

DEVELOPMENT AND FEASIBILITY TESTING OF AN INTERPROFESSIONAL  
EDUCATION INTERVENTION TO SUPPORT  
COLLABORATIVE PRACTICE IN HOME CARE FOR OLDER ADULT STROKE  
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AND THEIR FAMILY CAREGIVERS

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AND THEIR FAMILY CAREGIVERS

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A Thesis Submitted to the School of Graduate Studies  
In Partial Fulfillment of the Requirements for the Degree

Doctor of Philosophy

(Nursing)

McMaster University

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DOCTOR OF PHILOSOPHY (2018)

McMaster University

Nursing

Hamilton, Ontario

TITLE: Development and Feasibility Testing of an Interprofessional Education  
Intervention to Support Collaborative Practice in Home Care for Older Adult Stroke  
Survivors with MCC and their Family Caregivers

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NUMBER OF PAGES: xv, 227

## **Lay Abstract**

This feasibility study used qualitative and quantitative methods to evaluate the implementation of a new theory-based, Interprofessional Education (IPE) intervention and explored its effects on collaborative practice in home care for older stroke survivors with multiple chronic conditions. The IPE intervention was developed and evaluated within the context of a larger pragmatic randomized controlled trial (RCT), which evaluated the effectiveness of the Aging Community and Health Research Unit Community Partnership Program. The six-month IPE intervention consisted of four key components: (a) an initial three-hour standardized IPE training session; (b) standardized training for care coordinators; (c) collaborative practice reflective huddles; and (d) outreach visits. Participants included 37 home care providers including registered nurses, physiotherapists, occupational therapists, personal support workers, care coordinators, and nursing, rehabilitation and personal support worker supervisors from two service provider agencies and one Community Care Access Centre (CCAC) in Ontario, Canada. The intervention was effective in improving collaborative practice (e.g., communication within teams, role understanding, team decision-making and conflict management). Facilitators to implementing the intervention included: funding from the larger trial, leadership support, provision of key resources, and continuity of the care coordinators. Barriers included unanticipated delays in recruitment of older adult stroke survivor participants into the larger trial, and higher than expected attrition rates. This study offers preliminary evidence that the intervention is feasible to deliver, acceptable to providers, and may improve collaboration within an interprofessional stroke-specific team. Further research is necessary to test this intervention in other chronic populations and settings.

## Abstract

**Background.** Many older stroke survivors live with multiple ( $\geq 2$ ) chronic conditions (MCC), resulting in the need for care by multiple health and social service providers from multiple organizations and sectors. Managing the physical, social and psychological needs related to stroke in addition to other chronic conditions is a complex process that is best served by an interprofessional team of health care providers working collaboratively toward common goals. Interprofessional education (IPE) has been promoted by numerous organizations as a method to enhance collaborative practice. However, many home care providers have not received formal IPE or training to support collaborative practice. Providing IPE in the home care setting is challenging because providers rarely work in a common location, often work in isolation, and spend much of their time driving to provide care to clients in their homes. Moreover, the effectiveness of IPE on collaborative practice for stroke rehabilitation in the home care setting is undetermined. New approaches to IPE for practicing health care providers working in the home care setting are needed. The purpose of this study was to examine the feasibility and acceptability of implementing a new theory-based, IPE intervention, and to explore its effects on collaborative practice in home care for older adult stroke survivors with MCC.

**Method.** This feasibility study involved the use of both a qualitative descriptive and a quantitative (one-group repeated measures) design. The IPE intervention was developed and evaluated within the context of a larger pragmatic randomized controlled trial (RCT), which evaluated the effectiveness of the Aging Community and Health Research Unit Community Partnership Program (ACHRU-CPP). Informed by the W(e) Learn Framework for Interprofessional Education, the National Interprofessional Competency

framework, and the literature, the IPE intervention consisted of four key components: (a) an initial three-hour standardized IPE training session; (b) standardized training for care coordinators; (c) collaborative practice reflective huddles; and (d) outreach visits. The primary outcome was the feasibility of the IPE intervention (enrollment rate, attrition rate, implementation barriers/facilitators). Secondary outcomes included the acceptability of the IPE intervention, the feasibility of the study methods (recruitment/retention rates and procedures, eligibility criteria, data collection and analysis methods), and potential effectiveness of the intervention based on three-month changes in collaborative practice, as measured by the Collaborative Practice Assessment Tool (CPAT) and the 19-Item Team Climate Inventory (TCI). Feasibility and acceptability outcomes were based on descriptive statistics for enrollment and attrition rate and qualitative descriptive analysis of focus group content, field notes, and evaluation of training. The potential effectiveness of the IPE intervention was explored using paired t-tests and Cohen's d, with the results expressed using descriptive statistics and effect estimates (95% confidence intervals).

**Results.** A total of 37 home care providers from two provider agencies and one Community Care Access Centre (CCAC) in Ontario, Canada participated in the study. Participants included registered nurses, physiotherapists, occupational therapists, personal support workers, care coordinators as well as nursing, rehabilitation and personal support worker supervisors. Participants viewed the intervention as feasible and acceptable. It was effective in improving three domains of collaborative practice as measured by the CPAT (communication/information exchange; community linkage and coordination of care; decision-making and conflict management) and one domain of collaborative practice, as measured by the TCI (task orientation) at six months post initial training.

Participants perceived many benefits to the intervention, including improved communication and collaboration within their teams, enhanced role understanding, increased learning with and from each other, and increased appreciation and valuing of the expertise of all team members. Facilitators to implementing the intervention included: funding from the larger trial, support from key stakeholders including agency leadership, provision of key resources (e.g., Team Charter, sample agenda), and continuity of the care coordinators. Barriers included unanticipated delays in recruitment of older adult stroke survivor participants into the larger trial, and higher than expected attrition rates. The study methods were feasible and effective in reaching the target population. We established that the intervention could be delivered as planned.

**Conclusion.** The results of this study provide preliminary evidence for the feasibility, acceptability and preliminary effects of the IPE intervention on collaborative practice for an interprofessional stroke-specific team in home care caring for older adult stroke survivors with MCC. The results also provide knowledge of the facilitators and barriers to successfully implementing and sustaining the intervention into home care practice. Further research is warranted to test this intervention in other chronic populations and settings.

## ACKNOWLEDGEMENTS

I would like to acknowledge several individuals who supported me in completing this thesis. First, I would like to extend my sincerest appreciation and many thanks to my supervisor, Dr. Maureen Markle-Reid, for her scholarly expertise, contribution, guidance, and editorial assistance. To my committee members, Dr. Jenny Ploeg, Dr. Noori Akhtar-Danesh, and former committee member Dr. Colleen McKey, thank you for your ongoing support, for challenging my thinking, and for encouraging me to continue on this journey. Your collective expertise continues to inspire and motivate me to pursue my academic goals.

I acknowledge the home care agencies and individual health care providers who participated in this study. I thank you for your willingness to engage in the study activities and appreciate the time you took to share your experiences with me.

Completing this thesis would not have been possible without the ongoing support of my family and close friends. Thank you for being there to listen my stories, support me through the challenges, and celebrate the successes. I would particularly like to extend my thanks to my husband, Rob, and our children, Elizabeth, and Steven for their ongoing love and encouragement. In addition, I extend special thanks to my very close friends and professional colleagues who embarked on this journey with me, Lynn Bonk, Helen Kelly, and Christine Dennis. Finally, I must acknowledge my loving parents Thomas and Marion Bookey, for their unwavering support, love, and encouragement to reach for my dreams!



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## Declaration of Academic Achievement

This thesis is a report of original research that I have conducted under the supervision of: Dr. Maureen Markle-Reid (since January 2013), Dr. Noori Akhtar-Danesh (since January 2013), Dr. Colleen McKey (from January 2013 to September 2016), and Dr. Jenny Ploeg (since September 2016). Committee members have had input into: (a) the research proposal including the topic, design, research questions, location of data collection sites, and data collection tools; (b) the research ethics board submission; (c) data analysis activities; (d) drafts of chapters of the thesis; and (e) drafts of the complete thesis. I developed and implemented the intervention and collected data at two study sites. Audio-recordings for the focus groups were transcribed by an undergraduate nursing student from the Aging Community and Health Research Unit and checked for accuracy by myself. Funding in the amount of \$3000.00 was received from the Nursing Research Interest Group of the Registered Nurses' Association of Ontario to support this study. The findings of the study have been presented at two national and one international conference:

Bookey-Bassett, S., Markle-Reid, M., Ploeg, J., Akhtar-Danesh, N. *Feasibility of Interprofessional Education to Support a Team Approach to Stroke Rehabilitation for Older Stroke Survivors and their Family Caregivers in the Home Care Setting*. Paper presented at Collaborating Across Borders VI, Exploring New Heights, 2017, Banff, Alberta, Canada.

Bookey-Bassett, S. & Markle-Reid, M., Ploeg, J., Akhtar-Danesh, N., & McKey, C. *Interprofessional Education to Support a Team Approach to Stroke Rehabilitation for Patients and Carers*. Paper presented at the Canadian Gerontological Nurses Association, 19<sup>th</sup> Biennial Conference May 2017, Ottawa, Ontario, Canada.

Bookey-Bassett, S., & Markle-Reid, M. *Interprofessional Education to Support a Team Approach to Stroke Rehabilitation for Patients and Carers*. Paper presented at the 2016 Canadian Home Care Association's Home Care Summit. Vancouver, BC.



## **Chapter One**

### **Introduction**

Stroke is the second major cause of long-term disability in North America (Teasell & Hussein, 2018). The majority (75%) of older adult ( $\geq 65$  years) stroke survivors in Ontario live with an average of 3.5 chronic conditions (Griffith et al., 2014), 60% are left with some disability, and 40% require more intensive rehabilitative support in their homes in the community (HSF, 2017). Current Canadian best practice recommendations for stroke recommend that stroke rehabilitation be provided by a stroke-specific interprofessional team. Nurses have the potential to play a critical role in leading a stroke-specific interprofessional team given their role and scope of practice.

Interprofessional education (IPE) is emerging as an effective strategy to support an interprofessional team approach. However, the effectiveness of IPE on collaborative practice for stroke rehabilitation in the home care setting is undetermined. Moreover, there are multiple barriers to the implementation of IPE in the home care setting, and therefore a need to develop and investigate new approaches for delivering IPE in this context. The overall purpose of this study was to examine the feasibility and acceptability of a new theory-based IPE intervention, and to explore its effects on collaborative practice in home care for older adult stroke survivors with MCC. This study was part of a larger pragmatic randomized controlled trial (RCT), the aim of which was to evaluate the effects and costs of the Aging, Community and Health Research Unit Community Partnership Program (ACHRU-CPP) for older adults with stroke and MCC using home care services and their family caregivers (<https://achru.mcmaster.ca>).

### **The Burden of Stroke in Older Adults with MCC**

There are 62,000 strokes in Canada each year, causing significant burden to individuals, families, and society in general (Di Carlo, 2009; Heart and Stroke Foundation [HSF], 2016, 2017). Internationally, the financial burden of stroke is estimated to account for 1.7% to 3% of national health care expenditures (The Economist Intelligence Unit, 2016). An aging population along with improvements in stroke care as seen by the expansion of stroke centres, improved access to designated stroke teams, increased tele-stroke capacity, and treatment with the clot-busting drug tissue plasminogen activator (tPA), have resulted in higher stroke survival rates (Fisher, Martin, Srikusalanukul, & Davis, 2014; HSF, 2014a). Over the past 60 years, death rates from cardiovascular disease and stroke have declined by more than 75% (HSF, 2014a). About 83% of individuals who have a stroke and are admitted to hospital will survive (HSF, 2015). As a result, there are approximately 405,000 individuals experiencing the long-term effects of stroke in Canada (prevalence 1.15%) and this number is expected to increase to between 654,000 and 726,000 by 2038 (Krueger et al., 2015). After stroke, approximately 80% of stroke survivors are discharged home (Hale, 2004); 60% are left with some disability, and 40% require more intensive rehabilitative support in their homes in the community (HSF, 2017).

While it is presumed that the return of stroke survivors to their homes decreases the costs of acute care health services, it often creates additional burden for stroke patients and their families (HSF, 2014a; Miller et al., 2010; Wissel, Olver, & Sunnerhagen, 2013). Stroke survivors generally face numerous physical, psychological, social, occupational, and financial challenges when reintegrating back into the

community, often requiring assistance with personal care and hygiene, meal preparation, transportation, and other homemaking services (Cheung et al., 2012; Cott, Wiles & Devitt, 2007; Hale, 2004; Walker, Sunnerhagen, & Fisher, 2013).

Almost all (94%) of individuals suffering a stroke have at least one other chronic condition (Nelson et al., 2017), making their treatment and care more complex (Karatepe, Gunaydin, Kaya, & Turkmen, 2008; HSF, 2017). MCC as defined by the National Quality Forum (2012, p. 2) refers to “two or more chronic conditions that collectively have an adverse effect on health status, function, or quality of life and that require complex healthcare management, decision-making or coordination.” Older stroke survivors ( $\geq 65$  years) often live with MCC such as hypertension, diabetes, coronary artery disease, and osteoarthritis (Griffith et al., 2014).

Managing MCC requires monitoring by multiple specialists for treatment. The management of one condition may interfere with management of another condition. The current health care system is poorly designed to meet the needs of this population (Lachman & Nicklin, 2017). While acute care for stroke patients has improved significantly, community services and supports have not expanded to the same degree, especially in rural areas (HSF, 2017). Shorter length of stay in acute care settings means that more stroke survivors are discharged to their homes earlier during their recovery (compared to previous decades) and may require ongoing rehabilitation services in the community (Mayo et al., 2008). Yet, little is known about the best way to provide stroke rehabilitation to older adults with MCC.

Community reintegration refers to the process of transitioning back to the community and optimizing life roles and activities following a stroke (Salter et al., 2013),

and can take up to a full year post-stroke. However, stroke survivors using home care services receive limited and short-term support from professional services such as nursing, physiotherapy and occupational therapy to maximize their recovery process (HSF, 2017). In Ontario, Canada, the rehabilitation services are neither stroke specialized nor interdisciplinary. According to Allen et al. (2018), access to post-acute stroke rehabilitation is challenging especially in rural areas where issues of mobility, transportation or geography exist. Community-based stroke rehabilitation is primarily provided by Community Care Access Centres however, recent trends show a decrease in the proportion of stroke survivors receiving this service. In 2012 only 51% of stroke survivors received this service and the average number of visits per patient does not meet current Canadian best practice recommendations for stroke (Allen et al., 2018).

Models of Community-Based Stroke Rehabilitation (CBSR) across Ontario vary in terms of composition, qualifications of team members, care pathways, standardized reporting, and team practices (Allen, 2016). In usual practice, communication, information sharing and mechanisms for collaboration among providers are variable and limited. CBSR is provided in teams in some CCACs but is not usual practice at the CECCAC.

Furthermore, there is limited collaboration among home and community care providers, and limited collaboration between home care, primary care, and other health and social services, leading to duplication, fragmentation, and unmet needs (Markle-Reid, Ganann, Whitmore, Valaitis, & Ploeg, 2017). Strategies to enhance the management of MCC for older stroke survivors using home care services are needed to improve the quality of care, health outcomes, and reduce costs in this population (Karatepe et al.,

2008). Family caregivers play a critical role in the recovery and rehabilitation of those suffering a stroke (Cameron et al., 2016). However, the burden of caring for an older stroke survivor with MCC may result in negative impacts on caregivers' physical and mental health (DiCarlo, 2009; Salter et al., 2016).

### **The Need for Specialized Interprofessional Teams for Community-Based Stroke Rehabilitation**

There is accumulating evidence from systematic reviews and RCTs for the effectiveness of interprofessional teams in reducing stroke-related mortality and morbidity, length of stay, and costs of care in inpatient settings (Fisher et al., 2011; Stroke Unit Trialists Collaboration, 1997, 2007). The benefits of early-supported discharge (ESD) interventions with continued rehabilitation in the early discharge phase (less than three months) have been well-documented (Fearon & Langhorne, 2012; Meyer, Teasell, Thind, Koval & Speechley, 2016). Currently, a stroke-specific interprofessional team-based approach to stroke rehabilitation is recognized as the optimal model of care and is part of Canadian best practice recommendations for stroke (HSF, 2017; Meyer et al., 2016). There is some evidence for the effectiveness of interprofessional stroke teams in home and community care (Allen et al., 2016; Allen et al., 2018; Markle-Reid, Orridge et al., 2011). The benefits of an interprofessional team approach to community-based stroke rehabilitation (CBSR) include: (a) interdisciplinary team goal setting, communication and case management; (b) stroke-specific expertise, patient navigation and community re-engagement; (c) transition to community support services (day programs, exercise groups); (d) a focus on self-management and secondary prevention; and (e) consistency across stroke team members (Ure & Willems, 2014).

To be effective, CCSR teams should engage in collaborative practice that includes: (a) having a designated care coordinator/case manager; (b) communicating regularly through multi-disciplinary team meetings; (c) developing shared objectives and clearly defined roles and responsibilities; (d) facilitating coordination of care across multiple sectors, and (e) involving patients and family caregivers as part of the team (Canadian Stroke Network, 2013; Cheung et al., 2012; Clarke, 2013; Markle-Reid, Orridge, et al., 2011; Meyer et al. 2016). Additionally, effective communication and collaboration among stroke team members within and across sectors is necessary for safe, quality patient care, enhanced patient and provider outcomes, and reduced health care costs (Cheung et al., 2012; Markle-Reid, Browne & Gafni, 2011; World Health Organization [WHO], 2010a). Conversely, a lack of collaboration among health care professionals may lead to disruptive or conflicting care that undermines the fundamentals of holistic care and the rehabilitation process (Cott, Wiles, & Devitt, 2007). These data highlight the need for IPE to support collaborative practice (Centre for Advancement of Interprofessional Education [CAIPE], 2016; Reeves, Palaganas, & Zierler, 2017).

### **Interprofessional Education to Support Collaborative Practice**

IPE occurs when individuals from two or more professions interactively learn with, from, and about each other to improve collaboration and quality of care (Centre for Advancement of Interprofessional Education [CAIPE], 2002). There is accumulating evidence for the effectiveness of IPE for enhancing collaborative practice among healthcare team members in acute care and primary care settings (Reeves, Perrier, Goldman, Freeth, & Zwarenstein, 2013; Reeves et al., 2017; Sargeant, Loney & Murphy, 2008; WHO, 2010). A limited number of single studies indicate IPE has the potential to

support collaborative practice for stroke care in acute care stroke units, stroke rehabilitation, and community-based rehabilitation settings (Frisby, Mehdi, & Birns, 2015; McKellar et al., 2011; Selby, Fulford-Smith, King, Pitt, & Knox, 2011).

