groups. Results from the study showed that IPE had a positive effect on role stereotypes and improved role clarity across professions. However, the mean scores for the nursing students were significantly higher than they were for the medical students, suggesting that the impact of this method of IPE may not be equal across professions. The inclusion of only two professions limits the generalizability of the findings.

University of Manitoba. Twenty interprofessional projects were funded by Health Canada between 2005 and 2008, two of these projects were located at the University of Manitoba. The first University of Manitoba project was: Interprofessional Education in Geriatric Care (Grymonpre, van Ineveld, & Boustcha, 2008), which ran over two years and nine months. The project used a mixed methods approach and was designed around the D'Amour and Oandasan (2005) Interprofessional Education for Collaborative Patient Centred Practice (IECPCP) framework. Participants included pre licensure students from Nursing, Medicine, Occupational Therapy, Pharmacy and Physiotherapy. Participants participated in experiential learning activities in geriatric care settings addressing how to be more effective in IPC practice. Nineteen tools were used to measure and evaluate the impact of the project. Overall, the participants' feedback on the experiential learning blocks indicated that IPE was a positive experience. In a follow up project Grymonpre, van Ineveld, Nelson, Jensen, De Jaeger, Sullivan, et al. (2010) determined that the IPE experience taught to learners from multiple professions in a clinical context, positively affected the learners' teaming skills, knowledge, and attitudes towards interprofessional teams.

The second Health Canada funded University of Manitoba project was reported by Anderson, Ateah, Wener, Snow, Metge, MacDonald, Fricke, Ludwig and Davis (2011) who examined the impact of two IPE interventions; education only or education with an immersion experience on attitudes, perceptions, knowledge and skills related to IPC as compared to a control group who did not receive an IPE intervention. Six academic units: Dentistry, Medicine, Nursing, Pharmacy, Medical Rehabilitation and Dental Hygiene partnered with two service-provider organizations. The study aimed to contribute new knowledge of best practices for IPE. The research question was "Do knowledge, attitudes, perceptions and values, and team skills

about collaboration and patient care improve based on the degree of exposure to interprofessional learning?” (Anderson et al., 2011, p 5).

Students were invited to information sessions regarding the study and then identified if they were interested in participating and how much time they were able to commit. Most students who expressed interest were then randomly assigned to the control group, an education-only intervention group or an interprofessional immersion experience intervention group. Some students self-selected to be assigned to a particular group due to the amount of time they were able to commit. Students in the education only and immersion groups were given the opportunity to “learn with from and about each other” (CAIPE, 2002). In addition, students in the immersion group were given the opportunity to shadow practitioners from different professions in a clinical setting, daily interaction with trained facilitators and to develop paper-based case scenarios.

The first day of the study all participants attended a shared thirty-minute orientation to the research project. Following this thirty-minute session all participants completed the Student Stereotypes Rating Questionnaire (SSRQ). Participants in the two experimental groups then completed a two and a half day education session with didactic learning activities, brainstorming and reflective activities, and discussion in small interprofessional groups. Participants in the immersion group then completed eight to nine days of facilitated immersive practice. The students were placed in interprofessional student groups of four or five at one of four practice sites.

Anderson et al. (2011) employed numerous evaluation tools, including the Attitudes Toward Interprofessional Teams scale (Heinemann et al, 2009), and the Interprofessional Education Perception Scale (Luecht, Madsen, Taugher, & Petterson, 1990). Results from this project showed an improvement in attitudes, values, and perceptions, plus knowledge about, and

skills relating to, teamwork and collaboration for participants in both the education and immersion groups. These improvements were found to be time dependent and related to the specific content covered.

As part of the same study reported by Anderson et al. (2011), Ateah et al. (2011) reported the specific findings on interprofessional healthcare students' perceptions of the healthcare disciplines using the SSRQ pre and post IPE interventions. Their findings revealed a significant increase in the summary mean score of all traits between the first and second survey for the exposure and immersion groups, and a significant increase between the first and third survey for the immersion group. The mean score ratings for professional competence, independence, team player, leadership, practical skills and confidence increased significantly between the first and third survey. However, contrary to what had been hypothesized, the immersion experience following the education session did not result in a further increase in the summary mean scores. These results suggest that an education session alone addressing the core competency domains of collaborative practice may be sufficient to effect positive change and create positive practice environments. However, Lapkin, Jones and Gilligan (2013) argued that university based IPE initiatives should be supported by clinically based learning activities because of the experiential learning that occurs during clinical placements.

In 2007, Health Canada supported a project that included consultation with key stakeholders and experts to explore ways to integrate Interprofessional Education for Collaborative Patient-Centred Practice (IECPCP) into the various health professional education accreditation processes. Twenty individuals including educators and representatives of professional associations and accreditation bodies in five health disciplines, as well as experts in IPE and in accreditation, participated in the consultation. This group drafted the Accreditation of

Interprofessional Health Education (AIPHE) standards. The goals of the AIPHE Project have been to ensure the integration of IPE standards into the accreditation standards of the six health professions participating: Nursing, Physiotherapy, Occupational Therapy, Social Work, Medicine and Pharmacy. In addition to the Health Canada funded projects described previously, these accreditation standards have been a driver of the IPE Initiative at the University of Manitoba.

The University of Manitoba is committed to the integration of interprofessional education opportunities for pre-licensure students in health profession programs. In 2008 the deans and directors from thirteen academic units: Clinical Health Psychology, Dentistry, Dental Hygiene, Human Ecology, Kinesiology and Recreation Management, Social Work, Medicine, Nursing, Occupational Therapy, Pharmacy, Respiratory Therapy, Physical Therapy and Physicians Assistants, agreed to support IPE and formalized the University of Manitoba IPE Initiative. Through the IPE Initiative, various IPE learning opportunities have been developed, implemented and evaluated for students at the University of Manitoba. These opportunities include faculty development sessions, interprofessional case studies, clinical placements and IPE events such as the Nightmare/NightCare. The Nightmare/NightCare event was an overnight event that occurred from 2011 to 2013 where students from different disciplines, including medicine and nursing, had the opportunity to be either a patient or a professional on an in-patient unit for a night shift. The students were given the opportunity to practice their professional skills in an interprofessional and collaborative manner. This experience has now evolved into a day shift experience and includes students from six different health professions: dentistry, dental hygiene, medicine, pharmacy, nursing and physician assistants (Personal communication, P. Wener, November 2015). In 2015, the Deans of the FHS created and recommended a

consultation unit comprised of one member from each of the FHS colleges: Medicine, Nursing, Pharmacy, Rehabilitation Sciences and Dentistry, which is titled the Office of Interprofessional Collaboration (OIPC). The OIPC is tasked with the development of a curriculum, which focuses on elevating collaborative skills through exposure to the six core competency domains of IPC (OIPC, 2016).

Partnership. The University of Manitoba has partnered with the WRHA to provide undergraduate students with IPE placement opportunities. The region has dedicated a half-time position currently held by an occupational therapist, to better facilitate these opportunities. Opportunities for IPE student placements throughout the WRHA are slowly increasing. An IPE event for practicing professionals to raise awareness of interprofessional collaboration has been offered. Participants of this event received information about the importance of IPE and a brief overview of the history of IPE and IPC at the University of Manitoba.

Participants were introduced to the Points for Interprofessional Education System (PIPES) tool, which was adapted with permission from the University of Toronto, Centre for Interprofessional Education (2013). The tool uses a point system and aids IPE session planners to develop sessions that promote IPC. Participants completed a nine question self-evaluation pre and post questionnaire. The University of Manitoba offered this half-day session twice a year as a means to increase IPE awareness among health care professionals and faculty and subsequently increase IPC opportunities for their students. Currently, these types of IPE opportunities for practicing professionals are limited and under review. Formal education involving an interprofessional team creates a familiarity with the role, skills and philosophy of care of each profession, and enhances interprofessional collaboration. A joint effort to better educate practicing professionals about collaborative care and providing them with opportunities to

practice collaborating may increase the prevalence of IPE placements for University of Manitoba pre-licensure health profession students and promote a culture which supports interprofessional collaboration within the WRHA.

IPE Initiatives Involving Both Pre and Post Licensure Healthcare Professionals

IPE initiatives that span both pre and post licensure healthcare professions have been reported. Initiatives conducted in mental health, primary care and inpatient settings are discussed.

Mental health setting. Collaborative practice in mental health can improve access to health services, improve the quality of care provided and contribute to positive client outcomes (Craven & Bland, 2006; WHO, 2010). Memorial University in Newfoundland developed a program that spans pre and post licensure practice in mental health (Curran, Heath, Adey, Callahan, Craig, Hearn, et al., 2012). Collaborative mental health modules were affiliated with existing course curricula at the undergraduate level, followed by an interprofessional workshop for senior trainees and the Rural Mental Health Interprofessional Training Program (RMHITP) for post licensure professionals. The RMHITP used a blended learning approach combining face-to-face learning and videoconferencing sessions. A full day of on-site training was facilitated to foster a trusting environment in which the participants felt comfortable sharing experiences and learning together. This face-to-face learning was followed by the videoconferencing sessions, which included didactic presentations, and skill-building, case-based exercises (Heath, Cornish, Callanan, Flynn, Church, Curran & Bethune, 2008). The workshops were evaluated using a combination of evaluation study designs including: one-shot case study, pretest-posttest control group and one-group pretest-posttest. Key evaluative outcome measures were participant satisfaction, attitudes scale, which was adapted from the Attitudes Toward

Health Care Teams scale (Heinemann et al., 1999), and self-reported teamwork abilities. The findings from the evaluation suggest that learning experiences from pre to post licensure levels are valuable despite a perceived lack of change in self-assessed teamwork abilities at undergraduate level and post licensure (Curran et al., 2012). At both the pre and post licensure level participants reported greatest satisfaction with the use of standardized patients as a learning method and results revealed statistically significant improvement in attitudes toward interprofessional collaboration in mental health care (Curran et al., 2012).