At the time of this study, there were no existing IPE initiatives and IPE was not a part of standard practice in the home care sector (Ploeg et al., 2017). The decentralized nature of the home care work environment, heavy caseloads, and the limited use of interprofessional teams may create multiple barriers to the delivery of IPE in the home care setting. Home care providers generally work in isolation from other colleagues and spend much of their time travelling from one client's home to another, providing direct patient care (Baxter & Markle-Reid, 2009). Likewise, home care providers often work for multiple providers, and, often do not meet in person or have opportunities to attend continuing education and staff development sessions (Boynton, Shute, Rawlin, Smith, & Willett, 2013). The result is limited opportunity for formal or informal IPE in everyday practice. Contextual factors such as space and scheduling of other profession-specific learning activities, lack of leadership support, and budgetary factors may also impede IPE in community practice settings (Olaisen, Mariscal-Hergert, Shaw, Macchiavelli, & Marsheck, 2014; Reeves et al., 2016; Vanderzalm, Hall, McFarlane, Rutherford, & Patterson, 2013). Unlike large academic teaching hospitals, home and community settings may also lack the availability of faculty or trained staff to design, implement and evaluate IPE programs. In addition, home and community employment differs from acute care in that it largely consists of unregulated providers and involves shared responsibility for care with informal caregivers (Markle-Reid et al., 2017).

These data suggest that different methods of delivering IPE to providers in the home and community setting are needed to support collaborative practice. To date, there is no research that has specifically examined the effectiveness of IPE on collaborative practice among home care providers delivering team-based CBSR to older adult ( $\geq 65$  years) stroke survivors with MCC, and the optimal format and components of IPE needed to support collaborative practice.

### **Relevance to Nursing Practice**

Nurses represent the largest proportion of health professionals in the health care system and are key members of an interprofessional team (Orchard, 2010). Nurses play a critical role as case managers, care coordinators, and educators for stroke survivors and their family caregivers (Kerr, 2012; Camica et al., 2014). Nurses working in home care are well positioned to lead an interprofessional CBSR team. This involves supporting stroke survivors in their recovery through the provision of a range of services focused on health promotion, disease prevention, ongoing education, and system navigation (Community Health Nursing Standards of Practice, 2008; Markle-Reid, Orridge, et al., 2011). Through collaboration with other members of the interprofessional team, nurses providing direct care and those in case manager roles, bridge the gap among different programs and service providers in the community to deliver holistic stroke care (Chen, Xiao, & DeBellis, 2016). The addition of a nurse to CBSR teams can promote an interdisciplinary environment, enhance stroke knowledge among team members, and encourage a holistic approach to care (McGinnes, Easton, Williams, Neville, 2010). Additionally, nurses perform a central role in identifying the social and emotional



challenges associated with stroke recovery and provide ongoing support to stroke survivors and their families (Meyer, Teasell, Thind, Koval, & Speechley, 2016).

Yet, the literature on nursing care for stroke survivors focuses primarily on the role of the nurse in the hospital context, with little reference to the role of the registered nurse (RN) as part of interprofessional stroke team in home care (McGinnes et al., 2010). Moreover, previous studies evaluating the effectiveness of ESD teams are typically comprised of allied health professionals, not nurses (McGinnes et al., 2010; Meyer et al., 2016).

### **Purpose of the Study**

The purpose of this study was to examine the feasibility and acceptability of implementing a new theory-based IPE intervention, and to explore its effects on collaborative practice in home care for older adult stroke survivors with MCC. The IPE intervention was developed, implemented and evaluated within the context of a larger pragmatic RCT in Ontario, the aim of which was to evaluate the effects and costs of the ACHRU-CPP for older adults with stroke and MCC using home care services and their family caregivers, ([www.achru.mcmaster.ca](http://www.achru.mcmaster.ca)).

### **Significance of the Study**

The knowledge gained from this study can be used to determine the feasibility of conducting a larger study examining the effectiveness of the IPE intervention on collaborative practice for CBSR teams in other settings. Furthermore, the intervention could be applicable to other chronic disease populations. Nurses and other home care providers providing team-based CBSR to older adults with stroke and MCC and their families may find study results useful for supporting and delivering IPE and collaborative

practice within and across teams and organizations. This study will provide information on the barriers and facilitators to the delivery of IPE in the home care setting. Findings will also contribute to the growing body of evidence for the effectiveness of IPE in supporting collaborative practice.

**Personal Reflection: My Journey to Here**

Many factors have influenced my interest in and passion for interprofessional team approaches to patient care throughout my career as a nurse. As an undergraduate nursing student, I developed friendships with students in other disciplines such as occupational therapy, physiotherapy, and pharmacy. These experiences provided me with an early understanding of and appreciation for their roles and contributions to patient care.

As a staff nurse in a neonatal intensive care unit, I learned to work in a team environment. I was fortunate to work in a respectful team environment where nurses, physicians, respiratory therapists, pharmacists, social workers, and dietitians learned from and with each other to provide the best care possible to very premature and critically ill neonates and their families. Through my other roles as a nurse educator and a nurse manager in inpatient settings, I learned to work collaboratively with other professions to provide staff education and implement practice changes to ensure the delivery of quality patient care. I have always viewed team approaches to care as the best option for health care providers and for patients.

About ten years ago, while working as a clinical instructor for undergraduate nursing students, IPE was introduced to the curriculum. Students were expected to spend part of their clinical practicum learning about the roles of other health care professionals. I was pleased that students would have this opportunity to learn about other professions and could see how they benefitted from this learning through reading their reflections. It just made sense to me that students should learn about other roles in their programs to prepare them to work in teams.

Through my doctoral studies in the Aging Community and Health Research Unit (ACHRU), I gained knowledge and understanding of the importance of collaboration among health care professionals in providing quality care to older adults living with MCC in the community. I also learned that there was not as much support for IPE and collaborative practice in the community sector compared to acute care in some academic teaching hospitals. Along with my doctoral supervisor, I identified this as an area that required further research.

In 2013, I took a certificate course in developing and designing IPE programs (Educating Health Professionals in Interprofessional Care [EHPIC]). Since then, I have been involved in facilitating IPE in undergraduate nursing and medicine programs, acute care settings, and professional development workshops. I also belong to an IPE Community of Practice, where I continue to learn about IPE and network with interprofessional colleagues and experts in the field.

In preparation for this study, I completed a concept analysis (Bookey-Bassett, Markle-Reid, McKey & Akhtar-Danesh, 2017) to understand the concept of interprofessional collaboration in the context of chronic disease management for community-living older adults. I also completed a review of instruments to measure interprofessional collaboration for chronic disease management for community-living older adults (Bookey-Bassett, Markle-Reid, McKey, & Akhtar-Danesh, 2016). This work provided the foundation for understanding the meaning of collaborative practice in this context. Nurses have the potential to play a critical role in developing, leading, and evaluating IPE initiatives to support collaborative practice.

### **Epistemological Stance**

My research experience along with graduate studies and professional work experience have led me to value and appreciate pragmatism as a paradigm for conducting research. Pragmatism is a set of ideas initially proposed by historical figures such as John Dewey, William James, and Charles Sanders Peirce. Pragmatism combines many ideas including “what works,” allow for the use of diverse approaches, and values both subjective and objective knowledge (Creswell & Plano Clark, 2011). It is an applied research approach in which the research question is viewed as more important than either the method or the philosophical worldview underlying the method (Tashakkori & Teddlie, 2003).

### **Thesis Structure**

This thesis follows a traditional thesis format. Chapter 1 describes the issue being studied and the researcher’s philosophical approach. In Chapter 2, a review of relevant literature and research questions are presented. Chapter 3 describes the study methods including the development, implementation and evaluation of the IPE intervention. Chapter 4 reports the study findings based on the research questions. Lastly, Chapter 5 includes the discussion of the study findings, new contributions to the field, study strengths and limitations, and implications of the findings for education, practice, policy and research.

## **Chapter 2**

This chapter provides an overview of the literature related to the burden of stroke, community-based stroke rehabilitation, effectiveness of stroke-specific interprofessional teams, IPE on collaborative practice and for stroke care. A summary of the literature identifies current knowledge gaps and rationale for the current study. The chapter concludes with the proposed research questions.

### **Review of the Literature**

#### **The Burden of Stroke in Older Adults with MCC and their Family Caregivers**

The burden of stroke is experienced disproportionately by older adults who have a greater incidence and prevalence of ischemic stroke compared to younger adults (Pinter & Brainin, 2012). Current evidence indicates that older adults who have experienced a stroke are more likely to have more chronic conditions than those who have not experienced a stroke (Gallacher et al., 2014; Gruneir et al., 2016). In Canada, the average number of chronic conditions in this population ranges from 3.5 to 5 (Gruneir et al., 2016; HSF, 2017). Stroke in the presence of MCC is associated with higher mortality rates, poorer rehabilitation outcomes, and decreased use of secondary prevention, such as thrombolytic therapy, compared to those without MCC (Gruneir et al., 2016). Higher levels of comorbidity are also linked to higher utilization of stroke and non-stroke related health services (e.g., hospitalizations), resulting in increased health care costs (Gruneir et al., 2016). A recent study in Ontario found that the use of health care services is not directly related to stroke but rather for other chronic conditions (Gruneir et al., 2016).

The burden of recovering from a stroke and living with MCC extends beyond the challenges of physical recovery to other domains of life. Older adult stroke survivors with

MCC are particularly vulnerable compared to other age groups as they experience issues such as social isolation, and limited participation in leisure activities, (Ellis, 2006; Hackett, Yapa, Parag, & Anderson, 2005). Ongoing challenges for older stroke survivors with MCC may also include emotional and psychosocial consequences, such as loneliness and mental health issues (HSF, 2017; Mckevitt et al., 2011). The reported prevalence of depression in older stroke survivors ranges from 11 to 64% (Lokk & Delbari, 2010).

Additional issues for this population involve mobility problems, falls, incontinence, pain, fatigue, and memory, eating and speaking difficulties (McKevitt, et al., 2011). Furthermore, older stroke survivors with MCC frequently have poorer health-related quality of life (HRQoL), greater difficulties with self-management, higher levels of physical disability, and use of medications, and increased risk for adverse drug events and mortality compared to those without MCC (Boyd et al., 2005; Boyd & Fortin, 2011; Karatepe et al., 2008).

Family caregivers, rather than formal service providers, provide more than 80% of the care to older stroke survivors with MCC living at home in the community (Di Carlo, 2009; MacLeod, 2012; Markle-Reid, Orridge, et al., 2011; Salter et al., 2016). Coordinating appointments and travelling with stroke survivors to multiple specialists related to stroke and MCC is time consuming for caregivers. Therefore, the burden of caring for a stroke survivor or an older adult with MCC may also result in poor physical and mental health and lower quality of life among caregivers (Di Carlo; Markle-Reid, Orridge, et al., 2011; Salter et al., 2016). Stroke caregivers may also experience financial

strain and psychological stress, decreased social contact and social activity, and high levels of depression (Em et al., 2017; Salter et al., 2016).

Poor caregiver health may also result in increased use of acute care services by caregivers, including hospitalization, thereby having a negative impact on the stroke survivor's recovery and ability to remain in the community (Em et al., 2017; Salter et al., 2016; Walker et al., 2013). One RCT reported that older stroke survivors whose family caregivers had higher depression scores at discharge from a rehabilitation clinic (Zerssen Depression Scale) were more likely to be institutionalized or deceased 31 months after hospital discharge, compared to those stroke survivors whose caregivers had lower depression scores at time of discharge (Grasel, Biehler, Schmidt, & Schupp, 2005). These data highlight the need for health care providers to identify and address the needs of family caregivers as part of the stroke survivor's plan of care (Em et al., 2017; Wolff et al., 2009). Best practice guidelines recommend that the needs of both stroke survivors with MCC and their family caregivers be addressed through community-based stroke rehabilitation services (Cameron et al., 2016).

### **Community-Based Stroke Rehabilitation for Older Stroke Survivors with MCC**

About 60% of adult stroke survivors are left with some disability, and 40% require more intensive rehabilitative support in their homes in the community (HSF, 2017). As a result, ongoing rehabilitation following stroke is imperative for optimal recovery. CBSR refers to care provided in the home and community setting following inpatient acute and/or inpatient rehabilitation care (Ontario Stroke Network, 2012). CBSR is provided in a variety of settings, such as outpatient rehabilitation clinics, day hospitals, or through home and community-based services (Allen, et al., 2014; Hale,



2004). CBSR is provided by professionals such as Nurses, OTs, PTs, and/or by other community-based health and social care providers. CBSR teams vary in their composition based on geographic region and available human and financial resources (Allen et al., 2014; Fens et al., 2013). They often involve a core team of interprofessional providers, such as nurses, physiotherapists, occupational therapists and speech and language therapists, physicians, social workers, and dietitians (Clarke, 2013; Meyer et al., 2016). CBSR may also be provided by unregulated providers, such as personal support workers (PSWs) in the home care setting, and rehabilitation therapy assistants (Chouliara, Fisher, Kerr, & Walker, 2013; Clarke). In 2011-2012, 50.6% of Ontario stroke survivors received publicly-funded rehabilitation services through home care, including occupational therapy, physiotherapy, speech language pathology, and/or social work; 29% received personal support and homemaking services; and 18% received nursing services (Hall et al., 2013). Home-based CBSR interventions may be more client-driven and could facilitate caregiver engagement in the stroke survivor's rehabilitation activities (Siemonsma, et al., 2014).

Collaboration among interprofessional team members, stroke survivors and their family caregivers is an increasingly important component of CBSR and is part of Canadian best practice recommendations for stroke (Cott et al., 2007; Meyer et al., 2016). Stroke patients and older adults with MCC have personal experience in managing their own chronic conditions and should be included as active members of the interprofessional team planning their care (Cott et al., 2007; Ploeg, Markle-Reid, et al., 2014). Unregulated workers also play an essential role in the lives of home care

recipients, particularly older adults with chronic disease, and therefore should be included as part of the interprofessional team (Adair et al., 2012; MacLeod, 2012).

There are numerous definitions of collaborative practice in the literature. For providers to engage in collaborative practice, they must have a clear understanding of what it means in specific contexts (for instance, what CBSR entails specifically for older stroke survivors with MCC using home care services). For the purpose of this study, collaborative practice or interprofessional collaboration (IPC) in the context of chronic disease management for community-living older adults is defined as:

An evolving interpersonal process, involving a diverse team of health care and other providers who interdependently engage in frequent communication and shared decision-making, for the purposes of providing optimal health and social care services to community-living older adults and their families. Team composition includes older adults and their caregivers; team processes are flexible and consistently evaluated to effectively and efficiently meet client needs (Bookey-Bassett, Markle-Reid, McKey, Akhtar-Danesh, 2017, p. 79).

This definition is based on the results of a recent concept analysis, conducted by the principal investigator (PI), that revealed seven attributes of collaborative practice: (a) an evolving interpersonal process; (b) shared goals, decision-making and care planning; (c) interdependence; (d) effective and frequent interpersonal communication; (e) evaluation of team processes; (f) engaging older adults and family members in the team; and (g) diverse and flexible team members. Antecedents of collaborative practice consist of: (a) role awareness; (b) interprofessional education; (c) trusting relationships between team members; (d) the belief that collaborative practice will improve care; and (e) organizational support (Bookey-Bassett et al., 2017). The consequences of collaborative practice include: (a) redefining team composition and function; (b) improving provider knowledge and confidence about older adults with chronic disease; (c) providing

comprehensive care planning and coordination of services; (d) increasing provider job and professional satisfaction; and (e) having diverse and flexible team members (Bookey-Bassett et al., 2017).

### **Effectiveness of Stroke-Specific Interprofessional Teams for Stroke Rehabilitation**

There is accumulating evidence from systematic reviews and RCTs for the positive effect of stroke-specific interprofessional teams on mortality, dependency, institutionalization and length of hospital stay in inpatient stroke units (Fearon, Langhorne, & Early supported discharge [ESD] Trialists, 2012; Langhorne, Baylan & ESD Trialists, 2017; Teasell, Foley, Hussein, & Cotoi, 2016). Early supported discharge (ESD), which involves the use of an interprofessional team, is a form of CBSR where eligible stroke patients are discharged home early with increased support, for a limited time period ( $\leq 3$  month post-discharge). Eligibility criteria for ESD include mild to moderate disability, ability to participate in rehabilitation from the point of discharge from hospital, and medical stability (Hall et al., 2013). ESD facilitates continuity of care for clients by extending the principles of the inpatient stroke unit that emphasizes the value of organizing and coordinating stroke services through an interprofessional team (Hale, 2004; Walker et al., 2013). In some models, the team members remain linked to an inpatient stroke unit allowing for specialized stroke care as patients transition back to their homes (Brewer & Williams, 2010).

Results from multiple randomized controlled trials and systematic reviews have shown that ESD services provided by a coordinated, multi-disciplinary team of stroke specialists results in: (a) a reduction in hospital length of stay and increased likelihood of regaining independence in daily activities (Brewer & Williams, 2010; Fearon,

Langhorne, & ESD Trialists, 2012; Langhorne & Widen-Homqvist, 2007; Siemonsma et al. 2014; Walker et al., 2013); (b) improved patient satisfaction (Fearon et al., 2012); (c) improved quality of life (Allen et al., 2002; NHS, 2012; Ryan, Enderby & Rigby, 2006); (d) decreased need for long-term or institutional care (Fjaertoft, Rohweder, & Indredavik, 2011; Langhorne, Bernhardt, & Kwakkel, 2011); (e) increased physical health and independence and improved community reintegration for stroke survivors (Bautz-Holter, Sveen, Rygh, Rodgers, & Wyller, 2002; Pessah-Rasmussen & Wendel, 2009); (f) decreased caregiver strain (Lincoln, Walker, Dixon, & Knights, 2004; Teng, et al., 2003); and (g) improved chances of living in their home for up to five years after a stroke compared to usual care (Fjaertoft et al.). A consensus document on stroke ESD concluded that teams that planned and coordinated discharge from hospital to home and provided rehabilitation support at home were the most effective (Fisher et al., 2011).

Canadian Best Practice Guidelines for Stroke Care state that individuals “should continue to have access to specialized stroke services after leaving the hospital” and that “outpatient and/or community-based rehabilitation services should be available and provided by a specialized interprofessional team when needed by patients” (Dawson et al., 2013, p.33). Having this specialized knowledge to deal with stroke patients and their family caregivers is critical for successful stroke rehabilitation in the community (Chouliara, Fisher, Kerr, & Walker, 2013). The benefits of a specialized interprofessional approach include more patient-centred decision-making, decreased fragmentation of care, increased staff satisfaction, and more effective use of resources (Clarke, 2013).

Optimal recovery for stroke survivors requires the delivery of coordinated and specialized rehabilitation provided by an interprofessional team several months after the

stroke (Walker et al., 2013). For some stroke survivors, it takes up to a full year to transition back to previous roles and reintegrate into the community (Dawson et al., 2013). A limitation of the ESD interventions is that they are limited to three months post-stroke. Little is known about the effectiveness of longer term interprofessional stroke rehabilitation interventions in the home care setting (beyond 3 months). To this author's knowledge, only three Canadian studies have examined the effectiveness of interprofessional team-based CBSR interventions (> 3 months in duration) in the home care setting (Allen et al. 2014; Allen et al., 2018; Markle-Reid, Orridge, et al., 2011). Markle-Reid et al., (2011) conducted a pragmatic RCT in Ontario that examined the effectiveness of a new six-month interprofessional stroke rehabilitation team intervention compared to usual home care services for 101 community-living stroke survivors using home care services. Compared with the usual care group, stroke survivors receiving the IP team approach had greater improvements in physical and social functioning. These improvements were achieved at no additional cost, from a societal perspective (Markle-Reid, Orridge, et al., 2011).

Allen et al., (2014) conducted a retrospective cohort study using a repeated measures design that examined the effectiveness of a CBSR team intervention involving 794 stroke survivors on stroke survivors' psychosocial and functional status and informal (family) caregiver outcomes (Allen et al., 2014). The intervention was effective in improving functional independence, reintegration to normal living, caregiver outcomes, and reducing depression, and anxiety at discharge from the program. The discharge time point varied depending on the client's length of service. In addition, significant gains were observed in strength, communication, activities of daily living, social participation,

memory, and the physical domains of the Stroke Impact Scale. All these improvements were maintained at the six-month follow-up. Emerging models of CBSR suggest that key elements of successful CBSR include: stroke expertise in care providers, consistent and timely communication, community partnerships, and a patient-centred focus (Allen, 2016).

Allen et al. (2018) used a one-year prospective design to evaluate the cost-effectiveness of a CBSR program compared with a usual care (no formal rehabilitative care) cohort in Ontario, Canada. Results showed that providing home-based rehabilitation through the CBSR program is both less costly and more effective when compared to usual care. Stroke survivors in this program demonstrated improved functional gains, better health-related quality of life, and decreased utilization of health care resources. These single studies suggest that CBSR delivered by an interprofessional team (beyond three months), is cost-effective and has the potential to improve selected longer-term outcomes for both stroke survivors (e.g., functional independence) and their caregivers (e.g., caregiver burden).

Successfully engaging in collaborative practice for older adults living with stroke and MCC requires regular input from multiple community and primary care providers, and specialists from different disciplines, services, and sectors to plan and arrange care to address all the needs of this population (Mitchell, Brown, Erikessen & Tieman, 2008). However, health care and other providers' ability to engage in collaborative practice is dependent upon their knowledge, confidence, and competence for collaborative practice (Canadian Interprofessional Health Collaborative [CIHC], 2010).

### **Effectiveness of Interprofessional Education on Collaborative Practice**

Numerous international reports, professional practice guidelines, and grey literature acknowledge the accumulating evidence for the effectiveness of IPE in supporting collaborative practice (CAIPE, 2016; CIHC, 2010; Institute of Medicine [IOM], 2015; World Health Organization [WHO], 2016). Since the mid-2000's, IPE has been considered a feasible approach to develop competencies for collaborative practice, with the goal of enhancing the safety and quality of patient care, improving population health, and decreasing the cost of health care services (Barr, 2013; CIHC, 2010; IOM, 2015). Competencies for collaborative practice refer to what individuals know, or can do, in terms of knowledge, skills and attitude. Capability for collaborative practice goes beyond competence and is described as the extent to which individuals can adapt to change, generate new knowledge, and continue to improve their performance (Fraser & Greenhalgh, 2001). It is recommended that IPE begin early in undergraduate education programs and continue throughout the post-licensure period in practice-based settings (Barr, 2009; IOM, 2015; Nelson, Tassone, & Hodges, 2014).

There is increasing evidence that suggests that IPE post licensure is an important strategy for collaborative practice among working health professionals (D'Amour & Oandasan, 2005; Kim, Lowe, Srinivasam, Gairy, & Sinclair, 2011; Nelson, Tassone, et al., 2014). IPE differs from other forms of continuing education in that knowledge is generally created through interactions with others and involves unique collaborative skills and attitudes (Sargeant, 2009). However, health care professionals have traditionally been trained in practice settings using siloed approaches, where each profession learns in

isolation from one another, and receives little information on how to work together collaboratively (Canadian Health Services Research Foundation, 2006).

Undergraduate academic programs vary in the extent to which IPE is incorporated into health professionals' curricula (Frenk et al., 2010; Nelson, Tassone, et al., 2014; Ploeg et al., 2017). Many health care professionals enter practice with limited, if any, training in interprofessional care and coordination (Barr, 2002; Smith-Carrier et al., 2015). Likewise, collaborative practice and teamwork have not typically been incorporated into health professionals' formal education or continuing professional development programs. Consequently, many practising healthcare providers lack the knowledge and skills to function effectively as a team member (Kraft, Blomberg, & Hedman, 2014; Nelson, Bainbridge, et al., 2014; Sargeant et al., 2008).

These gaps in education and practice have been underscored by several recent reports that call for an increase in both pre- and post-licensure IPE that supports collaborative practice and reflects the changing nature of required competencies for collaborative practice (CIHC, 2010; Nelson, Bainbridge, et al., 2014; Ploeg et al., 2017). The overall recommendation from these reports is that academic institutions, professional associations, and health care organizations need to create opportunities to support widespread engagement in lifelong learning to build and enhance collaborative care competencies.

In addition to embedding IPE in curricula, experts also recommend that continuing IPE should occur where teams practice, incorporating a range of principles and theories of interprofessionalism, adult and social learning, and drawing on multiple strategies, such as in-class training, reflective practice, and experiential learning



(Hammick, Freeth, Koppel, Reeves, & Barr, 2007; Kim et al., 2011; MacDonald, Stodel, Thompson, & Casimiro, 2009). Tailoring IPE interventions to specific patient populations (e.g., older adults living with chronic conditions such as diabetes, stroke, arthritis), in acute and primary care settings has also been shown to foster the development of knowledge, skills and attitudes required for effective collaborative practice (Bain, Kennedy, Archibald, LePage, & Thorne, 2014; McKellar et al., 2011; Sargeant et al.). Therefore, post-licensure programs should be context-specific, offered to HCP teams by the organizations in which the teams work, and based on provider and client needs (Ploeg et al., 2017).

There is accumulating evidence from systematic reviews for the positive effects of IPE on collaborative practice (Brashers et al. 2015; Pauzes & Reeves, 2010; Reeves et al., 2013; Sockalingham, Tam, Hawa, Pollex, & Hodges, 2014). These reviews highlight the strengths and limitations of the existing literature and identify knowledge gaps in the field. The results of the reviews are summarized below.

Pauzes and Reeves (2010) conducted a systematic review examining the effects of IPE on learner outcomes related to collaborative practice (e.g., improved understanding of professional roles) among mental health providers delivering adult mental health care. This review included 16 studies (before and after, longitudinal before and after, and retrospective cross sectional) conducted in both acute and community sectors. Educational outcomes reported in each paper were classified according to Kirkpatrick's (1967) model. Five of the 16 studies reported that IPE resulted in positive learner outcomes related to collaborative practice including: increased confidence in collaborative skills, increased role clarity, improved shared-decision making, and

improved collaborative behaviours. Four of these five studies were conducted in a community setting.

In 2013, Reeves et al. updated an earlier systematic review (Reeves et al., 2008) on the effectiveness of IPE interventions on professional practice (including collaborative practice) and healthcare outcomes in diabetes care, acute care and mental health settings. This systematic review included a total of 15 studies (eight RCTs, five controlled before and after studies, and two interrupted time series study designs). Three of the five controlled before and after studies that included collaborative practice as an outcome reported positive outcomes related to collaborative practice behaviours, including: (a) improvement in quality of observed team behaviours for emergency room staff (Morey, 2002); (b) increase in the proportion of pre-case briefings and information sharing about clients among operating room staff members (Weaver, 2010); and (c) higher scores on teamwork competencies for mental health staff (Young, 2005). The overall conclusion from this review was that further research is warranted that identifies the key elements of IPE that contribute to these positive effects.

Expanding on Reeves et al. (2013) review, Brashers et al. (2015) conducted a systematic review involving 39 studies examining the impact of IPE on collaborative practice and/or patient outcomes in acute care, primary care, public health, nursing homes, and Veterans' health institutions. Nine of these 39 studies included collaborative practice as an outcome. Eight (RCTs, CBAs, and before and after studies) out of these nine studies reported positive outcomes related to collaborative practice behaviours, including improvements in attitudes towards teamwork (Morey, 2002; Weaver, 2010); teamwork competencies (Nurok et al., 2011; Patterson et al., 2013; Young, 2005);

communication (Brown et al., 1999; Helitzer et al., 2011); information sharing (Nurok et al., 2011); and shared-decision making skills (Bliss et al., 2012).

From this review, Brashers et al. (2015) identified the following characteristics of effective IPE interventions: (a) high learner participation rates or self-selection to the intervention group; (b) combination of IPE and goal-specific education (teamwork plus task work); (c) combination of IPE and other changes in practice processes (e.g., adherence to best practices, use of checklists); (d) use of simulation and videotaping; and (e) repetition of IPE interventions with regular feedback to learners.

Sockalingham et al. (2014) conducted a systematic review examining the effectiveness of IPE on learner outcomes (including collaborative practice) for delirium care. This review included 10 studies (cohort, prospective case control, cross-sectional and quasi-experimental) conducted in geriatric inpatient, emergency, medical care, orthopedic, and palliative care settings. Six of the 10 studies focused on the effect of IPE on learner behaviours in practice. Two of these six studies (one before and after, one repeated measures design) reported positive outcomes of IPE on collaborative practice in palliative care, including enhanced team communication, coordination and conflict domains as measured by the Interprofessional Team Performance Scale (Brajtman et al., 2008) and perceived improvement in six categories of interprofessional competence (e.g. communication, collaboration, roles and responsibilities, collaborative patient/family-centred care, conflict management and resolution, and team functioning) as measured by the Interprofessional Collaborative Competencies Attainment Survey (Brajtman et al., 2012).

In summary, there is a limited but growing body of evidence for the positive effect of IPE on collaborative practice across multiple practice settings. However, most of the studies in these reviews were conducted in acute care and inpatient settings; only a few studies were conducted in community-based settings, and no studies were conducted in home care. The studies included in these systematic reviews have several methodological limitations including: (a) weak study designs, (b) small sample sizes, (c) lack of use of reliable and valid measures of collaborative practice; (d) limited description of theory; (e) partial descriptions of the IPE interventions; (f) little reporting of bias; (g) minimal discussion of study limitations; and (h) little evidence of preliminary studies to improve IPE interventions and evaluation strategies. In addition the heterogeneity of interventions and outcome measures limits the comparability of the studies.

Most of the studies evaluating the effect of IPE on collaborative practice focused on the immediate outcomes of IPE (e.g., improved learner attitudes and knowledge related to collaborative practice) with a lack of attention to the longer-term impact of IPE on collaborative practice. None of the reviews or the studies included in these reviews examined the effect of IPE on collaborative practice in the home care setting for CBSR teams.

## **Effectiveness of Interprofessional Education on Collaborative Practice for Stroke Care**

### **Search Strategy**

The electronic databases CINAHL, MedLine, AgeLine, PsychInfo, and Cochrane Database of Systematic Reviews were searched combining search terms as follows: “interprofessional,” OR “interdisciplinary,” OR “multidisciplinary” AND “education,”

OR “learning,” OR “training,” AND “interprofessional collaboration” OR “collaborative practice,” AND “stroke rehabilitation.” In addition to the database searches, two additional electronic searches were conducted in the Journal of Interprofessional Care and Topics in Stroke Rehabilitation to assess for any further papers not captured in the database searches.

To meet the inclusion criteria, studies could be of any design if they examined the effectiveness or perceived impact of an IPE intervention on collaborative practice for stroke care in any setting, not limited to older adults. Studies had to be published in English between 2000 and 2017. The IPE interventions had to include content on competencies for collaborative practice (e.g. interprofessional communication, role clarification, team functioning) as defined by the CIHC framework (2010), and involve at least two or more health care professionals or students from different health professions as part of the intervention. The studies also needed to include collaborative practice as an outcome as defined previously. Data were extracted using a standardized table including author citation, study purpose, setting, design, sample, description of the IPE intervention/program, outcomes and measures, results, and conclusions (Appendix A).

### **Quality Assessment of the Literature**

A modified version of the “Critical Appraisal Checklist for an Article on an Educational Intervention” (University of Glasgow) and the work of Morrison, Sullivan, Murray, and Jolly, (1999) and Olson and Bakken (2013) was used to assess the methodological quality of the included literature (Appendix B). The checklist consisted of a total of 15 questions; two questions were added by the researcher and one question was modified to assess additional areas of importance for educational interventions. The added questions were: (1) “was the development of the intervention described?” and (2)

“was the intervention implemented as planned? These were added to allow for assessment of intervention fidelity, the degree to which the intervention is implemented as planned (Sidani & Braden, 2011), as high-fidelity interventions are more likely to produce the desired outcomes (Sidani & Braden). In addition, the wording of question 14 was modified slightly from the original version “was the setting sufficiently similar to your own and/or representative of real life” to “are the results applicable to my setting?” Each paper was then critically appraised using the checklist. Responses for items 1 to 11 included “yes,” “no,” or “can’t tell.” Numerical scores were not assigned; instead narrative comments were provided for each question in the checklist, a practice consistent with others who have used this tool (Morrison et al., 1999). For items 12 to 15, narrative comments were made to describe respective aspects of each study. The results of the quality appraisal for each study are shown in Appendix C. This information was used to gain an understanding of the methodological quality of the included literature and to inform the design and key components of an intervention to address the identified gaps.

## **Results**

The titles and abstracts of 100 papers were reviewed for relevance, and 16 papers were selected for full text review. Following removal of duplicates, only three studies were identified that examined the effectiveness or perceived impact of IPE interventions on collaborative practice for stroke care.

### **Description of Included Literature**

The three papers evaluating the effectiveness of IPE interventions on collaborative practice for stroke care included a quantitative post-intervention design (Frisby et al., 2015), a one-group before and after study (Selby et al., 2011) and a

qualitative descriptive study (McKellar et al., 2011). The studies were conducted in Canada (n =1) and the United Kingdom (n=2).

The IPE interventions were implemented in different practice settings, such as acute inpatient stroke care units, stroke rehabilitation units, community stroke rehabilitation centres. The interventions targeted different groups, including pre-licensure health care students in different health care programs (Frisby et al., 2015; Selby et al., 2011) and practicing health care professionals (McKellar et al., 2011).

Frisby et al. (2015) evaluated the effectiveness of a practice-based IPE seminar on collaborative practice for health care students (medical, nursing, occupational therapy, physical therapy, speech language pathology, dietetics, and paramedicine students in an inpatient stroke unit in the United Kingdom. A total of 67 students attended nine seminars over a two-year period. Each student group attended a half-day seminar, which involved content relating to: (a) discipline specific care for stroke patients; (b) interprofessional perspectives for stroke care; (c) each other's roles and responsibilities; and (d) effective communication between disciplines, and a discussion about how these areas related to collaborative practice.

The IPE intervention was evaluated using a quantitative post-intervention design. A survey was administered to health care student participants immediately after the seminar that evaluated the impact of the IPE intervention on identified interprofessional competency domains, including role clarification and interprofessional communication. Quantitative survey responses indicated that IPE enabled students to: (a) gain greater awareness of other health care disciplines' roles and responsibilities; (b) gain insight into the importance of good communication between health care professionals; and (c) being

in a mixed-discipline group enhanced their learning in the seminar. Deductive thematic analysis of participants' comments revealed three broad themes: (a) the roles and responsibilities of varying professions; (b) shared functions amongst differing disciplines; and (c) effective communication. Most of the responses were related to gaining a greater understanding of each other's roles in the care of the patient and the importance of effective teamworking.

Selby et al. (2011) used a one-group before and after study and a qualitative descriptive approach to evaluate the effectiveness of an IPE intervention on collaborative practice for 12 second year medicine, nursing, pharmacy, and physiotherapy students caring for patients with stroke in the United Kingdom. The intervention involved students examining and exploring their views of their own professions and those of other members of the interprofessional team as a necessary strategy to support effective communication and collaborative practice among team members. The learning activities focused on students learning about how their roles and responsibilities and those of other team members overlapped, conflicted, and complemented one another. The effectiveness of the intervention was evaluated using a modified version of the Readiness for Interprofessional Learning Scale (RIPLS) by McFayden and colleagues (2005) and an additional five items related to the objectives of the learning session. A focus group was also conducted to evaluate the perceived impact of the intervention. The intervention was effective in improving students' opinions regarding teamwork and collaborative practice and improving understanding of each other's roles on the team. Focus group findings revealed students enjoyed interacting with and learning with and from other professions.



Using a qualitative descriptive approach, McKellar et al. (2011) explored the perceived impact and the barriers and facilitators to implementing a two-day IPE intervention on collaborative practice for 63 health care providers in acute stroke care units, stroke rehabilitation units, and community-based organizations in Canada (Cheung et al., 2012). Participants were health professionals representing various professions including nursing, occupational therapy, physiotherapy, speech language pathology, pharmacy, social work, dietetics, and recreational therapy. Informed by adult learning and IPE theories (Sargeant, 2009), the IPE intervention consisted of: (a) education related to competencies for collaborative practice; (b) foundational concepts of community re-engagement and its relationship to collaborative practice; and (c) knowledge and competencies for interprofessional goal-setting. The learning activities included reflection, application of new knowledge to the care of people living with stroke, and experiential learning opportunities in which participants learned about, from and with one another.

Semi-structured telephone interviews were conducted with 23 participants, at five months post-intervention, to assess the perceived impact of the intervention on practice change, achieving personal goals, applying the community re-engagement framework, and collaborative practice skills. Participants reported positive practice changes, including enhanced communication and collaboration, better role understanding, team functioning, increased knowledge regarding community re-engagement, increased confidence, and greater understanding of the holistic and complex needs of persons living with stroke. Participants indicated that the intervention led to increased focus on improved collaboration among team members. Participants recommended that all team

members within and across organizations be trained in these areas to optimize care provision.

Participants also indicated that following the intervention, they had an increased understanding of the competencies required for collaborative practice, and reported an improvement in their ability to work collaboratively within and across settings to support community re-engagement for stroke patients. While this study included providers working in the community setting, the impact of the intervention on this group was not reported separately. However, despite the many perceived positive practice changes, organizational, professional, individual and workplace constraints limited the extent to which health care providers could change their practice. Time, heavy caseloads, and staff attrition were cited as reasons as to why collaboration could not always be effectively implemented. In this study, leadership support to establish processes fostering collaboration and problem-solving were deemed critical to implementation.