Primary care setting. Education on collaboration is essential to develop collaborative practice competency within health science faculties. Moaveni, Nasmith and Oandasan (2008) selected participants from four primary care sites affiliated with the University of Toronto. Five one-hour focus groups were conducted at the four sites. The researchers used the grounded theory method, data were organized, and field notes were independently analyzed. The analysis focused on key areas that could be used for staff education. A series of trigger tapes were developed based on the study findings to address lack of knowledge of other professional roles, minimal understanding of when and with whom to refer, a desire for best practice models and interventions that would allow for the sharing of role information (Moaveni, Barker, & Oandasan, 2006). The scenarios presented in the trigger tapes were developed to highlight the team practice issues identified by Way and Jones (1996): responsibility and accountability, coordination, communication, cooperation, assertiveness, autonomy, mutual trust, and respect. These DVDs are available for purchase from the University of Toronto, and have played an important role in the advancement of faculty and student IPE across Canadian universities and post licensure professionals.

In-patient setting. A team consisting of a social worker, a physician and a nurse working in a family medicine unit in Quebec in conjunction with Laval University completed a project that involved both pre and post licensure professionals (Pare, Maziade, Pelletier, Houle & Iloko-Fundi, 2012). The project was funded by Health Canada under the IECPCP initiative. The goal of the project was to provide an environment that would support an interprofessional practical training program for students. The recruitment strategies for participants were not provided. Phase one of the study involved post licensure professionals. Four half-day sessions for professionals from each clinical setting provided training to develop or strengthen their collaborative skills and prepare them to be collaborative practice role models for their students.

Phase two was a half-day meeting with the preceptors. The preceptors were presented with educational activities and materials developed for the students. Phase three included four one and a half hour workshops for the students held over a six-week period. A combination of the Donabedian Model and the Logic Model were used to evaluate the program's structural characteristics, implementation process and immediate results. The researchers developed their own questionnaire to evaluate the acquisition of collaborative practice competencies that was administered pre and post intervention. The authors cite the absence of a validated tool published in French as the rationale for developing their own tool. Results show that both professionals and students gained considerable skills and knowledge regarding interprofessional collaboration. Careful consideration was given to preparing the preceptors of students participating in the IPE placement. Further studies might evaluate the impact training of practicing clinical teams has on student experience and learning regarding collaborative practice.

Post Licensure Interprofessional Education Initiatives

Post-graduate or post licensure education characterizes education that occurs once a health professional is practicing independently (Oandasan & Reeves, 2005). The majority of post licensure IPE interventions that have demonstrated positive effects on collaboration prior to 2005 were in inpatient hospital settings (Zwarenstein, Reeves & Perrier, 2005; Barr, Koppel, Reeves, Hammick, & Freeth, 2005). In order to educate students in practice-based settings, effective health care teams that role model best practices in team functioning and collaborative practice need to be in place (Delva, Jamieson & Lemieux, 2008) yet there is a gap in the number of teams who model this type of best practice (Silver & Leslie, 2009). IPE to promote collaborative practice amongst practicing professionals could help to bridge this gap.

Continuing professional development is a form of post licensure education. Curran, Heath, Kearney and Button (2010) developed a workshop in partnership with the Office of Postgraduate Medical Education and the Eastern Regional Integrated Health Authority in Newfoundland and Labrador. The main objective of the workshop was developing interprofessional collaborator skills in practicing professionals. Learning activities were designed to encourage participants to learn with, from and about each other. Small and large group discussion including video, self-reflection and case studies were facilitated to meet the workshop objective. A pretest-posttest evaluation study design was conducted using the Attitudes Toward Interprofessional Health Care Teams Scale (Heinemann, Schmitt, Farrell & Brallier, 1999) and the Perceptions of Effective Teams Scale (Heinemann & Zeiss, 2002). Findings from the study indicate that this model of IPE was effective in enhancing participants' attitudes towards health care teamwork and was a satisfactory learning experience (Curran et al.,

2010). Participant comments highlighted the need for further attention on learning about the roles of different health professionals.

The Building a Better Tomorrow Initiative (BBTI), which was funded through the Primary Health Care Transition Fund of Health Canada, was intended to support collaborative practice in primary care in Atlantic Canada. The main goal of the initiative was to use continuing professional development to foster and support IPC in primary health care. Content experts developed a series of six modules addressing the core competency domains of collaborative practice (Curran, Sargeant & Hollett, 2007). Four modules were one day in length and two were two days in length. Overall, participants reported increased confidence in competencies related to the modules and significant changes in their competencies upon return to their primary health care practices (Curran, Sargeant & Hollett, 2007). Results from this study suggest that interprofessional continuing professional development may enhance role understanding, develop team skills and promote organizational change in primary health care.

Drummond, Abbott, Williamson and Somji (2007) used a mixed methods approach to explore aspects of collaborative practice in primary health care in Canada. Semi-structured focus group interviews with physicians and other primary health care providers were conducted across four sites. Study findings highlight the need to create conditions to foster the development of collaborative practice environments. Drummond et al. (2012) state that the presence of leadership who are focused on collaborative practice is fundamental to the development and sustainment of interprofessional practices in primary care. Drummond et al. (2012) also suggest that the “realignment of physicians within collaborative, team-based clinical organizations” (p.457) is required in order to develop collaborative practice in primary care. Collaborative teams are in place in the departments of general practice and primary care at many universities in

the United Kingdom, Canadian universities could consider adopting a similar model to promote interprofessional collaboration in primary care health care.

Common Themes

Commonalities are noted in type of intervention, sample, and methodology in the literature reviewed on IPE and IPC. The use of experiential learning with a case based or problem based approach using standardized or a real patient was a common teaching method reported across pre and post licensure learning environments. Clinical based learning was deemed valuable by both pre and post licensure participants (Curran et al., 2010; Pare, et al., 2012; Medves, et al., 2008; Kilminster, et al., 2004). Quasi-experimental design was frequently utilized.

Few studies addressed all six core competencies of collaborative practice. The studies examined highlight the need to facilitate IPE in a way that promotes role clarity and interprofessional communication. This is consistent with Barr's (1998) identified IPE competencies: knowledge, skills and attitudes. Continuing professional development IPE sessions can be an effective method to promote competency in collaborative practice for post licensure professionals and will better support student IPE interventions.

The literature reviewed highlights that successful IPE initiatives require a mix of professionals and the groups of participants should be representative of the team in the clinical environment when possible (Oandasan & Reeves, 2005). The participants from all the studies examined were either students or professionals from regulated health professions.

Hypothesis and Research Questions

Based on a review of the literature on interprofessional collaborative practice and the D'Amour and Oandasan's theoretical framework for IECPCP, the following hypothesis was

developed. Following an IPE intervention with practicing healthcare professionals that focuses on interprofessional collaborative practice, participants will report an increase in positive attitude toward interprofessional teams.

Three research questions were also considered in relation to the IPE intervention namely;

1. Does health professional designation affect attitudes toward interprofessional collaboration?
2. Does the length of time since health profession education graduation affect attitudes toward interprofessional collaboration?
3. Does the program of hire affect attitudes toward interprofessional collaboration?

CHAPTER 4 - METHODOLOGY

This chapter includes a description of the study design, setting, sampling procedure, intervention and analysis. Ethical considerations of the study will also be discussed.

Study Design

A pretest-posttest intervention (quasi-experimental) design was used with a convenience sample. Although a randomized control trial (RCT) experimental design is preferable when a cause and effect relationship is desired, as indicated by Zwarenstein, Reeves and Perrier (2005) conducting a RCT to evaluate an IPE intervention is logistically challenging. A RCT trial would require including another acute care hospital, and potentially a longer data collection period and which was not feasible for the purpose of this study. A control group was considered, but the type of professionals and their respective demographics vary greatly from month to month and access to participants was not feasible for the time line and purpose of this project. A quasi-experimental design is a suitable alternative. The purpose of a quasi-experimental design is to examine the effects of an intervention without randomization or a control group (Polit & Beck, 2012). Therefore, the quasi-experimental design is a desirable alternative because it comes as close as possible to the experimental design to measure the impact of a treatment or intervention (Gillis & Jackson, 2002). Polit and Beck (2012) also suggest using a quasi-experimental design for the clinical setting, as it is a practical means to introduce some control.

Meso and micro level factors were considered during the planning, development and evaluation of the intervention. At the micro level the intervention aimed to promote better learner understanding of the core competency domains of IPC through didactic and experiential learning activities. A facilitated discussion to raise awareness and understanding of different healthcare professional roles aimed to support socialization between professions and promote collaborative

practice, and reduce stereotypes amongst and between professions (D'Amour & Oandasan, 2005). Institutional support (meso level) was also considered. The intervention required institutional support as it occurred during new employee orientation, and permission was obtained through consultation with HSC executive and the Health Sciences Research department.

Sampling Method. Potential participants were accessed from the group of health professionals who attended a new employee orientation at HSC. Participants for the intervention were selected using convenience sampling. Convenience sampling is the selection of the most readily available individuals as participants, and is the most commonly used method of sampling (Polit & Beck, 2012). HSC offers new employee orientation sessions once a month, over two days. The first day includes all newly hired employees to HSC. Attendees are welcomed and are presented with a series of didactic sessions regarding parking, security, the Personal Health Information Act (PHIA), benefits, and payroll. The second day is for direct care providers only, the majority of who are regulated healthcare professionals. The number of attendees varies each month with an average of 35 participants per session (S. Hologroski, verbal communication, March 17, 2015).