### **Summary of Literature**

In summary, there is a dearth of literature examining the effectiveness of IPE on collaborative practice for stroke care. The existing studies in this area used weak study designs, had small sample sizes, and lacked the use of reliable and valid measures. Moreover, limited information was provided regarding the study design or analysis.

The three included papers were observational studies of IPE initiatives implemented across a variety of stroke settings. Only one of the studies evaluated the effectiveness of an IPE intervention among practicing health professionals. Although these studies reported outcomes of IPE on different aspects of collaborative practice, clear definitions and measures of what is meant by collaborative practice were lacking.

The nature of the IPE interventions varied in terms of content, duration, format, delivery, and outcomes, thus, limiting their comparability. Limited information was provided regarding the content and structure of the IPE intervention, such as how they were developed, their theoretical base, the specific components of the intervention, or the qualifications of those delivering the intervention.

Limited information was also provided about the feasibility and acceptability of implementing the IPE interventions. Only one study (McKellar et al., 2011) referred to barriers and facilitators to implementing the IPE intervention in routine care, and no studies discussed the need to adapt the IPE interventions. Information about intervention fidelity, the degree to which the intervention was implemented as planned (Sidani & Braden, 2011) was also missing. Furthermore, only one study measured changes in team collaborative practice over time (Selby et al., 2011).

All the included studies involved bringing students or health care providers together to participate in the various IPE programs. Thus, time, space, and a positive culture are necessary to support the implementation of IPE activities regardless of the setting. Study participants represented a variety of disciplines, including RNs, OTs, PTs, social workers, and speech language therapists. None of the included studies involved unregulated providers such as health care aides or personal support workers (PSW).

Although these studies provide initial evidence for the positive effect of IPE on collaborative practice for health care professionals and students working in stroke care, the intervention was aimed at individual providers rather than on an established IP team. None of the studies involved implementing IPE interventions to support collaborative practice in CBSR teams in home care for older stroke survivors living with MCC.

Overall, these data highlight the need to develop new IPE strategies to develop competencies for collaborative practice among home care providers that are responsive to the realities of this unique work environment. The present study addresses these gaps in knowledge and service delivery by developing, implementing, and evaluating a new theory-based IPE intervention to support collaborative practice in home care for providers delivering CBSR to older adult stroke survivors with MCC and their family caregivers.

## **Research Questions**

### **Primary Research Question**

1. What is the feasibility and acceptability of implementing an IPE intervention to support collaborative practice in CBSR teams tasked with caring for older adult stroke survivors with MCC using home care services, and their family caregivers?

### **Secondary Research Questions**

2. What is the feasibility of the study methods used to evaluate the IPE intervention (recruitment/retention rates and procedures, eligibility criteria, data collection and analysis methods)?

3. What is the preliminary effectiveness of the IPE intervention on the level of collaborative practice of home care providers?

4. What is the perceived impact of the IPE intervention on collaborative practice from the perspective of home care providers?

5. How is the IPE intervention adapted, implemented, and embedded into real-world practice?

6. What are the advantages and disadvantages of using the Collaborative Practice Assessment Tool (CPAT) and the Team Climate Inventory (TCI) instruments to assess collaborative practice?

7. What is required to integrate and sustain the IPE intervention from the perspective of home and community care providers?

Consistent with the pragmatism paradigm, a mixed-methods approach was chosen in which both qualitative and quantitative data were collected to answer the research questions (Creswell & Plano Clark, 2011). The methods are described in further detail in Chapter 3.

## **Chapter Three**

### **Methods**

This chapter describes the study design, setting, development of the intervention, conceptual frameworks, data collection and analyses procedures, and ethical considerations.

#### **Study Design**

This feasibility study involved the use of a mixed-methods approach consisting of both a qualitative descriptive (Jiggins Colorafi & Evans, 2016; Sandelowski et al., 2010) and a quantitative (one-group repeated measures design), to examine the feasibility and acceptability of a new IPE intervention, and to explore its effects on collaborative practice among home care providers. A feasibility study is appropriate when investigating a new and innovative intervention for which little information existed on the feasibility of the intervention and the ability to carry out a large-scale trial (Lancaster, 2015; Sidani & Braden, 2011). In feasibility studies, qualitative and quantitative data are collected to obtain a more complete understanding of aspects of the intervention that can be implemented as designed, difficulties or issues with implementation, and modifications that are necessary to enhance the acceptability of the intervention to the target population and to facilitate its delivery (Sidani & Braden, 2011). Collecting different but complementary data on the same topic allows for better understanding of the research problem (Cresswell & Plano Clark, 2011; Morse, 1991).

Most of the research questions were exploratory in nature and therefore, the qualitative component was given priority (Creswell & Plano Clark, 2011). A qualitative descriptive approach was used as it is the best approach to answer the research questions in that it provides a rich, straightforward description of participants' perceptions and

experiences with an intervention (Jiggins Colarafi & Evans, 2016; Sandelowski, 2000). Qualitative and quantitative data were collected concurrently and analysed separately to address the research questions. Data sources and methods were then triangulated by comparing qualitative and quantitative findings for each research question to validate study results (Creswell & Plano Clark, 2011; Polit & Beck, 2012).

### **Participants and Setting**

This feasibility study was embedded in a multi-site, pragmatic randomized controlled trial (RCT), the aim of which was to evaluate the effects and costs of McMaster University's ACHRU-CPP for older stroke survivors with MCC using home care services, and their family caregivers (<https://achru.mcmaster.ca>). The overall goal of the ACHRU-CPP, a six-month community navigation and rehabilitation intervention, was to promote community reintegration, enhance quality of life, prevent subsequent strokes, and reduce the onset or worsening of other chronic health conditions. The ACHRU-CPP intervention was offered in addition to usual home care.

The present IPE study was conducted between January and August 2016 in two branches of the Central East Community Care Access Centre (CECCAC) in Ontario. At the time of writing, the CECCAC covered a large rural and urban geographic area northeast of Toronto serving over 1.7 million residents. In 2015-2016, the CECCAC served over 86,000 unique patients, with an average of 38,619 every day. Services were provided to clients of all ages and included outpatient care, in-home services, palliative care and diabetes care (CECCAC Annual Report, 2016). The prevalence of stroke in this region for 2015-2016 was 1.3 cases per 1000 population.

Ontario CCACs provide publicly-funded home care using a contractual model of service delivery, wherein the CCAC contracts out home care services to agencies that provide care to clients (Ontario Association of Community Care Access Centres [OACCAC], 2015). In Ontario, LHINs are responsible for planning, integrating and funding local health care, including the CCACs. There were 14 Community Care Access Centres (CCACs) in Ontario. LHINs provided funding to hospitals, long-term care facilities, CCACs and others through formal legal agreements that detailed the terms and conditions under which services were to be provided (OACCAC, 2015). The CECCAC is part of the Central East Local Health Integration Network (LHIN) that identified vascular disease, (e.g., stroke) as a priority for service improvement (Hall et al., 2017).

CCACs are local agencies that provide information and help the public access government-funded home and community services and long-term care homes. CCAC staff collaborate with physicians, hospital teams, and other health care providers to improve access and coordination of services for seniors, people with disabilities, and those who needed health care services, to help them live independently in their own homes, in supportive housing, or in long-term care homes. For instance, staff provided information and coordinated professional, personal support and homemaking services for people (e.g., older adults) living in their own homes. CCACs also coordinated access to contracted services such as nursing, physiotherapy, occupational therapy, speech-language therapy, dietitian services, pharmacy services, diagnostic and laboratory services, respiratory therapy, social work, social service work, personal support and homemaking. Service coordination was performed by a CCAC care coordinator/case manager, who determined the eligibility and priority for home care services, and the



amount and type of home care service required, based on established criteria (Central Local Health Integrated Network Website, 2018). Care coordinators are regulated health professionals such as Registered Nurses (RNs), Physiotherapists (PTs), Occupational therapists (OTs) or social workers (SWs), whose roles include assessing, planning, coordinating, and implementing care plans that reflect client-centered needs and goals (Central Local Health Integrated Network Website, 2018).

### **The ACHRUCPP Intervention**

The ACHRUCPP is a six-month intervention delivered by an interprofessional team of home care providers (Community Care Access Centre [CCAC] care coordinator, RN, PT, OT, Personal Support Worker [PSW]) trained in stroke rehabilitation, collaborative practice, and the management of MCC, who provided; (a) care coordination and system navigation (Egan, Anderson, & McTaggart, 2010), (b) monthly in-home visits, and (c) monthly case conferences. The in-home visits and monthly case conferences involved the following key components that addressed gaps in the delivery of stroke rehabilitation in home care: (a) care coordination and system navigation, (b) strengths-based practice, (c) holistic care with a focus on health promotion and prevention of recurrent strokes, (d) engagement of stroke survivors and their family caregivers, and (e) collaborative practice (Heart & Stroke Foundation of Ontario, 2014). ACHRUCPP researchers met monthly with home care providers to monitor ongoing study progress (e.g., recruitment, feasibility, implementation challenges). Appendix D provides a comparison of the ACHRUCPP and IPE interventions.

The CECCAC, along with two provider agencies (Closing the Gap and Paramed) who had contractual arrangements with the CECCAC, provided the ACHRUCPP

intervention. Paramed is one of Canada's largest home health care providers employing over 6,000 professional and home support staff delivering services (e.g., homemaking, nursing, therapy, personal support) to thousands of people each day. Closing the Gap, a home health provider, employs hundreds of healthcare providers and offers services in homes, schools, workplaces, long-term care homes, hospitals and clinics across Ontario and Nova Scotia. It is the largest interdisciplinary service provider in Ontario.

Study participants were home care providers that met the following criteria: (a) were employed by the home care agencies involved in providing the ACHRUCPP stroke intervention in the larger trial (CECCAC, Paramed, Closing the Gap) and (b) included regulated providers (RNs, OTs, PTs, CCAC care coordinator), unregulated providers, (PSWs), and their supervisors. The supervisors were included in the IPE intervention as they were involved in supporting the day-to-day work of the team and attended the monthly case conferences.

Participants were assigned to newly created teams to deliver the ACHRUCPP intervention. This was different from the current delivery of CBSR in home care in that stroke rehabilitation was not provided by a stroke-specific interprofessional team. Table 1 provides an overview of the ACHRUCPP intervention compared with usual home care services.

Table 1

*ACHRU-CPP Intervention Team Practice versus Usual Practice*

Characteristic	Intervention Team	Usual Home Care Services at CECCAC
Home Care Service Providers	Four dedicated teams of home care service providers with specialized training in stroke rehabilitation. Each team consisted of a CCAC Care Coordinator, registered nurse, occupational therapist, physiotherapist, three PSWs, and a PSW supervisor) Teams employed by the same agency	Providers do not work in dedicated teams with stroke-specific expertise Providers often work for different agencies
Regular Interprofessional Team Meetings	Teams met in-person for monthly case conferencing as part of ACHRU-CPP stroke intervention	Interprofessional team meetings are not a part of usual practice
Information sharing, communication, and collaboration among team members	Direct sharing of information and documentation among team members during case conferences, by phone and through email	Limited sharing of information and documentation across disciplines Limited direct communication among providers. Providers communicate to care coordinator who conveys information to the care team and coordinates care.
Interprofessional Education	Participants attended a standardized IPE training session on collaborative practice, care coordinators training on leading interprofessional teams, team reflection (CPRH), and evaluation of collaborative practice	IPE is not a standard part of usual practice at CECCAC Regular evaluation of team practices (e.g., collaboration, communication) is not known.

**Development of the Interprofessional Education Intervention**

The IPE intervention was developed by the Principal Investigator (PI); an experienced nurse educator with post-graduate training and experience in designing and delivering IPE. The content and delivery of the intervention were informed by theoretical

and empirical evidence on IPE and collaborative practice. The intervention components were based on the W(e) Learn Framework for Interprofessional Education (MacDonald et al., 2009), the competencies for collaborative practice identified in the CIHC (2010) framework, and the literature on effective components of IPE and strategies for delivery of IPE.

Experts in the field of IPE have suggested that the design and evaluation of IPE programs should be informed by theory to increase their effectiveness (Barr, 2013; CAIPE, 2016; Reeves & Hean, 2013). Two broad families of learning theories, specifically behaviourism and constructivism, often underpin the design or evaluation of IPE initiatives (Hean, Craddock, O’Halloran, 2009). Behaviourists focus on the outcomes of learning which are expressed as behaviour (e.g., collaborative practice competencies), whereas constructivists focus on the process of learning (Hean et al.). Both theoretical perspectives were considered in the design of the IPE intervention to support collaborative practice, and multiple learning strategies were incorporated to enhance the learning process.

Accordingly, two frameworks were used to guide the development, implementation and evaluation of the IPE intervention: (1) The W(e) Learn Framework for Interprofessional Education (MacDonald, Stodel, Thompson & Casimiro, 2009) (Appendix E), and (2) the National Interprofessional Competency Framework from the Canadian Interprofessional Health Collaborative (CIHC, 2010) (Appendix F). W(e)Learn is based on the knowledge and expertise of health care experts and key elements of D’Amour and Oandasan’s (2005) IPE framework, and integrates best practices for IPE from the literature. These frameworks complement each other in that they both describe

IPE as a learning process, and a prerequisite for acquiring the knowledge, skills and attitudes for collaborative practice. The W(e)Learn framework was used to inform the structure, content, learning activities, and evaluation of the IPE intervention. The CIHC Framework was used to supplement the W(e)Learn framework to provide information on the competencies necessary for collaborative practice. For example, the CIHC competencies for collaborative practice (role clarification, evaluation of team functioning, conflict resolution, collaborative leadership), were embedded in the content of the initial training session for all participants, and the separate training session provided to care coordinators (See Appendix G). Both frameworks are described in further detail in the next section.

**The W(e) Learn Framework for Interprofessional Education.** The W(e) Learn Framework was created as a quality standard to assist educators in designing, developing, delivering, and evaluating online IPE programs (MacDonald et al., 2009). The framework is appropriate for online or in-person IPE programs (MacDonald et al., 2009). W(e) Learn offers an emergent design process allowing for continual evaluation of the design, development and delivery of IPE, so it can be adapted and improved as necessary for specific learners.

W(e)Learn is based on interprofessionalism and socioconstructivist theories of learning. Interprofessionalism is described as a set of beliefs and values that combine the knowledge and skills of team members from different health care disciplines, as well as the patient and other relevant stakeholders, to establish shared goals and plans of care (Howe, A., Billingham, K., & Walters, C., 2002). Continuous learning through communication, cooperation and consensus between team members is the guiding

principle (MacDonald et al., 2009). The framework proposes that IPE involves developing competencies in knowledge, skills and attitudes for collaborative practice to effect change in the workplace while incorporating the principles of interprofessionalism.

W(e)Learn embraces a socioconstructivist perspective where shared meaning and understanding of collaborative practice is seen as being generated through interacting and learning with others. Learning, therefore, is considered: (a) a process of meaning making, not knowledge transmission; (b) an active dialogue rather than a passive activity; and (c) a process that occurs through social interactions with others (MacDonald et al., 2009).

The W(e)Learn framework has been used to design and evaluate IPE programs for practicing health care professionals in a variety of clinical settings, including acute care hospitals, rehabilitation settings, and community care centres (Bain et al., 2014; Bajnok, Puddester, MacDonald, Archibald & Kuhl, 2012).

W(e)Learn includes four critical dimensions of IPE: structure, content, media and service which, in turn, elicits four levels of outcomes. The goal is organizational change as it relates to interprofessional practice and improved patient care (MacDonald et al., 2009). These dimensions were used as a template to guide the development of a multi-component IPE intervention. Appendix G provides a summary of how the framework was applied to the different components of the IPE intervention.

**Structure.** When designing an IPE program, W(e) Learn emphasizes that educators should first determine the structure of the learning event. Aspects to be considered include learner and context analysis (e.g., pre-licensure students or practicing health care providers in what setting), ethics, facilitation strategies, methods of learner assessment, pedagogical strategies, interactivity, communities of practice, and reusability

of the learning resource. In this study, the IPE intervention was developed and tailored to support collaborative practice among the teams involved in delivering the ACHRUCPP intervention. The IPE intervention supplemented the other training that was provided to the teams on evidence-based strategies for delivery of CBSR, strengths-based approaches to care, engaging and supporting family caregivers, and providing holistic care.

**Content.** Within W(e)Learn, there are four components related to content to be considered: a) content should be authentic, b) inclusive of the learners' level of understanding, c) aligned with professional interests and work-related requirements, and d) reflect issues relevant to health care professionals' clinical contexts. In this study, participants were encouraged to share their clinical experiences during the training session to ensure the content was relevant to the delivery of CBSR. The W(e) Learn framework also emphasizes that content must be grounded in accessible and validated empirical research that aligns with the theories, practices and skills being presented. Content should reflect not only the needs of learners within health care environments, but also those of the patients and families whom health care professionals serve (e.g. home care providers, older stroke survivors with MCC and family caregivers). Finally, content should also focus on competencies for effective collaborative practice as described by the CIHC framework (e.g., role clarification, team development and functioning, client-centred care, collaborative leadership, interprofessional communication, and interprofessional conflict resolution) (CIHC, 2010). In this study, these competencies were discussed both during the initial IPE training session on collaborative practice and in the training for care coordinators. Handouts describing the competencies were included in the training materials. Learning about other professionals' roles and the unique

contributions each individual professional brings to the specific context of caring for older stroke survivors with MCC is, after all, an important aspect of IPE.

**Media.** Media refers to how the education program is delivered, and includes four elements: delivery mode, usability, technology, and eLearning skills. Educators must consider these elements when designing IPE initiatives to ensure technology is used appropriately, is based on learners' abilities, and adds value to the learning experience. Inappropriate use of technology or technical barriers may limit access to IPE and integral learning activities. Media in this study consisted of standardized training manuals, power point presentations, small and large group learning activities, and videos.

**Service.** Service includes four elements: organization, technical support, accessibility, and responsiveness. For workplace learners, organizations need to support learning and recognize the achievements of staff. In health care organizations, this support may include release time to attend learning events along with financial support. In this study funding for release time so that participants could attend the training and the team meetings was provided by the larger trial.

As part of service, facilitators should respond to learners' needs and questions in a timely manner, regardless of whether the program is offered face-to-face or online. In this study, participant questions about collaborative practice or the IPE intervention were addressed by the PI during the training session, and during the outreach visits at two, three, four and six months post initial training.

**Outcomes.** W(e)Learn is intended to elicit four levels of outcomes, with the goal of enhancing collaborative practice to improve care delivery and patient outcomes. The four desired outcomes for learners are as follows: (a) a positive reaction to the learning



experience and its interprofessional nature; (b) modification in their attitudes and perceptions towards learning and development of new knowledge and skills; (c) change in individual behaviour (e.g., increase in collaboration in the workplace and change in professional practice); and (d) change in organizational structures or policies to support collaboration and care delivery.

W(e) Learn also emphasizes the need for continuous evaluation of the IPE program to ensure improvement and long-term success (MacDonald et al., 2009). Formative and summative evaluation procedures using both qualitative and quantitative methods are needed to evaluate the feasibility and acceptability of IPE, and to determine its impact on collaborative practice. The framework also embraces an emergent design based on the premise that the design of the IPE learning experience should be ongoing throughout the delivery of the program and responsive to learners' needs as they emerge. In this study, learner reactions, attitudes, knowledge, skills, and changes in collaborative practice were assessed using both qualitative (e.g., field notes, focus groups) and quantitative (e.g., surveys) data collection strategies at multiple time-points over the six-month intervention. The delivery of the IPE training session was modified slightly to increase learner engagement in small group activities when participation in large group discussions did not seem to be effective.

**The National Interprofessional Competency Framework.** The National Interprofessional Competency Framework (Canadian Interprofessional Health Collaborative [CIHC], 2010) identifies six competency domains which represent the knowledge, skills, attitudes and values required for interprofessional collaborative practice: role clarification, team functioning, collaborative leadership,

patient/client/family/community-centred care, interprofessional communication, and interprofessional conflict resolution. The CIHC recommends that these domains be used to guide IPE and collaborative practice for all professions in a variety of practice settings. Key assumptions underlying the framework are: (a) interprofessional learning develops over time and reflects a continuum of learning; (b) interprofessional collaborative practice is necessary for improvement in patient/client/family and community health outcomes; (c) interprofessional competency depends on the depth and breadth of opportunities for education and practice experience with, from and about other health and social care providers; (d) demonstration of interprofessional competencies may require a shift in how practitioners and practice environments conceptualize collaboration; and (e) interprofessional practice requires a practice environment that supports ongoing learning and interprofessional collaborative competencies. In this study, the IPE intervention was designed to address these CIHC collaborative practice competencies by including content on: understanding roles, shared goals and decision-making, effective communication, evaluation of team processes, and resolving conflict in teams, (see Appendices G and H).

### **Effective Strategies for the Delivery of IPE**

A variety of teaching strategies and learning activities have been recommended to enhance the delivery of IPE. These include: small group learning, reflective learning, case studies, didactic sessions, role play, video clips, and experiential learning (CAIPE, 2016; D'eon, 2005; Oandasan & Reeves, 2005). When face-to-face learning is not feasible, the use of technology such as e-learning should be employed (MacDonald et al., 2009). Context-specific learning activities that focus on a specific client population are more likely to be positively received by learners (Knowles, 1990). According to Knowles

(1984), adults are self-directed, they bring previous experiences and knowledge to the situation, and gain knowledge more easily when it is relevant and considered together with their previous knowledge. Learning activities should also be varied, meaningful, and include opportunities for interaction and provision of feedback.

Both reflective learning and experiential learning are viewed as important components of IPE (Clark, 2006; Mann, Gordon & MacLeod, 2009; Sargeant, 2009). Critical reflection on one's own experiences is central to learning (Schon 1987). Reflection is considered a mediator between existing knowledge, skills, beliefs and values, and current experience (Boud, Keough, & Walker, 1985). Reflection on both individual and team collaborative practices has been suggested as a strategy to enhance competencies for collaborative practice (Clark, 2006) by providing opportunities for individuals and teams to identify areas of strength and improvement (Mann et al.). However, team or group reflection often requires intentional and skilled facilitation by individuals trained in IPE. Therefore, the use of a trained facilitator should be incorporated into IPE learning activities to enable group reflection on the roles of various team members, collaboration and teamwork (Sargeant, 2009). Reflecting upon learning and practice is also encouraged as a form of continuing professional development. "Continuing IPE is transformative learning; not just an extension of what is now taught and learned" (Sargeant, 2009, p. 183). A summary of systematic reviews, and an overview of reviews assessing the effectiveness of educational outreach visits, found that multi-faceted education interventions combining educational strategies appeared to be more effective than interventions using only one educational strategy (Chan et al., 2017).

Drawing on these insights, a range of teaching and learning strategies including reflection were incorporated into the IPE intervention components. Specifically, the training sessions included lectures, small and large group discussions, and a video of a stroke survivor's experience with an interprofessional team. During the training session, group discussions focused on how participants would apply the content from the IPE intervention to their roles in the study. For example, participants took part in a group exercise to discuss strategies they could use to engage stroke survivors in their care. Engaging stroke survivors (clients) in their care is a key component of collaborative practice (Bookey-Bassett et al., 2017; CIHC, 2010).

### **Description of the Intervention**

The intervention components were based on the W(e)Learn Framework for Interprofessional Education (MacDonald et al., 2009), the CIHC (2010) competencies, and the literature that describes effective components and strategies for the delivery of IPE. It consisted of four core components: (1) an initial standardized IPE training session on collaborative practice; (2) an initial standardized training session for CCAC care coordinators on facilitating ongoing IPE and collaborative practice in their teams; (3) collaborative practice reflection huddles (CPRH); and (4) outreach education visits (see Table 2).

The intervention was delivered by the PI over a period of six months as described below and summarized in further detail in Appendix F. The overall goal of the IPE intervention was to improve the level of collaborative practice among home care providers delivering the ACHRUCPP intervention.

Table 2

*Foundation for IPE Intervention Components*

Component	Foundation
1. Initial Standardized IPE Session on Collaborative Practice	Content based on competencies for collaborative practice as described in CIHC framework and tailored to stroke context as recommended in the W(e)Learn framework. Delivery methods, teaching and learning strategies based on W(e)Learn components and literature on effective strategies for IPE.
2. Standardized Training for CCAC Care Coordinators	Content based on CIHC framework (collaborative leadership, conflict management), literature describing effective strategies for IPE and team development. Delivery methods, teaching learning strategies based on W(e)Learn components (media and service) and literature on effective strategies for IPE.
3. Collaborative Practice Reflective Huddles	Based on key principles of interprofessionalism and learning theories consistent with W(e)Learn framework, reflective learning, and strategies for effective IPE.
4. Outreach Education Visits	Based on current literature on educational outreach and evidence that multi-faceted education interventions combining educational strategies appeared to be more effective than single component educational interventions.

One month prior to implementing the intervention, the PI and the researchers involved in the ACHRU-CPP stroke intervention met with the home care providers who would be delivering the intervention, to obtain their feedback on the proposed ACHRU-CPP intervention, including the IPE intervention. Providers felt that the proposed IPE intervention was feasible and acceptable, and did not recommend any changes to the intervention prior to implementation. This was an important step for assessing acceptability of the intervention, identifying any areas for adaptation, and enhancing

feasibility of implementation (Sidani & Braden 2011). It is also in keeping with adult learning theory in that it is important to assess learners' needs prior to implementing an educational program (Knowles, 1984).

The four components of the IPE intervention are described below.

**1. Standardized IPE training session on collaborative practice.** Participants (CCAC Care Coordinators, RNs, PSWs, OTs, PTs, nursing, rehabilitation and PSW supervisors) attended an initial three-hour, group-based IPE training session, which was part of a 12-hour training session for the providers involved in delivering the ACHRU-CPP intervention. The objectives for this training session were to: (a) introduce the concept of collaborative practice as a key component of the ACHRU-CPP intervention; (b) enhance understanding of the components of collaborative practice; (c) enhance understanding of collaborative practice from a patient perspective; (d) provide strategies for enhancing collaborative practice among team members, clients and family caregivers; and (e) introduce participants to the other components of the IPE intervention (e.g., collaborative practice reflective huddles [CPRH], outreach education visits).

Content for the training session included definitions of collaborative practice for community-living older stroke survivors with MCC and its significance (Hammick et al., 2007; Ploeg et al., 2017). Key competencies of collaborative practice (CIHC, 2010) were also introduced. These included: (a) understanding all provider roles; (b) establishing shared goals, decision-making and care plans, (c) communicating effectively; (d) involving older adults and family caregivers in the team, and (e) evaluating and reflecting on team processes (Kim et al., 2011; Sargeant, 2009; Suter et al., 2009). Patient perspectives and experiences with collaborative practice were addressed through

the use of a video that portrayed a stroke survivor's experiences in being cared for by an interprofessional team throughout the continuum of care. The video was shown with the intent that participants would gain an understanding of the meaning of collaborative practice from the client's perspective. The video was followed by a discussion of the key messages from the video. Strategies to promote collaboration among team members, such as enhancing trust and respect among team members, reflective practice, and team meetings, were also discussed.

Consistent with adult learning principles, a variety of teaching and learning strategies were used to deliver the content, including lecture, small and large group discussions, case studies, and other experiential learning activities (Barr, 2009; MacDonald et al., 2009; McKellar et al., 2011). Learners were provided with a variety of evidence-based resources on collaborative practice that were included in the standardized ACHRU-CPP training manual. An overview of the content of the training session, including participant learning objectives, teaching strategies and resources, is presented in Appendix H.

## **2. Standardized training session for CCAC care coordinators.** Care

Coordinators were invited to attend an additional two-hour training session two weeks following the initial training. This session was conducted to provide the CCAC care coordinators with strategies to facilitate ongoing interprofessional learning and collaborative practice within their teams (Sargeant, 2009). An overview of the content of this training is shown in Appendix I. The specific objectives for this session included enhancing understanding of: (a) the concepts of IPE and collaborative practice; (b) team stages and group development; (c) strategies to facilitate interprofessional learning and

collaborative practice; and (d) strategies for leading their teams in a collaborative practice reflective huddle (described below).

Care coordinators were given a range of resources to facilitate team collaboration, including a sample team meeting agenda (Appendix J), a team charter (Appendix K), and sample questions to guide their teams in reflecting on their ability to collaborate (Appendix M). A team charter is a formal document to guide the team's overall functioning (Registered Nurses Association of Ontario [RNAO], 2013). It includes details regarding how the team will work together, specific roles of each team member, team values, and processes for communication and conflict resolution. Information on stages of group development and conflict management were also provided (Blackmore & Persaud, 2012; Dimock & Kass, 2007; Tuckman, 1965).

The "Observe, Coach, Assist and Report [OCAR]" framework (Giosa, Holyoke, Bender, Tudge, & Gifford, 2015) was used to enhance understanding of the PSW role, and to facilitate the integration of PSWs into the teams. This framework was developed based on the findings of a mixed-methods study that explored the role of Ontario PSWs in interdisciplinary evidence-based stroke care. The framework has the potential to be used to guide improvements in intra-team communication, information sharing, and awareness of the PSW role, to support a more integrated home care experience for clients and their family caregivers. The OCAR framework describes various strategies in which PSWs can contribute to the interprofessional team in caring for stroke survivors and their family caregivers. Following this training, the care coordinators led their teams in completing the team charter at their first team meeting. They then distributed a completed copy of the team charter to each of their team members.



**3. Collaborative practice reflective huddles.** Reflective practice is considered a key component of IPE. However, the process of reflection often requires facilitation (Kim et al., 2011; Sargeant, 2009). Therefore, the intervention included this component in which the care coordinators (supported by the PI) led their teams in a reflective exercise at two, three, four and six months, using collaborative practice reflective huddles (CPRHs). The overall purpose of the reflective exercise was for providers to reflect as a group on their team's ability to: (a) identify areas of strength and areas for improvement with respect to collaboration within their teams; (b) assess ongoing learning needs for collaborative practice; (c) explore ways in which collaboration influences the delivery of the ACHRU-CPP rehabilitation intervention; and (d) discuss how collaboration impacts client care. Developing skills in collaborative practice and building collaborative relationships is an evolving process that requires significant work and time (McKellar et al., 2011).

The CCAC care coordinators led the reflective discussion guided by a standardized set of questions (Appendix M), that included the three open-ended questions from the Collaborative Practice Assessment Tool (CPAT) (Schroder et al., 2011). The questions were used to facilitate dialogue and reflection among team members regarding their collaborative practice. The PI attended the CPRHs and documented the team's discussion and responses during the reflective exercise (Appendix N). Key themes emerging from these field notes and the three-month CPAT and TCI results were summarized and presented back to the individual teams at the four-month team CPRH. These summaries were used to stimulate further discussion and reflection among team members on the team's ability to collaborate, assess appropriateness of questionnaires,

and to validate the results with participants. This allowed team members to interact and learn from one another through sharing their perspectives to create new understandings of collaborative practice. This approach is congruent with the key principles of interprofessionalism and socio-constructivist theories embedded in the W(e) Learn framework (MacDonald et al., 2009). Questions used to guide discussion of the results of the CPAT included: (a) Do any of these results surprise you? Why or why not? (b) What do these results mean to your team? (c) In what ways can your team use these results to improve your team's collaboration? (d) What areas of collaborative practice are important for your team to focus on?

In the context of managing chronic diseases for older adults, it is important for interprofessional teams to regularly evaluate the impact of their collaborative processes on desired goals such as quality of patient care, patient outcomes, provider satisfaction, and the cost of service delivery (Bookey-Bassett et al., 2017). These exercises also provide team members with the tools needed to reflectively approach the evaluation of their team processes.

**4. Outreach education visits.** An outreach visit is an educational strategy that involves meeting with providers/participants in their practice setting to provide information with the intent of changing the providers'/participants' behaviour or performance. This may also include giving feedback on providers' performance (Reardon, Lavis, & Gibson, 2007). The PI conducted outreach visits at two, three, four and six months following the initial training with each of the teams to reinforce aspects of the intervention, monitor progress, provide education and feedback, share results of the questionnaires (CPAT and TCI), and discuss any barriers, concerns, and enablers to

implementation of the intervention, and support team reflection. Educational outreach visits also offer an additional level of support for clinicians beyond traditional didactic training and continuing education (Chan et al., 2017).

### **Implementation of the intervention**

In addition to the outreach visits, several strategies were used to support and monitor implementation of the intervention. Reminders were sent to home care participants and their managers related to study processes (e.g. reminders of team case conferences including outreach visits, completion of questionnaires) along with any updates including successes and areas for improvement related to the intervention.

To monitor and assess the feasibility, acceptability, implementation and effectiveness of the intervention, various data collection procedures were used. These procedures are described in the following section.

### **Data Collection and Study Procedures**

Both qualitative and quantitative data collection strategies were used to address the research questions; the predominant method was qualitative. Qualitative data included feedback about the care coordinator training (Appendix N), comments on the completed team charters, field notes taken by the PI during the CPRHs, and focus group transcripts and field notes from the focus groups. Three separate focus groups were conducted at six months to assess participants' perceptions of the feasibility, acceptability and perceived impact of the intervention. The use of focus groups and document review are consistent with Sandelowski's (2000) qualitative descriptive approach.

Quantitative data collection consisted of a participant demographic questionnaire and a questionnaire to evaluate the initial IPE training session. Questionnaires to assess

the level of collaborative practice (CPAT) and team functioning (TCI) were administered at three and six months. A summary of the key variables, measures and methods of analysis is shown in Appendix O.

**Participant characteristics.** A demographic questionnaire was administered to participants at baseline during the initial training session and for new participants who joined the study after the initial training session. Data on participants' age, gender, professional designation, education level, number of years in current role, number of years in profession/discipline, number of years with current employer, employment status (e.g., full-time or part-time), previous interprofessional education training, experience working with stroke survivors, and experience working in teams were collected (see Appendix P).

**Feasibility of the IPE intervention.** Feasibility refers to the practicality of implementing an intervention and included assessing the logistics associated with delivering the intervention (Sidani & Braden, 2011). The focus is on determining providers' ability to carry out the components and activities of the intervention as planned, and on identifying difficulties in applying any aspect of the intervention (Sidani & Braden, 2011). Assessing feasibility is also important to determine how to adapt the intervention for future studies and is congruent with the W(e)Learn premise of ongoing evaluation of IPE to ensure responsiveness to learner needs (MacDonald et al., 2009). Feasibility was assessed on an ongoing basis over six months and included the following components.

***Enrollment rate.*** This was measured as the percentage of eligible participants who enrolled in the study, the number of eligible participants who declined enrollment in the study (at initial request), and the reported reasons for non-participation.

***Attrition rate.*** The percentage of participants who withdrew from the study before completing the six-month focus group, and the six-month CPAT, and TCI out of the total eligible and consenting participants and the reported reasons for attrition. These data were collected throughout the study and tracked in the study log.

***Barriers and facilitators to implementation.*** Qualitative feedback was obtained from participants regarding barriers and facilitators to implementation of the IPE intervention through the CPRHs and three focus groups six months after the initial training session. Focus groups are a form of group interview that takes advantage of the communication and interactions among research participants to generate qualitative data and allow for participants to share experiences and points of view (Sim, 1998). They are an appropriate data gathering method for exploring people's knowledge, perceptions and experiences to examine what people think and why they think that way (Kitzinger, 1994).

Focus groups allow for consensus and diverse opinions, are more efficient than individual interviews, and provide an opportunity to collect, probe and clarify a range of views that may not emerge through individual interviews (Krueger, 1994; Loiselle, Profetto-McGrath, Polit, & Beck, 2007). This approach is useful for determining program effectiveness and obtaining data for program improvement (Patton, 1990). All participants were invited to participate in one of three focus groups conducted by the PI at the time and location most convenient for them. Focus groups combined participants from the different teams rather than a separate group for each team. Each focus group

lasted approximately 45 to 60 minutes. The research coordinator for the ACHRUCPP stroke intervention attended the focus group to assist with note taking. The PI followed a semi-structured interview guide, beginning with a brief review of the IPE intervention components and the overall purpose of the study. Focus groups allowed participants to critically reflect on their experiences and share their perceptions about the intervention (Appendix S).

Field notes were also taken during the CPRHs to identify the challenges, barriers and facilitators to implementation of the IPE intervention. Field notes included unanticipated effects of the intervention as well as actual modifications to the intervention.

***Fidelity of intervention implementation.*** Fidelity was assessed using a fidelity scale developed by the PI that employed a simple, present/absent response format (Appendix Q). Fidelity of intervention implementation refers to the extent to which participants adhered to each aspect of the intervention (Borelli, 2011). This involved monitoring the degree to which specific components of the intervention were delivered as intended. These components included: attendance at the IPE training session, team member attendance and participation in CPRHs, attendance at the care coordinator training session, and the proportion of participants completing the Collaborative Practice Assessment Tool (CPAT) and the Team Climate Inventory (TCI) questionnaires.

***Acceptability of the IPE intervention.*** Acceptability refers to the appropriateness, benefits, and convenience of implementation of the intervention (Sidani & Braden, 2011). Acceptability of the intervention was assessed using the We Learn tool, a survey developed for the Care Coordinators, and through the focus groups and CPRHs.