The types of health care professionals who attend the orientation vary each month. In the past participants have included nurses, physiotherapists, occupational therapists, spiritual health practitioners, unit assistants, unit clerks, nursing assistants, social workers, diagnostic imaging technicians, speech and language pathologists, dietitians, pharmacists and clinical engineers. HSC considers all of these individuals direct care providers which is, defined as any employee who will influence care or have direct contact with patients (D. Erickson, personal communication, April 13, 2015); which is in alignment with the WHO (2010). The WHO (2010) reports the need to create a collaborative practice ready workforce, and therefore IPE should

include all individuals who will influence care. However, based on the literature reviewed, the current study focused only on those professions in healthcare who are regulated and considered to have a specialized body of knowledge. According to the Regulated Health Act (Government of Manitoba, 2014) regulated health professions include the following: midwives, dental hygienists, physiotherapists, optometrists, denturists, occupational therapists, dentists, licensed practical nurses, registered psychiatric nurses, registered respiratory therapists, medical laboratory technologists, registered nurses, audiologists and speech language pathologists, registered dietitians, physicians and surgeons, naturopathic doctors, chiropractors, opticians, pharmacists, psychologists and podiatrists. Physicians are not considered to be employees of the HSC and therefore are not mandated to attend this orientation session. Attempts to include physicians and medicine students were made, but were unsuccessful, thus there were no physicians included in this study. Letters of invitation were distributed to all newly hired regulated healthcare professionals who had registered to attend the second day of orientation at HSC as they signed in. This ensured that participants were indeed practicing at HSC. Respondents were required to complete a basic demographic questionnaire, which helped identify participants who met the inclusion criteria. Questions probed credentials, employment, current degree programs, and exposure to training in teams (Appendix A).

Inclusion criteria. Inclusion criteria for participation in this study were: (a) Must be a direct care provider regulated healthcare professional in attendance at the new employee orientation at HSC; and (b) Must be able to speak and read English.

Exclusion criteria. Direct care providers were not eligible to participate if they had previously attended a new employee orientation at HSC since they would have received the content related to collaborative practice.

Sample size. Statistical power calculations were conducted using the statistical software program G*Power (Faul, Erdfelder, Lang, & Buchner, 2007). With power set at .80 and probability (alpha) set at .05, it was determined that a paired-*t* test statistic would detect a medium effect size between pre-and post-test mean scores for a minimum sample size of 27 participants.

Sample Description

Data were collected from regulated healthcare professionals in attendance at a new employee orientation session at HSC in the fall of 2015. Forty people enrolled in the study and completed the consent form. One person completed and submitted both pretest and posttest questionnaires prior to the intervention; therefore these data were excluded from all data analysis, leaving a total of 39 participants. The demographic data on these subjects are presented in Table 4.1.

Table 4.1

Participant Characteristics (N=39)

Characteristic	n	%
Gender		
Male	4	10.3
Female	35	89.7
Age in years		
21	2	5.1
22	7	17.9
23	3	7.7
24	2	5.1
25	4	10.3
26	4	10.3
27	5	12.8
28	1	2.6
29	2	5.1
30	1	2.6
31	2	5.1
32	1	2.6
36	1	2.6
40	2	5.1
42	1	2.6
53	1	2.6
Professional designation		
Nurse (RN & Grad Nurse)	33	84.6
Respiratory Therapist	1	2.6
Physiotherapist	1	2.6
Other (not identified)	4	10.3
Number of years in practice		
<1	31	79.5
1	1	2.6
5-9	3	7.8
10-20	3	7.8
21+	1	2.6

Program of hire		
Medicine	8	20.5
Surgery	6	15.4
Mental Health	3	7.7
Child Health	13	33.3
Women's Hlth.	5	12.8
Other	3	7.7
No Response	1	2.6

Previous IPE experience		
Yes	30	76.9
No	9	23.1

The majority of participants were female (89.7%) and between 20 and 30 years of age (79.5%). Most were nurses (84.6%), and many of the participants had been in practice for less than a year (79.5%). The distribution of participants across programs of hire was varied; Child Health had the largest percentage with 33%, followed by the Medicine program with 20.05%, Surgery (15.4%), Women's Health (12.8%), Mental Health (7.7%) and Other (7.7%). The 'Other' category included any participant that was not hired into one of the programs listed. Most participants (76.9%) had participated in a previous IPE activity during their pre-licensure education programs.

Data Collection Tools

Participants were asked to complete the demographic questionnaire (Appendix A) before the intervention began. Data from the demographic questionnaire were used to describe the sample, examine the research questions related to professional designation and years of experience, and assess the generalizability of the findings. Previous experience with IPC was not considered, because the literature suggests that there is a lack of understanding regarding the definition of IPC (Rice et al., 2010).

The Attitudes Toward Health Care Teams (ATHCT) scale (Heinemann et al., 1999) (Appendix B) was utilized in this study to test the hypothesis and will be discussed in detail.

ATHCT scale

There are a limited number of instruments available to assess IPE and IPC (Thannhauser, Russell-Mayhew & Scott, 2010). The ATHCT scale (Heinemann et al., 1999) was used with regulated healthcare professionals and student participants in several of the studies. In a literature review conducted by Gillan, Lovrics, Halpern, Wiljer and Harnett (2011) the ATHCT scale was identified as the most widely used scale to evaluate attitudinal change post IPE intervention. The ATHCT scale is cited in the literature 130 times according to Google Scholar (2014). The ATHCT scale is a self-administered scale and was developed to evaluate clinically based education in collaboration with geriatric healthcare teams. However, it is recognized and supported by the CIHC (2012) as a suitable instrument to assess learner outcomes following IPE initiatives, and therefore was used for this study to evaluate the intervention. Heinemann et al. (1999) grant permission to use the instrument with referencing in the original publication of the instrument.

Heinemann et al. (1999) identified the need to develop such a scale to compare the attitudes between healthcare team members from diverse health professions and to test hypotheses about the interrelationships between such variables as attitudes and participation of team members, team functioning, and outcomes of IPE activities designed to improve attitudes and improve team performance. Attitudes are often determinants of behaviours that can be considered to influence professionals' participation in teams, level of team functioning and the quality of care provided to the patient (Heinemann et al., 1999).

The ATHCT scale was initially a 21-item scale composed of three sub-scales: Attitudes Toward Team Value (11 items), Attitudes Toward Team Efficiency (five items), and Attitudes About the Physician's Shared Role on the Team (five items). It was developed over ten years and resulted in a 20-item scale with two sub-scales. In the initial version the Attitudes Toward Team Value sub-scale measured attitudes about whether team care improves patient outcomes through consensus on the needs and priorities of the patient. The Attitudes Toward Team Efficiency sub-scale measured attitudes about whether teams waste time through inefficiencies. The third sub-scale, Attitudes About the Physician's Shared Role on the Team, measured values of shared leadership and equality among team members and has a Cronbach's α of 0.75 (Hyer, 2000). In the final work of Heinemann, Schmitt, Farrel and Brallier (1999) the first two sub-scales were combined into one 14-item scale, The Quality of Care/Process with a Cronbach's α of 0.83. The overall Cronbach alpha coefficient for the entire ATHCT scale is 0.87, which is considered to be acceptable (Hyer et al., 2000). The final version of the ATHCT scale is a 20-item scale (Appendix B). A Likert-type scale is used, and responses for the items range from 0 (strongly disagree), to 5 (strongly agree). Questions 1, 4, 6, 11 and 17 are reverse coded so that higher scores reflect more positive attitudes (Hyer et al., 2000). The higher the score of each sub-scale, the higher the respondent's perception of that sub-scale's construct. The Quality of Care/Processes subscale scores can range from 0-70. Scores for the Physician Centrality subscale can range from 0-30. A higher score for this subscale indicates a more positive view of physician authority and an early stage of team development (Heinemann & Zeiss, 2002). This instrument has been used successfully as a pretest and posttest measure for evaluating educational interventions with teams, and has been used to test hypotheses about

interrelationships between attitudes and such variables as education, participation of team members and team functioning (Heinemann & Zeiss, 2002).

Validity and reliability. The ATHCT scale has undergone extensive psychometric testing for internal consistency reliability, test-retest reliability, content validity, construct and concurrent validity. The psychometric data indicate that the instrument is a robust measure. For concurrent validity, two of the sub-scales were correlated with a semantic differential scale that also measures attitudes toward health care teams (Hyer, 2000). For the sub-scale Quality of Care the correlation was reported at $r = 0.60$ ($p < .001$), which is considered a moderate correlation. This suggests that high values in this sub-scale are associated with high values on the semantic differential scale (Polit & Beck, 2012). For the sub-scale Costs of Team Care, the correlation was reported at $r = -.57$ ($p < .001$), also a moderate, yet negative, correlation. This indicates that a high score in this sub-scale is associated with a low score on the semantic differential scale (Polit & Beck, 2012). Concurrent validity was not reported for the physician centrality sub-scale (Heinemann & Zeiss, 2002). Regarding content validity, four experts rated items on appropriateness and assignment to sub-scale domains. The level of agreement for the entire scale resulted in a content validity index of 0.95 for appropriateness of items and 0.91 for assignment of items to domains (Hyer, 2000). Both of these values are high and indicate that the scale adequately measures the construct and variables of interest regarding attitudes and participation of team members, team functioning, and outcomes of IPE activities.

To examine test-retest reliability, a subset of nurses completed the original version of the scale on two separate occasions, six weeks apart. Test-retest reliability is used to assess the consistency of a test across time (Polit & Beck, 2012). The test-retest correlation for the Quality of Care sub-scale was 0.71 ($p < .001$), for Cost of Team Care, 0.42 ($p < .05$), and for Physician

Centrality, 0.36 ($p < .05$) (Heinemann & Zeiss, 2002). The Quality of Case Sub-scale was been found to be the most stable measure.