The W(e) Learn Interprofessional Program Assessment Tool (MacDonald et al., 2009) was used to assess participants' attitudes, experiences, knowledge gained, overall content and delivery of the IPE training program immediately following the initial IPE training session. The W(e)Learn tool is a validated tool that consists of 30 items which align with the W(e)Learn framework's major components (i.e., structure, content, service and outcomes) and assesses learners' perceptions of their IPE experience. Participants indicate their level of agreement with each item on a Likert-scale where 1 = strongly disagree and 7= strongly agree and which a higher score means higher perceptions of the effectiveness of the session. Initial reliability testing showed high internal consistency for all scales with Cronbach's alpha scores ranging from 0.93 for content to 0.97 for structure (MacDonald et al., 2002). Content validity was established using expert consultation at the time of development (e.g., experts were consulted to ensure clarity and content of items). See Appendix R.

To evaluate the acceptability of the care coordinator training, care coordinators completed a short questionnaire developed by the PI. The questionnaire assessed their perception of the overall delivery, content and knowledge gained from the training session (Appendix N). Field notes were taken during the CPRHs at two, three, four and six months to assess the acceptability of the intervention.

The acceptability of the intervention was further assessed through three focus groups six months after the initial training session. Examining acceptability following implementation of an intervention provides information on participants' experience participating in the intervention versus a description of the proposed intervention (Sidani & Braden, 2011). The intent of the focus groups was to obtain participant feedback on the

feasibility and acceptability of the IPE intervention as part of the ACHRU-CPP stroke intervention.

During the focus group, participants were asked to discuss the IPE intervention in terms of: (a) its overall appropriateness and usefulness in improving collaborative practice; (b) supports and resources necessary to sustain the intervention in everyday practice; (c) ways to improve its relevance and acceptability; and (d) an identification of elements that may be missing. Sample questions asked during the focus groups were:

- What components of the IPE intervention worked well? What components did not work well?
- Having participated in this IPE training intervention, in what ways has it helped you to collaborate with other team members, clients and their family caregivers?
- What needs to be changed or improved in the IPE training intervention to help you sustain it in your routine practice?

**Feasibility of the study methods.** Feasibility of the study methods refers to the adequacy, effectiveness, and efficiency of the study methods (Sidani & Braden, 2011). Evaluation of the study methods involved: (a) determining if the research procedures (e.g., recruitment/retention rates and procedures, eligibility criteria, data collection and analysis methods) were appropriate, could be easily performed as planned and could yield quality information in a reasonable time frame, and (b) identifying any challenges to carrying out the planned research procedures. Intervention activities were tracked using field notes and a checklist that employed a simple, present/absent response format



to capture the proportion of study procedures that were implemented as planned.

Deviations from the original plan were noted with rationale.

Criteria to assess the feasibility of the data collection methods were based on other studies evaluating educational interventions (Blekken et al., 2015; Mealer et al., 2014) and recommended by Thabane (2010). Feasibility criteria included: (a) > 80% completed questionnaires returned; (b) < 10% missing data on each completed questionnaire; (c) acceptable time to complete study procedures (e.g. collaborative practice reflective huddles [CPRH] within 30 minutes, questionnaires within 15 minutes); and (d) the proportion of study activities implemented as planned.

**Effectiveness of the intervention.** The three-month change in the level of collaborative practice and team functioning from three to six months following the initial training session was assessed using the Collaborative Practice Assessment Tool (CPAT) (Schroder et al., 2011) (Appendix T) and the Team Climate Inventory (TCI) (Beaulieu et al., 2014) (Appendix U). Three months was deemed to be an optimal time to capture a change in collaborative practice for this intervention, and was consistent with the follow-up period in other studies evaluating IPE interventions (Cheung et al., 2012; Curran, Sargeant & Hollett, 2007; Jones et al., 2012).

**Collaborative Practice Assessment Tool (CPAT).** The CPAT is a 56 item self-report questionnaire that was designed to enable teams to assess their perceptions of collaborative practice (Schroder et al., 2011). This tool was selected as the items in this questionnaire are consistent with the conceptualization of collaborative practice in the CIHC framework and the attributes of collaborative practice (Bookey-Bassett et al., 2017). The CPAT assesses the degree to which health care practitioners collaborate to

provide comprehensive, timely and appropriate patient care. It has been used with a wide variety of health professionals and non-health professionals in acute care, family practice, long-term care, and geriatric settings, and can be used to identify health care providers' educational needs to enhance collaborative practice. The CPAT demonstrates good reliability (internal consistency) with Cronbach alpha coefficients for all subscales ranging from 0.72 to 0.92 (Pfaff, Baxter, Ploeg & Jack, 2013; Schroder et al. 2011). Content validity was established at the time of instrument development and construct validity was confirmed by factor analysis in two pilot studies as described in Schroder et al. (2011).

The items on the CPAT represent eight domains of collaborative practice: (a) mission, meaningful purpose, goals; (b) general relationships; (c) team leadership; (d) general role responsibilities and autonomy; (e) communication and information exchange; (f) community linkages and coordination of care; (g) decision-making and conflict management; and (h) patient involvement. Responses are measured using a seven-point Likert scale ranging from “strongly disagree” to “strongly agree”. Scoring of the CPAT entails computing the average of the items within each domain; questions 20, 23, 35, 48, 49, and 50, should all be reverse coded for scoring purposes. The score for each domain gives the team an indication of the overall level of collaboration within each of the domains. Higher scores indicate higher levels of collaboration. With the composite score determined from multiple team members' input, trends can be seen while maintaining team member's privacy and individual views.

The CPAT also includes three qualitative questions: 1) What does your team do well with regards to collaborative practice? 2) In your practice, what are the most

difficult challenges to collaboration? and 3) What does your team need help with to improve collaborative practice? These questions were used to guide the team reflective discussions during the case conferences at two, three, four and six months. The tool takes approximately 15 to 20 minutes to complete. To date, there is no published data using the CPAT with home care providers. However, a recent review of instruments to measure collaborative practice provides evidence of the CPAT's reliability and validity with various groups of health care providers (Bookey-Bassett, Markle-Reid, McKey, & Akhtar-Danesh, 2016). The CPAT's responsiveness/sensitivity has been demonstrated in two studies in a variety of settings including inpatient mental health, a geriatric day hospital, inpatient oncology, and rehabilitation units (Byrnes et al., 2012; Paterson, Medves, Dalgarno, Riordan & Grigg, 2013).

*Team Climate Inventory (TCI)*. The original 44-item version of the TCI was developed by organizational psychologists Anderson and West (1994) to evaluate team functioning at a group level. It is based on the four-factor theory of innovation (Kivimaki & Elovainio, 1999; West, 1990); a well-studied model of team innovation. This theory argues that group innovations result from team activities characterized by the presence of vision, participative safety, task orientation, and support for innovation. The TCI was chosen to supplement the CPAT to measure different aspects of collaborative practice. For example, the CPAT focuses on competencies for collaborative practice whereas the TCI emphasizes team innovation and change as part of collaboration.

The original TCI demonstrates robust psychometric properties with acceptable reliability and validity in many populations, countries, and organizational contexts including community-based health and social services (Bookey-Bassett et al., 2016).

Exploratory factor analysis confirmed that the original four-factor model with all scales had good internal consistency, and it was recommended by the authors as a viable instrument for assessing the four dimensions of team climate. The 19-item TCI was used in this study. The 19-item TCI has acceptable reliability and construct validity when compared to the original version (Beaulieu et al., 2014). It is comprised of four scales, representing different dimensions of team functioning: (a) participation safety (6 items; Cronbach  $\alpha$  0.84), (b) support for innovation (5 items; Cronbach  $\alpha$  0.81), (c) vision (4 items; Cronbach  $\alpha$  0.86) and (d) task orientation (4 items, Cronbach  $\alpha$  0.84). The first two scales are scored on a 5-point Likert scale, and the last two scales are scored on a 7-point scale. Higher scores indicate higher levels of functioning in relation to this dimension. The tool takes approximately 10 minutes to complete. It is appropriate as a global measure of team function and provides a detailed analysis of four central processes relating to team functioning.

#### **Perceived impact of the IPE intervention on collaborative practice.**

Participants' perceptions of the impact of the IPE intervention on collaborative practice were assessed using qualitative data collected from the completed team charters, field notes from the CPRHs, and the focus group transcripts.

**Adaptation of the IPE intervention.** Adaptations to the intervention and the rationale for these adaptations were documented in the form of field notes taken during the initial training session and the CPRHs over the six-month intervention period.

**Advantages and disadvantages of using the CPAT and TCI to assess collaborative practice.** The advantages and disadvantages of using the CPAT and the TCI to assess collaborative practice were assessed through evaluating participants'

comments when completing the items and their ability to complete the questionnaires within expected time limits. In addition, a Pearson's correlation was performed using the total mean scores for each instrument to assess the relationship between the constructs being measured by the two tools.

**Requirements to integrate and sustain the IPE intervention in practice.**

Sustainability refers to the capability of a new intervention or way of practice being maintained at a certain rate or level (Gruen et al., 2008). This was assessed during the focus groups immediately after the intervention at six-months. Participants were asked what would be necessary to integrate and sustain the intervention in everyday practice.

**Qualitative data management and analysis.** Qualitative data consisted of the field notes from the initial training, CPRHs and focus groups, feedback on the care coordinator training, information on team charters, and the focus group transcripts. Field notes from each team's meeting were entered into a word document file and stored on the PI's computer and backed up on the shared drive at McMaster University. Focus group audio-recordings were transcribed verbatim and the text was double checked for accuracy prior to analysis. Transcriptions were stored as password protected word document files on the shared drive at McMaster University and were only accessible by the PI and her thesis supervisor.

Analysis was consistent with a qualitative descriptive approach (Braun & Clarke, 2006; Sandelowski, 2010; Vaismoradi, Turenen, & Bondas, 2013) in which data analysis consisted of coding processes to develop themes describing participants' experiences and perceptions of the IPE intervention. Analysis began with the PI reading through all the field notes from CPRHs, focus group transcripts, feedback on the care coordinator

training, and the team charters to gain a general understanding of the data (Creswell & Plano Clark, 2011). Coding the data involved dividing the text from the transcripts and field notes (raw data) into small meaningful units (phrases, sentences, or paragraphs), assigning a label (code), and then grouping the codes into themes (Braun & Clarke, 2006). Themes reflect broad perspectives of phenomena that can be related or compared (Creswell & Plano Clark). The PI and two members of the thesis supervisory committee independently coded one focus group transcript and one set of notes from a CPRH. The PI then met with each of these committee members to review and agree upon the coding scheme. Data from the field notes and the focus groups were compared for themes related to barriers, facilitators and perceived impact of the intervention on collaborative practice. The researcher used an iterative process which involved reviewing coded data supporting each of the themes and continually referring to previously coded sections for comparison and further refinement of themes.

Coded data from the CPRH field notes (including the responses to the three open-ended questions in the CPAT), completed team charters, notes from the care coordinator training, and the focus group transcripts were combined into one document. This document was coded, and themes were identified to address the research questions.

**Methodological rigour.** Several strategies were used to enhance the rigour of the qualitative methods. In qualitative descriptive studies, strategies to increase rigour include ensuring authenticity, credibility, criticality, and transferability (Milne & Oberle, 2005). These strategies are in line with Lincoln & Guba's (1985) recommendations for scientific rigor and trustworthiness of the findings in qualitative research. Data collection and analysis procedures were guided using field notes, ensuring accuracy of transcripts,

and using participants' words as much as possible to stay close to the data to reflect participants' points of view (Milne & Oberle, 2005; Sandelowski, 2000).

***Authenticity.*** Authenticity refers to the need to pay attention to the voices of participants and includes strategies such as ensuring informants are free to speak and that their voices are heard by promoting richness of data, accurate transcription, and ensuring coding processes stay true to the data (Milne & Oberle, 2005). All participants were invited to join one of the focus groups. Those who did attend were free to speak as much or as little as they chose during the focus group. A semi-structured interview guide with open-ended questions was used for the focus groups to allow participants' perspectives to be captured. The researcher used additional probing to promote richness rather than superficiality of data. Focus groups diminish the role of researcher and create a safe environment for participants to respond to questions as they choose, rather than as designated by the researcher (Milne & Oberle).

Ensuring accurate transcription is important to ensuring authenticity as well as scientific integrity. To ensure accuracy in this study, the PI completed two readings of transcribed data while listening to the audio-recordings.

***Credibility.*** Credibility refers to how accurately the findings reflect participant experiences (Lincoln & Guba, 1985), and reflects the plausibility of the results (Milne & Oberle, 2005). To enhance rigour and credibility of the qualitative data analysis process, coding of one transcript and one set of field notes from a CPRH was completed by the PI and her thesis supervisor independently. The PI and supervisor then met to review and assess accuracy and agreement on the coding scheme. The PI also reviewed a series of

matrices of codes, categories, and themes with another member of the supervisory committee who has expertise in qualitative methods.

***Criticality.*** Criticality refers to the critical appraisal of every decision made throughout the research process and reflects the overall integrity of the study (Milne & Oberle, 2005). Strategies to promote the overall integrity of the study included consistent reflection on potential sources of bias such as the role of the researcher, respondent validation and peer review. Peer review refers to processes used to stay true to the data to present a clear picture of participant meaning; for example, reviewing of codes by multiple researchers to ensure codes truly reflect the data. The researcher is intricately linked to all aspects of a qualitative study. The ability of the researcher to actively reflect on his or her biases is critical to the integrity of the study (Milne & Oberle). The PI was involved in delivering the IPE training session as well as collecting and analysing the data. This could have represented a potential source of bias in this study. Researcher bias may occur because of selective observation and recording of information (Johnson, 1997). For these reasons, it was important to pay close attention to the participants' words (e.g., exact quotes and key words), during the data analysis processes. Review of the coding processes by committee members helped to ensure that participant words rather than the researcher's perceptions were represented.

***Transferability.*** A final factor for assessing rigor in qualitative research is transferability which refers to the extent to which study findings can be applied to other similar contexts/subjects (Lincoln & Guba, 1985). By documenting detailed accounts of the research process, readers are able to make decisions regarding the applicability of the study methods to their contexts (Lincoln & Guba). Including contextual details of the



study and keeping field notes from the reflective practice huddles and the focus groups, allowed for a richer description of the overall study. Incorporating details of implementation and analysis may assist other researchers in determining how findings from this study could be applied to their setting.

**Quantitative data analysis.** Quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS) version 22.0 for Windows (SPSS Inc., Chicago, IL). Prior to analysis, the database was double-checked, cleaned, and screened for missing data and duplicates. Any patterns regarding missing data (e.g., univariate, monotone, arbitrary) or missing cases were documented and referenced in the analyses procedures. Descriptive analysis of participants' characteristics and feasibility data (e.g., attendance rate, questionnaire completion rate) of the intervention were expressed as a mean (standard deviation [SD]) or median (minimum-maximum) for continuous variables and count (percent) for categorical variables. Changes in the level of collaborative practice and team functioning from three to six months, as measured by the CPAT and TCI, were examined using paired t-tests. A p-value of  $< 0.05$  was considered statistically significant. Normality tests were used to assess normality. Non-parametric tests (Kruskal-Wallis and Wilcoxin Signed-Rank Test) were used if the normality assumption was violated.

To further assess the importance of results, effect sizes for paired t-tests were calculated for the domains of the CPAT and subscales of the TCI with statistically significant increases using Cohen's *d* (Cohen, 1988). Cohen's *d* indicates the relative magnitude of the differences between means and measures the intervention effect in terms of the standard deviation (Gravetter & Wallnau, 2008).

Given two measures were used to assess collaborative practice and team functioning, a Pearson's correlation was performed using the overall mean scores for each instrument to assess whether the two instruments were in fact measuring the same construct.

### **Ethics**

This study was conducted in accordance with the Tri-Council Policy Statement, "Ethical Conduct for Research Involving Humans" (CIHR, 2014). Ethics approval for the study was received from the Hamilton Integrated Research Ethics Board (approval #15-243) and renewed yearly as required (Appendix V). All participants provided written informed consent.

**Information and consent processes.** Potential participants were provided with an information and consent form explaining the purpose, procedures, potential risks and discomforts, potential benefits to participants and/or society, incentives, confidentiality, withdrawal, feedback to participants and subsequent use of data. (See Appendix W). Participants had the opportunity to ask questions about any aspect of the study prior to agreeing to participate. Participation in the study was voluntary and did not impact participants' employment status in any way. Written consent was obtained by the PI during the initial training session, or at the point that they joined the study, for study activities and data collection procedures. Participants were able to withdraw from the study at any time without penalty.

**Confidentiality and anonymity.** All data collected as part of this study were kept confidential and were only available to the PI or her thesis supervisor. Electronic data files were password-protected and stored on the PI's computer and backed up on the

shared drive at McMaster University. Hard data were stored in a locked filing cabinet at McMaster University. Each participant was assigned a numerical ID number. The ID number was used in all data storage and analyses processes. A list of participant names and corresponding study ID numbers were kept in a locked filing cabinet in a separate location from the data files. Only the PI had access to this list. No participant names or other identifying information will be reported in any study reports or publications. The data may be used in subsequent studies, for up to five years following completion of the study. After this time, the primary investigator will permanently destroy all data, by manually shredding hard documents and deleting electronic computer files.

## **Chapter Four**

### **Results**

The results begin with a description of the study participants followed by the results for each research question.

#### **Participant Demographic Profile**

A total of 37 home care providers from one CCAC and two of their contracted service delivery agencies in Ontario participated in the study over the six-month study period. Demographic characteristics of the participants are displayed in Table 3. Most of the participants were female (86.5%) and about half (56.7%) were between the ages of 21 and 40 years. About two-thirds of participants (65.7%) had completed post-secondary education in the form of a diploma, bachelor's or graduate degree. Participants included care coordinators (10.8%), occupational therapists (10.8%), physiotherapists (10.8%), registered nurses (10.8%), personal support workers (40.5%), PSW supervisors (8.1%), and nursing and rehabilitation supervisors (8.1%). All the care coordinators were registered nurses. About two-thirds (67.5%) of all home care provider participants had been working in their respective professions for less than 10 years. About one-half (51.4%) had worked three years or less in their current position in their organization. More than half of the participants (56.8%) were employed full-time. About two-thirds (62.2%) reported that they had not received any previous IPE training on collaborative practice.