Intervention

The intervention consisted of an IPE session that was embedded into a mandatory orientation session for healthcare professionals at a tertiary care facility. According to Oandasan and Reeves (2005), incorporating IPE in this manner conveys the message that the material covered is essential for health professionals to learn, is endorsed by the organization, and is imperative for practice. IPE is defined as “learning with, from, and about” two or more health professionals (CAIPE, 2002). The education intervention outlined in Appendix C was designed to address the various aspects of this definition. In consultation with Lynne Sinclair (Educational Consultant and Innovative Program and External Development Lead at the Centre for Interprofessional Education, University of Toronto), the education session was adapted from the University of Toronto’s certificate course for health professionals, leaders and educators: Educating Health Professionals in Interprofessional Care (ehpic®), and focused on role clarity and interprofessional communication. These two competency domains were chosen because the studies examined in the literature review highlight the need to facilitate IPE in a way that promotes role clarity and interprofessional communication. The education session was facilitated by an experienced educator who has ehpic® certification. Learning *with* each other involved the delivery of a didactic education session with different health professionals, which outlined the six core competency domains of collaborative practice: person-centred care, role clarity, collaborative leadership, interprofessional conflict resolution, team functioning and interprofessional communication. The competency domains were defined, along with descriptions of how to implement the competencies in practice, and clinical examples that

exemplify the core competency domains were shared. The didactic component took approximately one hour. Participants learned *about* one another through a facilitated discussion addressing professional roles and responsibilities (Appendix D). Participants had the opportunity to learn *from* one another through participation in an experiential learning activity related to interprofessional communication and teamwork activities. During the experiential learning activity, participants had the opportunity to communicate clearly and seek understanding. Study participants completed the ATHCT (Appendix B) immediately pre- and post-intervention. The intervention took place at new employee orientation at Health Sciences Centre (HSC), Winnipeg, Manitoba and lasted approximately 3.5 hours. See Appendix E for the PowerPoint presentation of the content that was presented as part of the intervention.

Data Analysis

Data analysis was completed using the SPSS Statistics Standard V23 Student Grad Pack for Students statistical software program. The paired *t*-test was used to determine if there were group mean differences as predicted in the hypothesis. The paired *t*-test is useful in quasi-experimental designs to test differences in group means between pretest and posttest scores (Munro, 2005). In this study self-reports of attitudes towards interprofessional teams were measured using the ATHCT scale before and after the IPE intervention. Descriptive techniques, including frequencies and measures of central tendency were used to analyze and describe the demographic data.

Ethical Considerations

Ethical approval for the study was obtained through the Education and Nursing Research Ethics Board (ENREB) at the University of Manitoba and the Health Sciences Centre Research Department. Informed consent was obtained from all participants. The consent form was given

to participants and gave them a basic idea of what the research was about and what their participation involved. Time was taken prior to the start of the study to answer any questions the participants had. According to standard informed consent, participants also received a description of how to withdraw from the study if desired and to ensure their right to self-determination was upheld (Polit & Beck, 2012). None of the participants chose to withdraw from the study. Participants were offered an opportunity to have the study findings shared with them once the data were analyzed by contacting the investigator via email as outlined in the Consent Form (Appendix F). Attention to potential coercion was considered; facilitators were not in a position of power with the participants so coercion was not an issue. A gift card to a coffee shop as a form of appreciation for participants' time was given to each participant upon completion, but as this was nominal it should not be considered as coercive (Wood & Ross-Kerr, 2006). Additionally, the researcher was committed to, and practices in accordance with, the Personal Health Information Act (PHIA) regarding privacy of personal information and the Canadian Nurses Association Code of Ethics which focuses on five key ethical principles namely: autonomy, non-maleficence, beneficence, justice and confidentiality.

Care was taken to ensure that all data obtained were/are kept confidential. To maintain confidentiality no names were attached to any of the methods of data collection, rather code numbers were used on the demographic forms and surveys. In order to link pre and post data in a manner that preserves anonymity and confidentiality, participants were asked to create a seven character unique participant identification code (UPIC) by following these steps: birth day (2 digits), birth month (2 digits), and first three letters of mother's maiden name (3 letters). For example, if the participant was born January 15 and the mother's maiden name is Smith the UPIC is 1501SMI. Only the student and the student's advisor have access to both the electronic

and raw data. All hard copy data are kept in a locked filing cabinet in the researcher's home and only the researcher and thesis advisor have access to it. Electronic data are stored in a password-protected file on the researcher's personal password protected computer. All data will be destroyed five years after data collection.

Risks and Benefits

It is essential that the risks of a study not outweigh the benefits and that both are explained to potential and actual participants. The risk of participating in the intervention was no greater than what participants would normally encounter in daily life thus, the risk to them was minimal (Polit & Beck, 2012) and was explained as such in the consent form (Appendix F). The researcher was aware that discussion surrounding professional roles may create conflict between participants and this potential risk was explained to participants. Potential benefits of the study included enhanced working relationships amongst study participants, and use of the findings toward improved team functioning and quality of patient care.

CHAPTER 5- RESULTS

This chapter provides the results of this study, which examined the effects of an IPE intervention with practicing regulated healthcare professionals on attitudes toward IPC. First the hypothesis findings will be reported; differences in group mean scores were tested using a paired *t*-test. Next the results of the analyses of each of the three research questions that have been posed will be provided.

Hypothesis Testing

The hypothesis examined in this study was: Following an IPE intervention with practicing healthcare professionals that focuses on interprofessional collaborative practice, participants will report an increase in positive attitude toward interprofessional teams.

The hypothesis and overall attitudes amongst study participants’ pre- and post-intervention were analyzed using a paired *t*-test. Table 5.1 provides a comparison of pre- and post-intervention ATHCT scale scores. As previously noted, higher scores indicate a more positive attitude toward healthcare teams (Heinemann et al., 1999), and the total score can range from 0 to 100. One participant did not provide a response for all of the questions on the ATHCT scale; the data from this participant was excluded from this data analysis.

Table 5.1

Comparison of Pre and Post Intervention ATHCTS scale Scores (N=38)

	Total Pre Test Mean Score ±SD	Total Post Test Mean Score ±SD	<i>T</i>	p-value
ATHCT Score	69.4 (6.2)	73.3 (6.8)	4.4	<0.0001*

Note. *Difference is significant at the 0.0001 level

Following the IPE intervention there was a significant increase in the group mean score from pretest to posttest.

Research Question One

The first research question was posed to determine whether professional designation affected attitudes toward interprofessional collaboration following an interprofessional education intervention. The intention was this question would be answered through an analysis of the ATHCT scale scores and the demographic data gathered. However, since the non-nurse groups each had 2 or fewer participants, and nurses comprised 84.6% of the total sample it was not possible to answer this question because there was insufficient power for comparison of individual professions.

Table 5.2

Comparison of pretest and posttest total score means between nurses and non-nursing professionals (N=38).

Test	Mean
Pretest total score	
Nurses (n=32)	68.3 (SD ± 6.0)
Non-nurse (n=6)	71.0 (SD ± 8.6)
Posttest total score	
Nurses (n=32)	73.2 (SD ± 6.9)
Non-nurse (n=5*)	75.6 (SD ± 4.5)

Note. *Posttest had missing data and was not included.

Research Question Two

The second research question was whether the length of time since graduation would affect attitude toward interprofessional collaboration following an IPE intervention. The intention was this question would be analyzed using Chi-Square or Pearson Correlation tests

However, it was not possible to analyze this question because there was not sufficient variability in the data since the majority of the study participants (82.1%) had graduated within the previous year. See table 5.3.

Table 5.3

Years since graduation

Years Since Graduation	Frequency	Percent
0	31	79.5
1	1	2.6
5	1	2.6
7	1	2.6
8	1	2.6
10	1	2.6
15	1	2.6
20	1	2.6
29	1	2.6

Research Question Three

The third research question was whether the program to which the healthcare professionals were being hired would affect attitude toward interprofessional collaboration. The difference in pretest and posttest total mean scores between programs of hire was considered. Preliminary evaluation of the pretest and posttest total mean scores suggests that there are differences between programs of hire (see Table 5.4). However, it was not possible to determine

if there was a significant difference between the different groups because the subgroup sample sizes were too small.

Table 5.4

Pretest and posttest mean scores by programs of hire (N=38).

Program of Hire	Pretest Score Mean (SD)	Posttest Score Mean (SD)
Medicine (n=8)	72 (\pm 4.8)	73.4 (\pm 5.3)
Surgery (n=6)	62.8 (\pm 4.4)	69.7 (\pm 4.5)
Mental Health (n=3 pretest, n=2 posttest*)	66.3 (\pm 7.2)	73.5 (\pm 4.9)
Child Health (n=12)	71.4 (\pm 4.0)	75.5 (\pm 6.3)
Women's Health (n=5 pretest, n=4 posttest*)	63.8 (\pm 3.3)	67.5 (\pm 9.6)
Other (n=3)	75.0 (\pm 10.4)	81.3 (\pm 6.4)

Note. * posttest had missing response(s) and were not included.

The results of this quasi-experimental study are reported within this chapter. Each of the three research questions was addressed and the results of this analysis were provided.

Discussion of these findings will be presented in the following chapter.

CHAPTER 6 – DISCUSSION

A quasi-experimental pretest posttest study was conducted to examine the effect of an IPE session on attitudes toward interprofessional teams of regulated healthcare providers in attendance at a new employee orientation session. The primary outcome variable examined was measured using the ATHCT Scale (Heinemann et al., 1999). The utility of the IECF framework to guide this study will be briefly discussed. Demographic data of the participants will be addressed in relation to national statistics, followed by a discussion of each research question. This chapter will also include discussion of the relationship of the findings to demographic variables of interest and in relation to the literature reviewed. Implications for practice, future research will be identified. Strengths and limitations of this study and the plan for dissemination of findings will be discussed.

Demographic Data

According to the Canadian Institute of Health Information (CIHI, 2012) and the Canadian Nurses Association (CNA, 2014), nurses comprise the majority of healthcare professionals in Canada. The majority of nurses in Canada (56.2%) and Manitoba (55.3%) work in a hospital setting. The average age of nurses in Canada is 44.6 years, with 13.8% under the age of thirty years. The average age of a nurse in Manitoba is 46.9, with 10.7% under the age of thirty years. The age of the nurses in the current study do not correspond to the national average as 76.9% of the participants were under the age of thirty years. Data for recently graduated nurses were not available for comparison. Similar to CIHI (2012) data, more participants in this study were female than male and a comparable percentage of participants were male (10.3%) compared with the provincial average (8.1%). The relatively small number of participants and the timing of the

intervention may account for the discrepancies between study sample statistics and national/provincial statistics.

Hypothesis Testing

It had been hypothesized that following an IPE intervention with practicing healthcare professionals that focuses on interprofessional collaborative practice, participants would report an increase in positive attitudes toward interprofessional teams compared to pre IPE intervention as measured by the ATHCT scale (Heinemann et al., 1999).

Following the intervention, study participants' overall attitude toward interprofessional teams, measured using the ATHCT scale (Heinemann et al., 1999) increased. A significant change in the attitudes towards health care teams scale scores supports the hypothesis that an IPE intervention can increase positive attitudes toward interprofessional teams. Curran et al. (2010) reported similar findings among one hundred thirty-seven post-licensure health care professionals in their study following an IPE intervention. These authors reported a significant pre- to post-attitudinal score change $t(20) = -2.08, p = 0.05$. Participants were identified as nursing staff, allied health, 'other' and medical residents. Medical residents did not participate in the current study, which limits further comparison of findings.

Anderson et al. (2011) measured attitudinal change among pre-licensure healthcare profession students' pre- and post-IPE intervention and also reported a significant pre- to post-attitudinal score change. The level of clinical experience among this study's participants can be considered similar to those in Anderson et al.'s study (2011) because 79.5% in the current study had less than one year of experience and the nursing students participating Anderson et al.'s study were senior students. Anderson et al. (2011) reported higher pre-IPE intervention mean scores on the ATCHT Scale (80 ± 1.2) than the pre-intervention mean scores on the ATHCT

Scale (69.4 ± 6.2) for the current study. The ATHCT Scale mean scores for both Anderson et al.'s study (2011) and the current study increased significantly post-intervention, 85 ($SD \pm 1.2$) and 73.3 ($SD \pm 6.8$) respectively.

Wamsley et al. (2012) also examined attitudinal change among healthcare profession students from five professions pre- and post-IPE. The majority of the participants were near graduation, having similar practice experience to the participants in the current study. Unlike the current study, Wamsley et al. (2012) utilized a control group to further evaluate the impact of the IPE session. There was no significant difference between the control and participant group pre-intervention. The participants demonstrated a statistically significant increase in post-intervention mean score on the ATHCT Scale. The findings of these studies support the current study's findings and support the use of an IPE intervention with practicing healthcare professionals to improve attitudes toward interprofessional collaboration.

Research Question One

Does health professional designation affect attitudes toward interprofessional collaboration?

Healthcare professionals develop strong theoretical and profession based frameworks during their education and training and IPC requires making changes to these paradigms and implementing a culture of collaboration rather than competition (D'Amour, Ferrada-Videla, San Martin Rodriguez & Beaulieu, 2005). It was not clear after a review of the literature if this might contribute to differences in attitudes towards IPC across professions, thus research question one was posed. Unfortunately, it was not possible to answer this question because the non-nurse groups each had two or less, and nurses comprised 84.6% of the total sample. The pretest total ATCHT mean scores were 68.3 ($SD \pm 6.0$) for nurses and 71.0 ($SD \pm 8.6$) for the non-nurse

group. Comparative samples with the exact same professional demographics are not available in the literature. Curran, Heath, Kearney and Button (2010) evaluated an IPE workshop for post-graduate residents, nursing and non-nurse health professionals using the ATCHT scale. Curran et al. (2010) found in their study that nursing and non-nurse attitude scores were not significantly different.

Wamsley et al. (2012) evaluated the impact of an interprofessional standardized patient exercise on attitudes toward working in interprofessional teams and compared results of the different professions. Study participants consisted of students in the following health professions: medicine, dentistry, pharmacy, physiotherapy, and nurse practitioner. Similar to the sample in the current study, the majority of the participants were female (73%). The difference between nurses and the non-nurse group was not reported. There was a significant difference among professions; medicine and dentistry students had significantly lower scores than other professions (Wamsley et al., 2012). However, the low numbers of participants in the represented health professions in the current study did not allow for a comparison between professions.

Kenaszchuk (2011) conducted a study to examine the effect of an IPE intervention for regulated healthcare professionals on attitudes towards interprofessional learning and interprofessional teams. Professions represented were physicians, nurses, and other regulated health professionals including dietitians, occupational and physical therapists, pharmacists, social workers, speech-language pathologists, and others. One hundred fifty four professionals participated in the study. The majority of the participants were female, which is similar to the sample in the current study. The ATHCT scale was used to measure attitudinal change pre- and post-intervention and comparisons were made between different professional groups. Kenaszchuk (2011) reported a difference between the professional groups pre-intervention, and

stated that the allied group had the greatest total mean score. However, post-intervention, there was no statistical difference in mean total scores between nursing and allied health groups, and the physician group had a lower mean total score. This is similar to the findings reported by Curran et al. (2010). Neither Curran et al. (2010) or Kenazchuk (2011) found a significant difference in attitudes towards IPC between professions.

Research Question Two

Does the length of time since health profession education graduation affect attitudes toward interprofessional collaboration?

In 2010 the World Health Organization (WHO) identified collaborative practice as a priority for healthcare organizations. Interest in IPC and IPE to prepare providers has increased in the past ten years. But only recently have students and practicing professionals gained opportunities to learn about the roles of other health care professions and how those roles interface with their own. The University of Manitoba started providing IPE opportunities to students in 2008, and the WRHA started offering IPE sessions in 2012. Prior to this students and practicing professionals in Manitoba had limited formal exposure to IPE. It has been proposed that IPE for professionals that are expected to work together and share expertise in a team environment is imperative (Romanow, 2002) and that successful collaborative practice requires preparation, time and supportive structures (Craven & Bland, 2006). Therefore it was surmised that healthcare practitioners who graduated before IPE opportunities were available in Winnipeg and at the University of Manitoba might have lower pre-test scores than professionals who had been in practice for less time. However, it was not possible to analyze this question because there was not sufficient variability in the data; the majority of the study participants (82.1%) had graduated within the previous year. Demographic data from previous sessions regarding years

since graduation or number of years in practice was not available, and it was not anticipated that such a large proportion would have graduated within the last year.

Research Question Three

Does the program of hire affect attitudes toward interprofessional collaboration?

The impact of IPE sessions has been evaluated extensively in primary care (Akeroyd et al., 2009; Curran, Sargeant, & Holgflet, 2007; D'Amour, 1997; Drummond et al., 2012; Gaboury et al., 2009; Gillis & Jackson, 2002), mental health (Broyles et al., 2013; Craven & Bland, 2006; Curran et al., 2012; Lee et al., 2012; van Steenberg-Weijnenburg, 2010), geriatrics (Grymonpre, van Ineveld, & Boustcha, 2008;), ICU (Baggs et al., 2004; Northway & Mawdsley, 2008; Rose, 2011; Wheelan, Burchill & Tilin, 2003) and palliative care (Blacker & Deveau, 2010; Burnham, Day & Dudley, 2010; Irajpour, Norman & Griffiths, 2006). There is limited literature exploring the impact of IPE interventions in a hospital setting, surgery programs in particular. This suggests that professionals working within a surgery program have limited exposure to IPE activities, and thus may have less positive attitudes toward IPC (Thannhauser, Russell-Mayhew & Scott, 2010).

Preliminary evaluation of the pretest and posttest mean scores of the program of hire subgroups suggests that there is a difference between programs of hire (see Table 5.7).

Participants who were hired into the surgery program had the lowest pre-test mean score (62.8, $SD \pm 4.4$). It would have been interesting to be able to evaluate if the apparent lack of exposure to IPE sessions in certain practice areas impacted pre-test scores because previous exposure to IPE impacts attitudes towards interprofessional care (Casimiro et al., 2011), but the sub-group sample sizes were too small to assess for a difference. The years since graduation may have also impacted the results with regards to program of hire. The participants had limited practice

experience and may not have been exposed to the practice environment to which they had been hired, limiting the generalizability of the findings to programs of hire.

The Interprofessional Education and Collaborative Patient-Centred Practice (IECPCP) Framework

The theoretical framework for this study was the IECPCP Framework (D'Amour & Oandasan, 2005). D'Amour and Oandasan (2005) outline the causal relationships between micro, meso and macro levels and contend that IPE will improve attitudes toward IPC and enhance patient centered care. Heinemann et al. (1999) state that attitudes predict collaborative care behaviours. D'Amour and Oandasan (2005) also indicate that positive attitudes toward IPC will increase a professional's ability to become a competent collaborator. Therefore, a tool that measured attitudes, the ATHCT Scale was chosen to evaluate the IPE session. According to the IECPCP theory, the timing of education and exposure to the core concepts of collaborative practice impacts the prevalence of positive attitudes towards collaborative practice (D'Amour & Oandasan, 2005). Additional research is needed to examine the long-term effects that an IPE session during orientation has on attitudes towards interprofessional teams. D'amour and Oandasan (2005) also state that more research is needed to further understand the explicit relationship between IPE and IPC.