Table 3

*Participant Demographic Characteristics (n = 37)*

Variable	Categories	n (%)
Gender	Female	32 (86.5)
	Male	5 (13.5)
Age (Years)	21-30	11 (29.7)
	31-40	10 (27.0)
	41-50	10 (27.0)
	≥ 51	6 (16.2)
Education	Technical or trade school	2 (5.7)
	Some College/University	10 (28.6)
	Diploma/Bachelor's Degree	17 (48.6)
	Graduate Degree	6 (17.1)
	Missing	2 (4.9)
Role in Organization	Care Coordinator	4 (10.8)
	Occupational Therapist	4 (10.8)
	Physiotherapist	4 (10.8)
	Registered Nurse	4 (10.8)
	Personal Support Worker	15 (40.5)
	PSW Supervisor	3 (8.1)
	Nursing Supervisors	2 (5.4)
	Rehab Supervisor	1 (2.7)
Years in Professional Role	0-3	12 (32.4)
	4-10	13 (35.1)
	11-20	7 (18.9)
	≥ 21	5 (13.5)
Years in Current Position	0-3	19 (51.4)
	4-10	14 (37.8)
	11-15	4 (10.8)
Employment Status	Full-time	21 (56.8)
	Part-time/other	16 (43.2)
Previous Interprofessional Training on Collaborative Practice	Yes	14 (37.8)
	No	23 (62.2)

## Research Question 1: Feasibility and Acceptability of Implementing the IPE.

### Feasibility of Implementing the Intervention

**Eligibility and enrolment rate.** Initial recruitment yielded 28 participants out of a potential 29 eligible home care providers for a recruitment rate of 96.5%.

**Dose of the intervention.** All components of the IPE intervention were delivered as planned. The initial standardized three-hour IPE training session was delivered to 28 home care providers as part of the 12-hour training session for the larger ACHRUCPP intervention. All four care coordinators attended standardized two-hour training session two weeks following the initial IPE training.

Each team allocated thirty minutes at the end of the monthly case conferences at two, three, four and six months for the CPRHs. On average, the CPRH process took approximately 15 to 20 minutes to complete. Attendance at the team meetings and completion of the CPRHs was high. The proportion of participants who participated in the CPRHs ranged from 84.6% to 100% over the six-month intervention period (Table 4).

Table 4

#### *Fidelity Scale*

Intervention Component	Data Source	Proportion
Initial standardized IPE training	Attendance record	28/28 = 100%
IPE training for new PSWs	Attendance record	3/3 = 100%
Attendance at CPRHs	Attendance record	
	@ 2 months	28/32 = 87.5%
	@ 3 months	30/30 = 100%
	@ 4 months	26/30 = 86.7%
	@ 6 months	22/26 = 84.6%
Care Coordinator training	Attendance record	4/4 = 100%

The CPRH attendance rate was 100% for the care coordinators, 75% for the OTs and PTs, 56.2% for the RNs, 53.1% for the nursing and rehabilitation supervisors, and 36.7% for the PSWs over the six-month study period. See Table 5.

Table 5

*CPRH Attendance Rate by Type of Provider*

Role	Range # CPRHs Attended*	Mean # of CPRHs Attended n (%)
Care Coordinators	4	4 (100.0)
Occupational Therapists	2 to 4	3 (75.0)
Physiotherapists	2 to 4	3 (75.0)
Registered Nurses	0 to 4	2.2 (56.2)
Nursing and Rehab Supervisors	1 to 4	2.8 (53.1)
Personal Support Workers	0 to 4	1.5 (36.7)

Note. \* out of a possible of 4 CPRHs

**Attrition rate.** The number of home care participants enrolled in the study fluctuated over the six months due to staff turnover within the provider agencies. A total of 11 participants were lost to follow-up, yielding an attrition rate of 29.7% over the six-month study period; the majority (54.5%) of the dropouts were PSWs. All 28 of the participants who were enrolled at baseline completed the questionnaires. Of the 30 participants who were enrolled at three-months, 25 completed the three-month questionnaires. Of the 26 participants who were enrolled at six months, 22 completed the 6-month questionnaires. The six-month analyses of the change in collaborative practice were based on a sample of 19 participants, for who complete three-month and six-month data were available. Five of these participants belonged to more than one team and completed two separate questionnaires for each team, resulting in a total of 24 questionnaires.

Table 6

*Number (n) and Proportion (%) of Participants Completing Data Collection Activities*

Activity	n/# enrolled*	%
Demographic & WeLearn Assessment (Jan 2016)	28/28	100.0
Care Coordinator Training Assessment	4/4	100.0
CPAT & TCI @ 3 months	25/30	83.3
CPAT & TCI @ 6 months <sup>+</sup>	22/26	84.6
CPAT & TCI @ both 3 and 6 months <sup>+</sup>	19/37	51.0
Focus Groups @ 6 months <sup>+</sup>	18/26	69.2

\*number of individuals enrolled in the study fluctuated over the 6 months due to staff turnover within the provider agencies.

<sup>+</sup>Data collection in July occurred during staff vacation time.

**Facilitators to implementation of the IPE intervention.** Four factors were identified as important in facilitating implementation of the IPE intervention: funding, support of key stakeholders, provision of key resources to support implementation and ensuring continuity of the care coordinators. The most frequently cited facilitator to implementation of the intervention was funding that was provided through the larger CIHR-funded study. Having funding to support the development and training of a dedicated interprofessional team and attendance at the monthly case conferences created the time and space for the IPE intervention to occur. One participant noted the importance of structure and time as a facilitator to implementation “I think allocating time to anything that has a structured purpose always makes it easier for that thing to happen” (FG2, Participant 4).

A second facilitator to implementation of the IPE intervention was the support of key stakeholders, including the individual home care providers, supervisors, senior leadership and administrative staff from the CECCAC and the provider agencies. Leadership support was a key factor in supporting the implementation of the intervention.



Leadership and administrative support from the CECCAC was fundamental for scheduling and reminding participants of the dates and times for the initial training of the entire team and the care coordinators, the CPRHs (as part of the ACHRUCPP case conferences), and the focus groups. Observations captured in the field notes indicate senior leadership from all agencies and the supervisors were also instrumental in providing ongoing internal support to the providers in the delivery of the intervention.

A third facilitator to implementation of the IPE intervention involved providing the teams with key resources, such as a sample team charter and the CPRH reflective question guide. Several participants commented on how they found the resources helpful in implementing the IPE intervention. For example, one participant commented “the team charter was very well-received...very valuable to moving it forward and it was a good opportunity to really meet and understand the team as well” (FG1, Participant 1). Care coordinators engaged their team members in a dialogue to complete their team charter, which was valued by participants as an activity to get to know each other and to begin working together as a team. Two participants indicated that the questions to guide the CPRH discussions helped to facilitate implementation of the IPE intervention (Appendix L). “I would say it was easy because the questions were in front of you, and you just had to probe; I didn’t find it challenging” (FG 2, Participant 1). The same participant added “those questions help us reflect on our practices as a team and we talk about ways to improve communication...it helps us to think about it.” Another participant from a different focus group had a similar comment “Well certainly having questions to follow to answer at each meeting was something good. It gives you some structure as you go along” (FG 1, Participant 7). A final facilitator to implementation of the IPE intervention

was ensuring continuity of the care coordinators who led the individual teams over the six-month study period.

**Barriers to implementation of the IPE intervention.** Home care providers identified barriers to successful implementation of the IPE intervention that also related to implementation of the ACHRU-CPP intervention. The most frequently cited barrier to implementation of the IPE intervention was that the teams did not always have clients to discuss at their team meetings due to an unanticipated delay in recruitment of participants into the larger trial. At the time of the study, changes occurred in the referral patterns for stroke survivors being discharged from hospital. For example, changes in funding that occurred during the study period resulted in the development of new CBSR models and pathways (Allen, 2016). As a result, the CECCAC received fewer referrals than expected for stroke survivors requiring home care services, resulting in fewer eligible participants. Moreover, there was a high refusal rate among eligible stroke survivors. Reasons for refusal included “they’re too busy or they’re overwhelmed...don’t really have time or [the] caregiver doesn’t have the time to come and participate in the interview or be present during care” (FG3, Participant 7). Consequently, during the CPRHs, it was difficult for the teams to reflect on and discuss how their team was functioning and collaborating to provide client care. Instead, they anticipated how their collaboration might impact client care. “At the beginning, we just had a little bit of difficulty answering [the reflective questions], because we didn’t have any clients (FG1, Participant 7)”. Another participant stated, “As we have few clients, you don’t have as much opportunity to be able to do that reflection” (FG2, Participant 4).

Another barrier to implementation of the IPE intervention was the high turnover of staff over the six-month study period. This resulted in the need for additional training for new participants who enrolled in the study after the initial IPE training session. Lower attendance rates of PSWs and RNs at the case conferences resulted in a smaller group of team members participating in the CPRH activities. In addition, the perspectives and expertise of these providers was not represented at the team meetings.

### **Acceptability of the IPE Intervention**

Overall, home care provider participants viewed the intervention as highly acceptable. Acceptability of the different intervention components (i.e., initial IPE training session, care coordinator training, CPRH) are described below.

**Initial IPE Training.** Overall, participants viewed the IPE training as highly acceptable. The W(e)Learn Interprofessional Program Assessment Tool (MacDonald et al., 2009) was used to evaluate participants' initial experiences, knowledge gained, and perceptions of the overall content and delivery of the IPE training session immediately following the initial training session. The results for the four key dimensions of IPE structure, content, service and outcomes are described below.

**Structure.** Participants rated the structure of the training session as very high (mean 6.01, SD 1.38) (Table 7). Most (85.7%) moderately or strongly agreed that the PI promoted an open atmosphere in which all participants could be heard. In addition, 82.0% of respondents moderately to strongly agreed that the learning experience provided opportunities to practice interprofessional collaborative approaches to patient-centred care. Only 71.4% of participants felt that the learning experience took learners' previous knowledge into account (Table 8).

**Content.** Participants rated the training content as very high (mean 6.03, SD 1.38) (Table 7). Almost all (92.9%) participants moderately to strongly agreed that the content was applicable to a wide variety of contexts including the community. Almost all (89.3%) participants moderately to strongly agreed that the content was consistent with their professional interests and needs. Most (85.2%) moderately to strongly agreed that the content included knowledge and skills necessary for interprofessional teamwork (Table 8).

**Service.** As shown in Table 7, Participants rated the PI's knowledge, responsiveness to learner needs, resources and training materials as very high (mean 6.27, SD 1.34). Almost all (92.8%) moderately to strongly agreed that the PI was knowledgeable about interprofessional work. Almost all (92.6%) participants moderately to strongly agreed they were provided with and/or made aware of useful tools and resources during the training (Table 8).

**Outcomes.** Overall, participants rated the outcomes of the initial training session as very high (mean 6.11, SD 1.46) (See Table 7). Most (89.2%) participants moderately to strongly agreed that they had a deeper appreciation for the approach to collaborative patient-centred care. Most (85.7%) moderately to strongly agreed that the learning experience was enjoyable, and 77.8% moderately to strongly agreed that they had gained knowledge that they would apply in practice (Table 8).

Table 7

*Mean Scores for W(e)Learn Constructs (n=28)*

Construct	Mean (SD)	Range
Structure	6.01 (1.38)	1 to 7
Content	6.03 (1.38)	1 to 7
Service	6.27 (1.34)	1 to 7
Outcomes	6.11 (1.46)	1 to 7

\*initial 28 participants

Table 8

*Acceptability of the Initial IPE Training Session (n=28)*

W(e) Learn Assessment Tool Selected Items	Strongly disagree to Slightly agree n (%)	Moderately agree to Strongly agree n (%)
<b>Structure</b>		
<i>The facilitator promoted an open atmosphere in which all participants could be heard.</i>	4 (14.3)	24 (85.7)
<i>The learning experience provided opportunities to practice interprofessional collaborative approaches to patient-centred care.</i>	5 (18)	23 (82.0)
<i>The learning experience took into account learners' previous knowledge and experiences.</i>	8 (28.6)	20 (71.4)
<b>Content</b>		
<i>The content was applicable to a wide variety of health care contexts (e.g., community).</i>	2 (7.1)	26 (92.9)
<i>The content was consistent with my professional interests and needs.</i>	3 (10.7)	25 (89.3)
<i>The content included knowledge and skills necessary for interprofessional teamwork*</i>	4 (14.8)	23 (85.2)
<b>Service</b>		
<i>The facilitator was knowledgeable about interprofessional work</i>	2 (7.2)	26 (92.8)
<i>I was provided with and/or made aware of useful tools and resources*</i>	2 (7.4)	25 (92.6)
<b>Outcomes</b>		
<i>I have a deeper appreciation of the approach to collaborative patient-centred care.</i>	3 (10.8)	25 (89.2)
<i>I enjoyed the interprofessional learning experience.</i>	4 (14.3)	24 (85.7)
<i>I have learned skills that I will apply in practice*</i>	6 (22.2)	21 (77.8)

\* n = 1 missing data

Participants also indicated that some of the content shared in the training session was new, while other content was a review of teamwork and collaborative practice. One participant indicated that it was good to have all team members start with the same baseline information and common language.

It was nice to have that baseline information though – to know that everyone on the working team was building from the same [foundation] ...parts of it was information we knew and practiced already but just moving it forward. I found that even from my vantage point was good because we were all coming from the same common language. (FG1, Participant 6)

Participants valued the completeness of the training manuals and resources provided remarking that they could refer back to specific content as necessary: "...we got a lot of resources, both written that we can look back at resources, as well as, training in the groups. ... I can't think of anything that was missing" (FG 2, Participant 4).

**Care Coordinator Training.** Overall, the care coordinators viewed the care coordinator training as positive. Care coordinators indicated that the training session was very informative and helpful in providing them with resources to lead their interprofessional teams, promote IPE, and enhance collaborative practice. Following the training session, all care coordinators agreed that they had a better understanding of the concept of IPE and had gained knowledge to facilitate IPE and collaborative practice within their teams.

Care coordinator participants felt that the training helped them to manage group challenges, develop a meeting agenda, and facilitate a team meeting. Resources provided during the care coordinator training that were reported to be helpful, included the sample agenda, team charter, and the OCAR framework for involving PSWs as key members in the interprofessional team. One participant indicated, "I plan to use my resources and the

guidelines...to enhance interprofessional collaboration.” A second participant noted that the session was “Very informative, and very helpful.” A third participant indicated that “This session was very informative.” All care coordinators indicated the PI had created a relaxed and comfortable learning environment.

Care coordinators indicated that the team charter was a key resource to facilitate discussions in their teams about how they would work together collaboratively. All participants contributed to the development of a team charter specific to their own teams. The completed team charters included a description of each provider’s role in relation to the ACHRU-CPP intervention, and the communication, decision-making and conflict management processes to be used by the team. Participants described the team charter as helpful for establishing group norms for working together, providing clarity regarding roles and responsibilities in the team, and managing team conflict.

I think the team charter was a good idea because it reinforces as part of the team [that] there’s no hierarchy; everybody was equal, everyone’s input was equal viewpoints. There’s no ‘well I say this and I’m the physio so we have to do this’ ... (FG 1, Participant 8)

I actually thought the team charter ... was a really good starting point for the conversation when our team first met because it was that where we actually talked about roles and it actually was helpful. I don't know that we had to actually write it down ... we haven't had to refer back to it per se but I think it was a really good guide to make you ask certain questions as to how you want to function as a team, because you don't often take the time to say those things so I thought it was actually helpful. (FG 3, Participant 1)

**Collaborative Practice Reflective Huddles.** Overall, participants felt that the CPRHs were helpful for thinking about how they approach and work with people. They felt that the CPRHs helped to improve communication among team members, and identify areas of strength and areas for improvement for their teams. One participant felt that the CPRH allowed everyone’s opinions about how the team was functioning to be



heard. Another participant indicated the reflective process allowed for communication of ideas among team members.

Doing the reflection provides a quick synopsis of what we are doing and how we are working together. If we had more clients with higher needs, there might be more to reflect on. (CPRH, Team 3)

I think...reflection is always a good thing. There is lots of learning to be had from it, you're looking back at what you did and then analyzing what could I have done better? What was good, what was bad, and that's a good thing. (FG 2, Participant 4)

I think the team reflection that we do after our meetings is helpful...They are helpful to determine whether you're working well as a team, or what needs to be adjusted or implemented differently. (FG 3, Participant 2)

Participants felt that team reflection offered more learning than individual reflection:

I like the three questions. And I don't even know if necessarily you ask all three, maybe it's two, or it's a hybrid; but not the diary. Well because you keep individual diaries but at the end of six months then what do you do with that? Because reflecting individually, I don't know if that gives you as much learning necessarily as reflecting together. (FG 2, Participant 4)

While most participants appreciated engaging in the CPRH in person some participants felt that it would be more feasible to join the meetings by phone. Others suggested that the team reflection could also be done using different technology such as “Skype.”

I don't know necessarily in this age of technology if we would necessarily come together this way. But maybe different kinds of technology, so maybe it's Skype, maybe it's some other way [of] using technology that you would come together using teleconference, maybe it's Webex, I don't know. You could still come together but not necessarily sitting together in person, but you can do it so many other ways now, and achieve the same outcome. (FG 2, Participant 4)

Further evidence of the acceptability of the CPRHs is reflected in the high attendance rates (84.6% to 100%) at the CPRHs (Table 4). Despite having to drive significant distances to attend the case conferences most participants attended in person.

At the four-month CPRH, the PI shared the individual teams' scores on the CPAT and TCI. This created an opportunity for participants to provide feedback on the scores and facilitated further discussion about the level of collaborative practice within their own teams. The anonymized scores were discussed within each of the teams at a high level (e.g., average scores per subscales for each of the instruments). The PI helped to interpret the scores and facilitated a group discussion regarding the meaning of the results for their individual team's functioning.

Participants were very interested in learning about the results of the CPAT and the TCI and what the results meant. Through discussion, the teams validated that the results made sense and appropriately represented how their teams were functioning at that point in time. One team felt their results were "impressive" (CPRH, Team 3). The conversation in one of the focus groups further supports the team validation of the results.

I: Do you remember the other questionnaires? The ones that... the longer ones, and then the teams did them at three months, and then at the fourth month, I came back and I showed you your results.

P1: Right.

I: And we talked about your team. What was that like? Do you remember?

P4: I don't know if there were any real surprises, I think

P1: Yes, I do remember.

P4: When we did them you don't know, but then after we had been together as a team and then you came back to talk about the results. I think for me anyways none of it [the outcome] came as a surprise.

P1: Yeah, I think that overall we were functioning well as a team, I think I remember that.

I: So, it wasn't like a surprise...

P5: I think I would have been more shocked if the results had come back saying that we're not functioning with our team.

Overall, the presentation of the scores on the CPAT and TCI were well received by participants. Sharing of the results engaged participants in further dialogue about how they were collaborating, and helped the teams identify areas of strength and areas for improvement. Different aspects and examples of collaboration were also discussed (e.g., what each of the different CPAT domains meant). This allowed for clarification regarding how the teams were exhibiting each of the domains through their collaborative activities.