This model was used to guide the planning, development, implementation and dissemination of the current study and its findings. The IECPCP framework proved to be a useful guide. Findings from this study suggest that the IPE session designed to provide regulated healthcare professionals with the opportunity to learn *with, from* and *about* each other during new employee orientation is an appropriate activity to increase attitudes toward interprofessional teams. This increase in attitudes may increase IPC among healthcare professionals and further

supports the link between IPE and IPC (D'Amour & Oandasan, 2005). Curran, Sharpe, Flynn, and Button (2010) examined the effects of an IPE intervention on attitudes towards IPC used the IECPCP framework to guide the study and reported findings similar to the current study post-IPE intervention.

The IECPCP framework identifies a relationship between research findings and organizational change. Leaders who develop policies that will impact the micro, meso and macro levels identified in the framework can use these research findings to inform their decision-making (D'Amour & Oandasan, 2005).

Recommendations for Practice

The WRHA is exploring ways to promote IPC amongst practicing healthcare professionals in order to improve patient care. Attitudes are often determining behaviours, which influence professionals' participation in teams, level of team functioning, and the quality of care provided to the patient (Heinemann et al., 1999). The findings from this study suggest that an IPE session addressing the core competency domains of IPC can increase attitudes toward interprofessional teams. Therefore, it is recommended that the WRHA consider implementing a similar IPE session for all new employees, not just those hired at HSC. IPE during new employee orientation appears to be a novel concept. PubMed, EMBASE and CINAHL were all searched for studies examining IPE interventions during new employee orientation, and none were found. Opportunities to incorporate IPE into new employee orientation sessions should be explored and implemented in other healthcare facilities beyond the WRHA. It is also suggested that IPE sessions for practicing health professionals in established teams be delivered and evaluated to determine the impact on attitudes toward interprofessional teams and subsequently

the quality of care provided to patients. Opportunities to engage physicians in these activities also need to be explored.

Limitations

It is important to consider the limitations of this study. In addition, consideration of the limitations may help to strengthen and guide future research in this area. Limitations that have been identified are related to the sample demographics, method of recruitment and study design.

Sampling. A non-probability convenience sample was utilized for this study. According to Polit and Beck (2012), this form of sampling is less likely to produce accurate and representative samples when compared to probability sampling. The risk, inherent in this form of sampling is that available subjects might not be typical of the population of interest. In an attempt to counter this, inclusion and exclusion criteria were clearly identified. Self-selection could have been a potential limitation but none of the attendees asked, refused to participate. The data collection was only taken from one hospital. A multi-site study would be helpful in increasing the generalizability of the study findings.

Sample. It was expected that many of the new employees would want to participate in the study because it took place during a mandatory orientation session. Many of these participants had limited practice experience and the majority of the study participants were recently graduated nurses. This limits the generalizability of the findings beyond recently graduated nurses. The lack of variability between participants also limited the opportunity for participants to learn with, from, and about each other, which may have impacted post-test scores. The lack of variability also prevented comparison between professional groups and the impact time since graduation had on attitudes toward interprofessional teams. Also, since physicians are not required to attend new employee orientation, the impact of the intervention was not

examined with members of the medical profession. Attempts to include family medicine residents, who do not normally attend orientation, were made. However, it was not possible to organize for this study.

Study design. There are limitations with the design of this study. An inherent limitation of quasi-experimental design is limited control over the context in which the study is conducted (Gillis & Jackson, 2002). In addition to this, quasi-experimental designs lack the causal inference power of the classic experimental design (Polit & Beck, 2012). The absence of a control group limits the ability to make causal inferences between pretest and posttest because the researcher cannot be certain that the differences between the pre and posttest is due to the intervention.

Recommendations for future research

There are many directions that future research can take as a result of this study. A larger, more diverse sample with a control group is recommended to support the results of the present study. This would require a longer data collection period and include multiple study sites. The sample should include participants that are representative of the current workforce. Purposive sampling would accomplish this. Including a qualitative component to better understand the impact of any previous experience with IPE and IPC on attitudes or other variable of interest could be considered. It would also be useful to examine the long-term impacts of this type of IPE intervention through a time series study.

Research to determine an effective strategy to recruit physicians for IPE research is imperative. This is consistent with Whitehead's (2007) recommendations that it is crucial to address the political, social and economic factors that impede physician participation in IPE activities. Physicians are an important part of the healthcare team; they have greater political

leverage than other health care professionals, and a privileged place within health care institutions, in terms of relationships with hospitals and hospital boards (Conference Board of Canada, 2012). These political, social and economic factors need to be taken into account in each health care system and IPE setting to permit effective interactions between professions, and additional research is required to better understand how interprofessional collaboration can be improved and addressed.

Whitehead (2007) also indicates that the use of the ATCHT Scale may not be a suitable data collection tool to use with physicians because the measure of physician centrality may be intrinsically threatening to a physician. Additional research is needed to validate this claim and determine the impact it has on recruitment and participation of physicians in IPE activities that employ the ATHCT Scale for data collection.

Dissemination of Results

Results of this study will be shared with the HSC executive group, the HSC clinical education department, and through a mailed summary to interested participants who request a summary as outlined in the letter of invitation. Abstracts will be submitted for presentation at local and national nursing conferences and other conferences that focus on interprofessional collaborative practice. Dissemination is also planned in a peer-reviewed publication.

Conclusion

Through an in depth review and a subsequent critical appraisal of the literature on IPC and IPE, common themes and gaps were identified. These common themes and gaps were used to determine the hypothesis, research questions, target population, study design, and measurement tool. The findings suggest that an IPE intervention may be an effective means to increase attitudes toward interprofessional teams amongst new employees as evidenced in this

study with (primarily) recently graduated nurses. Positive attitudes toward interdisciplinary teams may also enhance IPC amongst practicing healthcare professionals. This study can be described as an opportunity to better understand the effectiveness of a combined intervention: didactic and experiential learning, to enhance attitudes toward interprofessional collaboration.

Appendix A

Unique Participant Identification Code _____

Demographics Questionnaire

Please answer each of the following questions.

1. Sex: Male___ Female ___

2. Age in years: ___

3. You are employed at HSC as a:

Registered Nurse___ Social Work___ Licensed Practical Nurse___ Respiratory Therapist___

Medical Laboratory Technologist___ Physiotherapist___ Occupational Therapist___

Pharmacist___ Registered Psychiatric Nurse _____ Other (Please specify)_____

4. What year did you graduate from your academic program? _____

5. How many years have you been in practice? _____

6. Which program have you been hired into? Medicine ___ Surgery___ Mental Health___

Child Health___ Women’s ___ Other_____

7. Have you ever participated in an interprofessional education session? Yes___ No___

If you answered yes, please explain: _____

Appendix B

Unique Participant Identification Code: _____

Attitudes Toward Health Care Teams Scale

Directions: Please answer the following questions by circling the number from 1 to 6 that most accurately reflects your opinion, with 1 meaning *Strongly Disagree* and 6 meaning *Strongly Agree*.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. Working in teams unnecessarily complicates things most of the time. *	0	1	2	3	4	5
2. The team approach improves the quality of care to the patients.	0	1	2	3	4	5
3. Team meetings foster communication among team members from different disciplines.	0	1	2	3	4	5
4. Physicians have the right to alter patient care plans developed by the team. *	0	1	2	3	4	5
5. Patients receiving team care are more likely than other patients to be treated as whole persons.	0	1	2	3	4	5
6. A team's primary purpose is to assist physicians in achieving treatment goals for patients. *	0	1	2	3	4	5
7. Working on a team keeps most health professionals enthusiastic and interested in their jobs.	0	1	2	3	4	5
8. Developing a patient care plan with other team members avoids errors in delivering care.	0	1	2	3	4	5
9. When developing interdisciplinary patient care plans, much time is wasted translating jargon from other disciplines.	0	1	2	3	4	5
10. Health professionals working on teams are more responsive than others to the emotional and financial needs of the patient.	0	1	2	3	4	5
11. Developing an interdisciplinary patient care plan is excessively time consuming. *	0	1	2	3	4	5

	Strongly Agree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
12. The physician should not always have the final word in decisions made by the health care teams.	0	1	2	3	4	5
13. The give and take among team members helps them make better patient care decisions.	0	1	2	3	4	5
14. In most instances, the time required for team meetings could be better spent in other ways.	0	1	2	3	4	5
15. The physician has the ultimate legal responsibility for decisions made by the team.	0	1	2	3	4	5
16. Hospital patients who receive team care are better prepared for discharge than other patients.	0	1	2	3	4	5
17. Physicians are natural team leaders. *	0	1	2	3	4	5
18. The team approach makes the delivery of care more efficient.	0	1	2	3	4	5
19. The team approach permits health care professionals to meet the needs of the family caregivers as well as the patients.	0	1	2	3	4	5
20. Having to report observations to the team helps the team members better understand the work of other professionals.	0	1	2	3	4	5

* reverse coded

APPENDIX C

Intervention Outline

1. Introduction and Welcome – Participants complete pre survey, presenter introduced, objectives of educational session reviewed. (10 minutes)
2. Review key definitions, high-level overview of global, national and local context and framework. (10 minutes)
3. Person-Centred Care- define competency as outlined by WHO, discuss linkage to practice. Play U of T video to highlight patient perceptive and importance of Person-Centred Care. (15 minutes)
4. Role Clarification – Define competency, discuss importance of role understanding, impact of stereotypes, ‘Here’s My Card’ activity with facilitated discussion (Appendix D). (45-60 minutes)
5. Nutrition Break (15 minutes)
6. Team Function- Define competency, review how it works and linkage to decision making. Team building activity. (25 minutes)
7. Collaborative Leadership- Define competency, review types of decision-making, Case Study (one, completed as a group). (10 minutes)
8. Interprofessional Conflict Resolution- Define competency, review benefits and contributing factors. (10 minutes)
9. Interprofessional Communication - Define competency, experiential learning activity. (30 minutes)
10. Wrap-up, post survey (10 minutes)

Appendix D

Participant Instructions – Here’s My Card

(Sinclair, Lowe, Paulenko, & Walczak, 2007)

(Hand out cue cards) Think of 3 or 4 qualities of your discipline or activities of your profession. Write the 3 or 4 qualities, plus a catchy advertising phrase on the cue cards, but don’t write the name of the discipline on the card. Exchange cards with participants at a neighbouring table, and then share what’s written on the card one at a time in the large group. Large group guesses which profession it is.

Roles and Responsibilities Facilitator Notes

1. What do you do? (Main purpose of the profession, scope of practice)
2. Please give an overview of your current role/tasks on your team.
3. Unique features of your profession.
4. Your professional training and education prepared you well for...
5. The strengths of your profession are...
6. Your profession encourages you to...
7. What else is helpful to know? (Special insights that will help others understand more about your profession and role). Is your team taking full advantage of your professional skills and experiences?

Appendix E

15/06/2015

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Winnipeg

Interprofessional Collaboration at Health Sciences Centre

Kari Mann RN, BN, BSc

1 | Presentation Title | Client Name | XX Month Year | nursing

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Objectives

- Recognize the importance of professional role understanding as an essential component for collaborative practice
- Acknowledge professional attitudes and cultural values and recognize their impact on interprofessional care
- Aware of the importance of effective communication; We need to Communicate to be understood, seek input & listen respectfully
- Understand why collaborative practice should be used to enhance patient-centred care
- Recognize that there are limits to what I know and will continue to learn from others so that care can be better integrated and led by the best possible care provider.

2 | Presentation Title | Client Name | XX Month Year | nursing

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Health Care Deja vu

3 | Presentation Title | Client Name | XX Month Year | nursing

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KEY TERMS

4 | Presentation Title | Client Name | XX Month Year | nursing

15/06/2015

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Collaborative Practice

•An interprofessional process for communication and decision making that allows the knowledge and skills of care providers to synergistically effect the client/patient care provided (Way, Jones, & Busing 2000). Collaborative practice is interlinked to the concept of teamwork.

5 | Presentation Title | Client Name | 00 Month Year | nursing

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Interprofessional Education

Occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care (CAIPE 2002).

6 | Presentation Title | Client Name | 00 Month Year | nursing

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BACKGROUND

7 | Presentation Title | Client Name | 00 Month Year | nursing

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Canadian Context

Expanding Scopes of Practice


- Pharmacists administering Vaccines
- Nurse Practitioners have expanded prescribing and diagnostic ability
- Physiotherapist are managing wounds

Introduction of New Health Professional Roles

- Physician Assistant
- Anesthesia Assistant

8 | Presentation Title | Client Name | 00 Month Year | nursing

15/06/2015


 Health Sciences Centre
Winnipeg

Why Collaborate?

Collaborative Care can positively impact:

- Wait times
- Healthy workplaces, job satisfaction
- Health human resources planning, employee retention
- Patient/resident/client safety
- Primary health care
- Chronic disease management


10 | Presentation Title | Client Name | 00 Month Year hsc.winnipeg

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Winnipeg

Why Interprofessional Education?


"If health care providers are expected to work together and share expertise in a team environment, it makes sense that their education and training should prepare them for this type of working environment" (Romanow, 2002).

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CANADA & WRHA

12 | Presentation Title | Client Name | 00 Month Year hsc.winnipeg

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National Framework

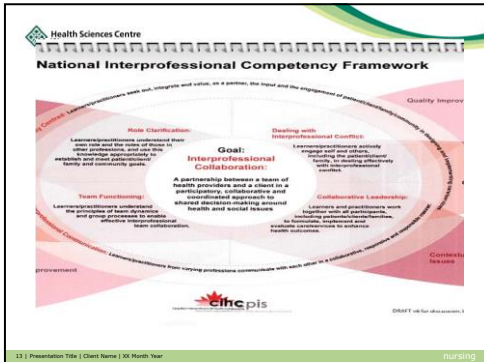


cihc/pis

Canadian Interprofessional Health Collaborative
Consortium pancanadien pour l'interprofessionnalisme en santé

13 | Presentation Title | Client Name | 00 Month Year hsc.winnipeg

15/06/2015



- ### CIHC Competencies
- The six competency domains are:
- 1) Person-centred care
 - 2) Role clarification
 - 3) Team functioning
 - 4) Collaborative leadership
 - 5) Interprofessional communication
 - 6) Interprofessional conflict resolution

WRHA Collaborative Practice

Respect for differing perspectives and the acknowledgement that each health professional has an important element to contribute to improving health and outcomes are at the foundation of Collaborative Care. Collaborative Care requires a climate of trust and value, where health providers can comfortably turn to each other to ask questions.

<http://www.wrha.mb.ca/professionals/collaborativecare/>

Person-Centered Care

Health Providers include patient/families as members of the healthcare team, involving them in the design, implementation and evaluation of their care plan.

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Role Clarification

- Health Providers understand their own role and the roles of those in other professions. This helps avoid duplication and gaps in care.

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Role Awareness Activity

28 | Presentation Title | Client Name | XX Month Year | nursing

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Stereotypes

We possess stereotypes about other professions as well as our own. Stereotypes impact how we provide patient care

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Roles

We all have defined roles

Role Clarity- leads to better utilization of individual health care workers, improved communication, reduced error, and enhanced delivery of patient care (Meuser et al. 2006).

30 | Presentation Title | Client Name | XX Month Year | nursing

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Job satisfaction is connected to the ability to deliver high-quality care

(Kramer & Schmalenberg, 2004)

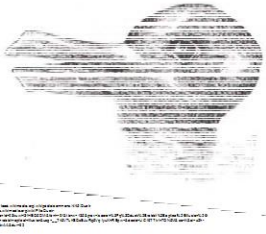
20 | Presentation Title | Client Name | CC Health Year | Nursing

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"We may look in the same direction, even at the 'same lines' and not see what our colleague sees." (McKee, 2003)


21 | Presentation Title | Client Name | CC Health Year | Nursing

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22 | Presentation Title | Client Name | CC Health Year | Nursing

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23 | Presentation Title | Client Name | CC Health Year | Nursing

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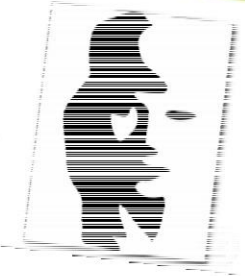
Importance of Role Understanding

Without knowledge of each others' roles and considering what others CAN DO, it is difficult for health care team members to develop respect, tolerance and a willingness to work with one another (ehpic™, 2012).

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Valuing how others see Can help us to SEE..



25 | Presentation Title | Client Name | CC Health Year | Nursing

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"The strength of the team is each individual member. The strength of each member is the team."
- Phil Jackson

27 | Presentation Title | Client Name | CC Health Year | Nursing

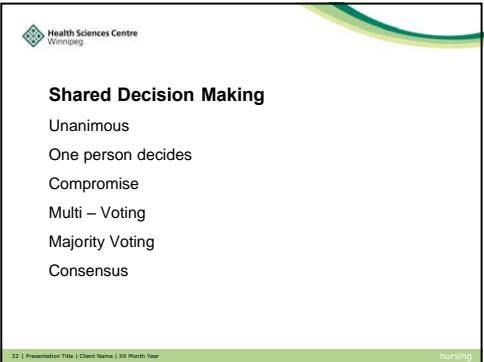
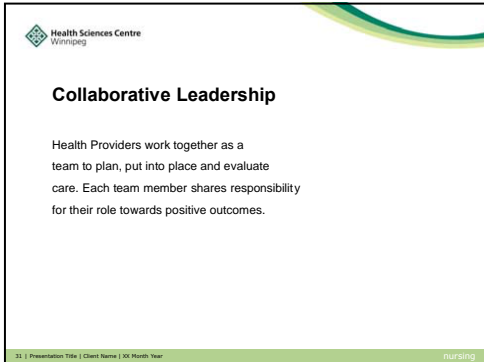
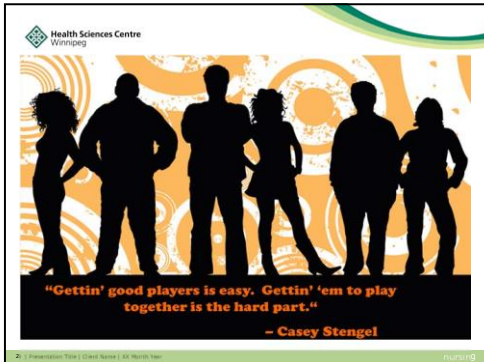
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Team Functioning

Health Providers/students understand the principles of team work and team processes to enable effective interprofessional collaboration.

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15/06/2015



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Behaviours that help/hinder

Helpful Behaviours	Hindering Behaviours
Listening to others' ideas politely even when you disagree	Interrupting people to promote your personal views
Paraphrasing the main points made by another person to acknowledge	Not acknowledging ideas that others have put on the table
Praising others' ideas or giving useful feedback	Criticizing or putting down others' ideas
Building on others' ideas	Pushing your ideas while ignoring others' input
Being open about your concerns and reservations	Keeping objections to yourself
Dealing with 'facts'	Basing arguments on feelings
Staying calm and friendly	Getting overly emotional

33 | Presentation Title | Client Name | 00 Month Year | nursing

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Case Example:


Mr. Smith is a 28y.o. male admitted 3 months ago to RR5 following a traumatic spinal cord injury at C6-C7. He is medically stable, but continues to struggle with mobility and both the physical and emotional consequences of his injury.

Which healthcare professionals would be members of his healthcare team?
Who is best suited to lead his care?

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“Two monologues do not make a dialogue.”
– Jeff Daly



35 | Presentation Title | Client Name | 00 Month Year | nursing

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Interprofessional Communication

Health Providers talk with each other and Patients/families in an open, collaborative and responsible manner that builds trust with others.

It is **Your** responsibility to tell those who are caring for patients with you, about the care you are providing with them!

36 | Presentation Title | Client Name | 00 Month Year | nursing

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Ask questions, communicate to be understood, seek input and listen respectfully to generate options for care

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COMMUNICATION ACTIVITY

1. Break up into teams of 4.
2. Each group is to delegate an architect, owner, foreman and builder. If there is a teams of three , eliminate the owner.
3. At one end of the room have "plate" set up, shield it from everyone but the architect.
4. The architect will instruct the owner/foreman piece by piece how to reconstruct the pattern on the "plate".
5. The owner will then walk half the length of the room, relay the instructions to the foreman.
6. Foreman will the walk the remaining distance of the room and relay the instructions to the builder. Who will then place the "said" item from a pile of items onto the plate.
7. Repeat process for all remaining items.

38 | Presentation Title | Client Name | 00 Month Year | nursing

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DEALING WITH INTERPROFESSIONAL CONFLICT

39 | Presentation Title | Client Name | 00 Month Year | nursing

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Interprofessional Conflict Resolution

Health Providers/students work as a team that actively engages in addressing disagreements and responds effectively to all types of conflict.

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Acknowledge that there are limits to what you know and that you will continue to learn from others

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“I’ve learned that people will forget what you said and people will forget what you did, but people will never forget how you made them feel.”

Mark Twain

42 | Presentation Title | Client Name | 00 Month Year | nursing

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Post Intervention Questionnaire

43 | Presentation Title | Client Name | 00 Month Year | nursing

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Thank you



44 | Presentation Title | Client Name | 00 Month Year | nursing

Appendix F

CONSENT FORM**Research Project Title: Effects of an Interprofessional Education Session on Newly Hired Healthcare Professionals Attitudes Towards Interprofessional Teams****Researcher: Kari Mann, BN, BSc, Graduate Student, College of Nursing, Faculty of Health Sciences, University of Manitoba**

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Participation in this study is voluntary. You are under no obligation to participate. By signing this consent form you will identify yourself and indicate your interest in participating in the study. You may change your mind and withdraw from the study at any time. If you choose you participate you will be asked to complete a questionnaire with 21 questions. It will take approximately 10 minutes to complete. You will also be asked to complete the questionnaire after the education session is complete. You can elect to not answer any questions. Participants will attend a half-day education session on a Tuesday afternoon, from 1200 until 1530. There will be approximately 60 individuals newly hired to Health Sciences Centre participating in the education session. All participants will participate in an interprofessional education session where you will learn with from and about each other's profession. Participants will receive education addressing the core competencies of collaborative practice; will participate in a facilitated discussion of professional roles and responsibilities and an experiential learning activity highlighting the importance clear communication. Your participation in the study and responses will be kept confidential. Your name will not appear on the questionnaire. No information that could identify you will appear in the findings of the study. The findings of this study will be presented to nurses.

There is no expected harm to you as a participant and you may not receive any direct benefit from participating in the study. The information gathered from this study will help to build knowledge about the impact of Interprofessional Education sessions on attitudes towards interprofessional teams. Study findings will be shared with Leadership at HSC, the Winnipeg Regional Health Authority and the University of Manitoba to inform future interprofessional education interventions

Participants who wish to know about the findings of this study will be provided with a summary of the results. If you would like to receive a summary of the findings of this research study please send an email request to umdrie37@cc.umanitoba.ca. Your request for the summary cannot be linked in any way to your completed questionnaires. The projected timeline for sharing of the findings is Fall, 2015.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

**Researcher: Kari Mann ph. [REDACTED] Supervisor: Dr. Christine Ateah
ph. [REDACTED]**

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Education/Nursing Research Ethics Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator (HEC) at 204-474-7122 or email margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Thank you for agreeing to participate in this study.

I agree to participate in the study “Impact of an Interprofessional Education Session with Healthcare Professionals on Attitudes Towards Interprofessional Teams”. I have read, understand and have a copy of the “INVITATION TO PARTICIPATE.”

Participant’s Signature _____ Date _____

Researcher and/or Delegate’s Signature _____ Date _____

Appendix G

INVITATION TO PARTICIPATE**Impact of an Interprofessional Education Session on Newly Hired Healthcare Professionals' Attitudes Towards Interprofessional Teams: A Research Study**

Dear Health Sciences Centre Employee:

You are invited to participate in a study of newly hired healthcare professionals. The purpose of the study is to investigate the impact of an interprofessional education session on attitudes towards interprofessional teams.

Kari Mann, a graduate student in the College of Nursing, Faculty of Health Sciences at the University of Manitoba, is conducting the study. This study is being conducted as a requirement of the thesis based Masters of Nursing program. Kari's advisor is Dr. Christine Ateah, Professor, College of Nursing, Faculty of Health Sciences at the University of Manitoba.

In order to be eligible to participate in this study you must hold a position at Health Sciences Centre (HSC), not have previously attended New Employee Orientation at HSC since August of 2013, and be able to read and write in English. If you have received this letter, you are listed as an attendee at an upcoming New Employee Orientation at HSC, however you may or may not meet the eligibility requirements to participate in this study.

Participation in this study is voluntary. You are under no obligation to participate. Your involvement will consist of completing two questionnaires before, and one after, the education session. Your answers are anonymous and your name is not required on any of the documents, you will be instructed on creating a code word for your documents. You are allowed to withdraw from the study at any time without penalty by choosing not to submit your questionnaires. Your decision to not answer individual questions, participate or to withdraw from the study will not affect your employment and will not be communicated with your employer.

If you choose not to participate Health Sciences Centre still requires you to attend the educational session and complete a site based pre and post questionnaire as part of your mandatory orientation. The study questionnaire will take less than 5 minutes to complete; completion of the study questionnaire will not extend the attendance time required. The session will take approximately 3.5 hours and will include approximately 1 hour of lecture. The competencies of interprofessional collaboration will be defined, along with descriptions of how to implement the competencies in practice, and clinical examples that exemplify the core competencies will be shared. The lecture will be combined with a facilitated discussion addressing professional roles and responsibilities and an experiential learning activity related to interprofessional communication, which will take the remaining two and a half hours. During the experiential learning activity, participants will have the opportunity to communicate clearly and seek understanding. Study participants will complete a questionnaire on interprofessional teams immediately pre and post intervention. If you do participate in the study, upon submission of the posttest you will receive a \$5 Starbucks gift card. There is no expected harm to you as a

participant and you may not receive any direct benefit from participating in the study. The information gathered from this study will help to build knowledge about the impact of interprofessional education sessions on attitudes towards interprofessional teams. Study files will be stored in a locked drawer in the researcher's home and will be destroyed within 5 years.

None of your personal information will be included in any publications or presentations resulting from this study. No one will be able to identify you as a participant.

If you have any questions about this study, please contact Kari Mann at [REDACTED] or her thesis advisor, Dr. Christine Ateah, College of Nursing at [REDACTED] or [REDACTED]

If you would like to receive a summary of the findings of this research study please send an email request to [REDACTED]. Your request for the summary cannot be linked in any way to your completed questionnaires. The projected timeline for sharing of the findings is Fall, 2015.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Education/Nursing Research Ethics Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator Maggie Bowman at 204-474-7122.

Appendix H



Research Ethics and Compliance
Office of the Vice-President (Research and International)

Human Ethics
208-194 Dafoe Road
Winnipeg, MB
Canada R3T 2N2
Phone +204-474-7122
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APPROVAL CERTIFICATE

August 21, 2015

TO: Kari G. D. Mann (Principal Investigator) [Redacted] (Advisor G. Ateah)

FROM: Thomas Falkenberg, Chair (Education/Nursing Research Ethics Board (ENREB)) [Redacted]

Re: Protocol #E2015:068
"Impact of an Interprofessional Education Session with Healthcare Professionals on Attitudes toward Interprofessional Teams"

Please be advised that your above-referenced protocol has received human ethics approval by the **Education/Nursing Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement (2). **This approval is valid for one year only.**

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note:

- If you have funds pending human ethics approval, please mail/e-mail/fax (261-0325) a copy of this Approval (identifying the related UM Project Number) to the Research Grants Officer in ORS in order to initiate fund setup. (How to find your UM Project Number: <http://umanitoba.ca/research/ors/mrt-faq.html#pr0>)
- if you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.

The Research Quality Management Office may request to review research documentation from this project to demonstrate compliance with this approved protocol and the University of Manitoba *Ethics of Research Involving Humans*.

The Research Ethics Board requests a final report for your study (available at: http://umanitoba.ca/research/orec/ethics/human_ethics_REB_forms_guidelines.html) in order to be in compliance with Tri-Council Guidelines.



Health Sciences Centre
Winnipeg

Office of the Director of Research

Dial Direct 204-787-4831
Fax 204-787-4547

September 9, 2015

Kari Mann
Principal Investigator
NA549

Dear Kari Mann

RE: IMPACT OF AN INTERPROFESSIONAL EDUCATION SESSION ON NEWLY HIRED HELATHCARE PROFESSIONALS' ATTITUDES TOWARDS INTERPROFESSIONAL TEAMS: A RESAERCH STUDY.

ETHICS #: E2015:068 RIC #: RI2015:135

The above-named protocol, has been evaluated and approved by the HSC Research Impact Committee.

The Department of Research wishes you much success with your study.

Sincerely



Karen Shaw-Allan
Research Protocol Officer
Health Sciences Centre

cc: Director of Research
Ancillary Services, Finance Department



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