## **Research Question 2: Feasibility of the Study Methods**

The methods to recruit participants as part of the ACHRUCPP were feasible. The data collection methods were congruent with the pre-set criteria. Participants completed the questionnaires within approximately 10 to 15 minutes without difficulty and with less than 3% missing data (lower than the target of < 10%). Participants indicated that all instruments were “easy to complete.” A few participants mentioned that the items on the CPAT pertaining to physician collaboration were not applicable to the study context as physicians were not a core member of the study team. The care coordinator training session was evaluated using a questionnaire developed by the PI (Appendix N). Participants had no difficulty responding to this questionnaire.

Teams generally completed the CPRH activities within 15 to 20 minutes which was within the 30 minutes that were allocated for this activity. During the CPRH discussion, field notes were taken by the PI using a structured template. The PI found the template was useful in capturing the team discussions as they reflected on their collaborative practice and how it pertained to caring for older stroke survivors with MCC.

The focus group interview guide worked well with the addition of probing questions (See Appendix S). Participants felt that the questions were clear however, the PI frequently had to clarify for participants which components were part of the IPE intervention and which components were part of the overall ACHRU-CPP intervention. Overall, the use of a combination of qualitative (e.g., feedback on care coordinator training, team charters, focus group transcripts, and field notes from CPRHs, and focus groups) and quantitative data collection methods resulted in a comprehensive evaluation of the feasibility and effectiveness of the intervention.

### **Research Question 3: Effect of the IPE Intervention on Collaborative Practice**

**Collaborative Practice Assessment Tool (CPAT) Scores.** As shown in Table 6, a total of 19 participants completed both the CPAT and the TCI at three and six months. However, five of these 19 participants (nursing rehabilitation and PSW supervisors) participated in more than one team. Each of these five participants completed the CPAT and TCI for two different teams, resulting in a total of 24 respondents who completed both the three and six-month questionnaires.

At three months following the initial training, the mean score for each of the eight domains of the CPAT was relatively high, ranging from 5.6 to 6.7 out of a possible score of 7. From three to six months, mean scores for six of the eight domains increased while

two (mission/purpose and general relationships) domains showed a slight decrease.

Paired t-tests showed there was a statistically significant increase in three out of the eight domains (communication/information exchange, community linkage and coordination of care, decision-making/conflict management;  $p < 0.05$ ) from three to six months. (See Table 9).

Effect sizes for paired t-tests (Cohen's  $d$ ) were calculated for the three domains that showed statistically significant increases. The effect sizes were as follows: (a) communication/information exchange (0.45), (b) community linkages and coordination of care (0.58), and (c) decision making and conflict management (0.54). According to Cohen (1988), 0.2 represents a small effect size, 0.5 as medium, and 0.8 as large effect size. Therefore, the effect sizes for these three domains would be considered medium. Data and calculations are shown in Appendix X.

**Team Climate Inventory (TCI) Scores.** At three months following the initial training, the mean scores for all four subscales were also very high, ranging from 4.5 out of a possible 5 to 6.4 out of a possible 7. From three to six months, mean scores on all the subscales of the TCI increased, however, only one subscale (task orientation) showed a statistically significant increase ( $p < 0.05$ ) (Table 9). The effect size for the task orientation subscale was 0.54 indicating a medium effect size (Cohen, 1988). See Appendix X.

Table 9

*Change in CPAT and TCI Scores from 3 to 6 months (n =24)*

Domain/Subscale	Time 1(a) Mean (SD)	Time 2 (b) Mean (SD)	Difference in mean scores (T2-T1) (95% CI)	p-value
<b>CPAT<sup>a</sup></b>				
Mission/Purpose	6.70 (0.34)	6.66 (0.43)	-0.04 (-0.15, 0.24)	0.636
General Relationships	6.68 (0.43)	6.63 (0.38)	-0.05 (-0.18, 0.28)	0.647
Team Leadership	6.06 (0.61)	6.08 (0.57)	0.02 (-0.34, 0.29)	0.889
General Role/Responsibilities	5.64 (0.61)	5.82 (0.47)	0.18 (-0.47, 0.11)	0.207
Communication/Information Exchange	6.44 (0.66)	6.78 (0.33)	0.34 (0.02, 0.67)	<b>0.036</b>
Community Linkage & Coordination of Care	5.67 (1.10)	6.26 (0.71)	0.59 (0.16, 1.10)	<b>0.010</b>
Decision-Making/ Conflict Management	5.83 (0.91)	6.29 (0.83)	0.46 (0.10, 0.82)	<b>0.014</b>
Patient Involvement	6.69 (0.44)	6.79 (0.37)	0.10 (-0.32, 0.12)	0.366
<b>TCI</b>				
Participation <sup>b</sup>	4.53 (0.41)	4.60 (0.45)	0.06 (-0.28, 0.14)	0.506
Support for Innovation <sup>b</sup>	4.52 (0.46)	4.63 (0.49)	0.10 (-0.35, 0.13)	0.365
Objectives <sup>c</sup>	6.39 (0.71)	6.68 (0.44)	0.29 (-0.61, 0.03)	0.073
Task Orientation <sup>c</sup>	6.21 (0.73)	6.59 (0.56)	0.38 (0.09, 0.68)	<b>0.014</b>

(a) Time 1: 3 months

(b) Time 2: 6 months

<sup>a</sup> possible score range 1 to 7; higher score represents more of the domain/subscale<sup>b</sup> possible score range 1 to 5; higher score represents more of the domain/subscale<sup>c</sup> possible score range 1 to 7; higher score represents more of the domain/subscale

Results based on 24 pairs of responses from 19 individual participants

Qualitative data from the completed team charters provided examples of how the CPAT domains, communication and information exchange were operationalized. Selected examples of how the teams planned to communicate and share information amongst themselves included: “Once a month and periodically as needed via email” (Team 2). “Monthly team meetings face-to-face preferred, for patient information frequency will be as current process” (Team 3). “Monthly and prn via current business processes” (Team 4).

Additional comments on the team charters, referred to the CPAT domain of community linkages and coordination of care, one team’s comment indicates how they incorporated this into collaborative practice. “Familiarizing ourselves with [the] community resources, and linking patients and families to these resources” (Team 2).

As part of the team charters, each team determined how they would make decisions and resolve conflict. Comments from different teams reflecting this CPAT domain were as follows: (a) “Decisions are to be made as a team through discussion and collaboration. Discussion will occur in-person during team meetings, via telephone calls one-on-one, or teleconference with relevant disciplines between face-to-face meetings. Other team members to be kept informed” (Team 1); (b) “Majority rules” (Team 2); and (c) “Identify pros and cons, majority greater than 50% of team decision” (Team 3).

Similarly, each team documented how they would resolve any conflicts that arose. The following comments reflect slight variation in each team’s approach to conflict resolution. “As a team, we must listen openly and hear one another’s rationale to resolve conflicts. We must provide feedback in a calm and respectful manner and resolve conflict as a team focusing on the client objectively” (Team 1). Team two indicated “[conflict

resolution] will be completed through compromising and negotiating. If needed the matter will be brought forward to the team and conflict will be resolved by majority rules” (Team 2). Team three wrote they would “Work together as a team, knowing whose role is responsible for what, allowing discussion around conflict to hear all sides” (Team 3). Team four specified that “Personal conflicts to be discussed; situational/patient conflicts to be discussed as a group” (Team 4).

Each team developed a written statement expressing their team`s overall purpose which reflect the operationalizing of the TCI subscale of task orientation. Task orientation refers to the team`s shared concern for excellence (Beaulieu et al., 2014). Team one`s purpose was “to provide holistic, compassionate, strengths-based, patient-centred care.” Team two wrote their purpose as “to provide coordinated patient-centred care for stroke patients in collaboration with the patient, patient`s family, and the interprofessional team.” Teams three and four had the same purpose which was “to provide coordinated, patient-centred care for stroke patients at CECACC.”

#### **Research Question 4: Perceived Impact of the IPE Intervention on Collaborative Practice from the Perspective of Home Care Providers**

Participants indicated that the IPE intervention had a positive impact on their ability to collaborate with other home care providers on their teams. Seven themes emerged from the analysis: (a) recognizing the advantages of collaborative practice (b) learning with, from and about each other; (c) understanding and appreciating each other`s roles; (d) developing collaborative relationships with team members; (e) communicating effectively with team members; (f) developing respect and trust within the team; and (g) engaging in shared decision-making and goal-setting.



**Recognizing the advantages of collaborative practice.** Overall, participants were very positive about how they were collaborating in their teams. They indicated that it was easier for them to collaborate as a member of a formal team. This notion is reflected in the following quote:

One thing I have noticed is it's very difficult to try and get a hold of that person...like in one case the OT had been trying to arrange a joint visit with a SLP and it took forever for her to get a call back. Whereas in a group like this, it's a quick call or a quick email and you know you're going to reply or worst case you're going to see them at the meeting so in that way the collaboration was much better. (FG1, Participant 8)

Participants felt that collaborative practice is important and necessary for all home care clients not just those in the study.

I would like to see this collaborative practice with all of our clients. I think it's so beneficial, and I think there are a lot of people out there that have absolutely no one and it's like working together as a team really shows how much our health care system needs improvement I think, for people who stay at home. (FG 3, Participant 6)

Another participant indicated that working in teams was beneficial for providers, clients and caregivers.

Being in contact with PT, OT, the case manager, the PSWs, the nursing – I know if my mom was in that situation or a loved one, I know working with a collaborative team would be very beneficial, not only for the caregivers, but for the client, everybody around I think. Everybody knows what's going on. (FG 3, Participant 6)

One participant emphasized having gained a new understanding of collaborative practice and how interprofessional care differs from the common practice of multi-professional care, where individual providers work in parallel but don't necessarily come together as a team directly to develop a cohesive care plan.

I have worked in a lot of teams, and practice settings, I think that the piece that's different about this, is you've got one collaborative care plan, so one care plan that everybody has contributed to, and everybody is contributing to one set of

goals for this developed in collaboration with the client. I think a lot of times we've got interprofessional or interdisciplinary teams, you have an overarching couple of goals, but everybody has their own individual plan of care that they're all looking at. So, they don't necessarily all come together to perform one unified plan for the client and that I find different about this. (FG 2, Participant 4)

**Learning with, from and about each other.** Participants reported learning from each other because of the IPE intervention and improved their ability to work collaboratively. For example, they described learning from each other about various community programs and resources available to clients. They considered this information valuable and felt that learning about more resources would make them better providers. One provider highlighted the value of learning from other team members about various processes and options available to treat clients. An example shared during a CPRH discussion was “learning more about using a sliding board for patient transfers and how the board could be used in different ways for a specific client” (CPRH, Team 2).

Another example of how participants learned from each other was a PT who taught the team how to conduct an assessment using a standardized screening tool, and interpret the score to assess gait and balance. This experience allowed all team members to learn directly from the PT. The team found this particularly helpful for collaborating and developing client care plans and creating goals as illustrated in the following quotes from two different focus groups.

Well we need some of those assessments; we need the interpretation of that so it's important that there is somebody there to interpret like that. For example, they talk about Tinetti Score. I don't really know what that is right? So it's good that we had the physiotherapist there to explain what it is and how to incorporate that score or that assessment into the care plan and help us create goals and such right? (FG 2, Participant 1)

We had no patients at one point, or lack of things to talk about, so we did delve more into what people's roles were and what did it mean when this happened - and our physiotherapist [said] "forget that I'll show you, we're going to do it right

now," and he actually demonstrated from beginning to end a Tinetti assessment and what he would or would not do perhaps with that information. (FG 3, Participant 1)

**Understanding and appreciating all roles.** Several participants acknowledged that the IPE intervention enhanced their understanding of other providers' roles on the team and improved their ability to collaborate. They also indicated that the intervention helped them to appreciate other team members' knowledge, skills, and contributions to the care planning process.

It was nice when we had our first team meeting and we had everybody identify their roles ...you know what people's roles are but to hear their perspective of their role and what they are able to contribute is different right? It's better. Made it easier, I thought. (FG 3, Participant 2)

We have a better understanding with this study I would say, as to what each person's role actually is - where does it end, where does it overlap with someone else's role, and how can we use those strengths together to get the patient where they need to? That's what I've found as a benefit to everyone, like the provider, the families, like myself, it's just been for everybody it seems to be for me, in my opinion it would be a win. (FG 3, Participant 1)

Participants felt having a better understanding of each provider's role enabled the teams to defer specific aspects of client care to the provider with the most expertise. Discussions in the focus groups and monthly CPRHs specifically highlighted the key contributions that PSWs offer to the team and to client care.

I think it's great that the PSWs are part of this study and hopefully will be part of other studies; they are a really important role in the community. I used to be a PSW before I became a nurse, so I know exactly what they deal with day-in and day-out. I just wish they get recognized for what they really do and I think we all have different perspectives and respect for everybody's role. (FG 3, Participant 6)

Not only were the PSWs appreciated by the other team members, but they were also very eager to be included in the training and participate in the CPRHs. They appreciated the opportunity to share client information with other team members and

share the results of their assessments. One PSW stated “it is nice to hear the different perspectives and approaches to care ...” (CPRH, Team 1).

**Developing collaborative relationships with team members.** Team members indicated that getting to know the members of their team on both a personal and a professional level enhanced their ability to work collaboratively. This was different than their usual way of practice in the community where they often do not have the opportunity to interact with other professionals in person or develop close working relationships with them. Coming together face-to-face during the initial IPE training and ongoing meetings allowed providers to put a name to a face, and to get to know their team members both personally and professionally, to understand other team members’ roles in general and specific to the study. Participants felt that these opportunities created positive working relationships. The following quotes reflect the notion of how team members got to know each other through participating in the intervention.

We all know what each other is doing, whereas when you go in on your own, you know that they get other care providers in there for PT, or OT or whatever, but you never get to talk to them. You never know what they're doing in comparison to what you're doing, whereas in our meetings we all discuss everything all at once. (FG 3, Participant 4)

I think they (PSWs) felt comfortable meeting, because we've all met together, we've all been to meetings, so going out in the community or emailing and saying "yeah, I'll meet you on Friday at 9:30 and we can go over some exercises," they felt really comfortable which was really good I think. (FG 3, Participant 6)

One participant mentioned “with more clients, they might even learn more about each other because they might use their skills and knowledge in different ways not yet seen” (CPRH, Team 2).

**Communicating effectively with team members.** Providers felt that the IPE intervention improved their ability to communicate effectively with other team members,

which enhanced their ability to work collaboratively. Participants specifically noted that they were able to communicate in new ways and more effectively because of being a part of the IPE intervention. For example, when developing their team charters, the team members decided how they would communicate with one another during the CPRHs and in between case conferences (e.g., by email, phone conversations, teleconference).

Participants indicated that they would use email or phone to update each other on their clients' status and tried to keep each other in the loop regarding client concerns or issues. They noted how this facilitated care planning and meeting clients' needs better than their usual way of working. One participant stated.

Normally if I'm in the community and I have a problem with a client or there is an issue, I either call and leave a message with P1 or P2 or whoever the case manager is and sometimes we play phone tag, this way we can send them a quick email, or FYI. You know the case managers are going to be there. Friday we are going to do a joint visit with PT or OT and at the same time to do exercises. ...it is really great to quickly be able to do that, instead of waiting for a week or two to get things rolling. (FG 3, Participant 6)

Another participant commented that communication among team members was quick.

“Communication was really quick, so that's what was nice. You knew that the same day you'd be getting a word. Something.” (FG 1, Participant 7)

**Developing respect and trust within the team.** Participants indicated that the IPE intervention led to increased respect and trust with one another. They indicated trust and respect were reflected by listening to what others have to say, not interrupting one another, and valuing others' opinions and ideas. “All team members are participating in the client discussions. All opinions are respected, and the discussion is open” (CPRH, Team1). They felt that developing trust and respect were key to successful collaboration. Participant comments also indicated they felt that “trust and respect for each other is

necessary before collaboration can occur” (CPRH, Team 1). One team member elaborated: “they respected each other’s roles, and this contributes to trust among the team members.” They elaborated further “trust among the team would also enhance trust with the client if all the team [members] are consistent in their approach to the client’s care” (CRPH, Team 2).

**Engaging in shared decision-making and goal-setting.** Providers felt that the intervention had a positive effect on the ability of team members to engage in shared decision-making and goal-setting with other team members and clients, a key component of collaborative practice. Completion of the team charter required teams to discuss how they would make decisions collaboratively as a team. The teams felt that they were doing well with shared decision-making. One team highlighted the importance of ensuring that client goals were congruent with the team’s goals for client care. Decisions regarding goals were reached by identifying priorities and achieving consensus. Other teams spoke of generating different ideas amongst themselves, talking through the different options, and then presenting them to the client to see what fits best with the client’s goals. One care coordinator described how they worked with the OT and client to determine the best plan of care: “Okay let’s not rush in and send in the PSW or PT right away. Let’s work on this first because this seems to be the client’s main concern” (FG 1, Participant 8).

### **Research Question 5: Adapting, Implementing and Embedding the Intervention in Real-World Practice**

As shown in Table 10, most of the components of the IPE intervention were implemented as planned. Minor adaptations were made to the content and format of the initial IPE training sessions, the use of the OCAR framework for the care coordinator

training, an additional training session for PSWs who joined the study after the initial training session, and the use of a train-the-trainer approach for providers joining after the first month of the study. During the initial training session one large group activity was converted to a small group discussion to facilitate dialogue among participants and encourage discussion of how they would work together in their teams.

The care coordinator training session was modified slightly from the original agenda. This involved introducing the OCAR framework to clarify the PSW role and facilitate integration of the PSW into the team. Additional resources were provided to the care coordinators to assist them in leading their teams (e.g., sample team meeting agenda).

A key component of delivering any intervention successfully involves ensuring all team members receive the required training. An additional two-hour training session was conducted by the PI for new PSW participants who were enrolled in the study after the initial training session to replace PSWs who dropped out of the study. The PI delivered an adapted version of the IPE training session which included an overview of collaborative practice using the same resources provided at the initial training. Content included a review of the key components of collaborative practice such as role clarification, effective communication, role of PSWs as part of the interprofessional team, and use of the OCAR framework discussing the PSW full scope of practice. For feasibility reasons, this training was shorter and was provided only to the PSWs and did not include the large and small group activities included in the initial training session with all providers. The Co-PIs for the ACHRU-CPP intervention discussed the PSW role in the stroke intervention. All PSWs provided positive feedback on this training session.

They were receptive to learning more about collaborative practice and caring for older stroke clients.

For feasibility purposes, training on the IPE intervention for five providers who joined the study after the first month was provided by care coordinators and PSW supervisors using a train-the-trainer approach. This did not include the three PSWs who attended the separate PSW training session described above. Care coordinators or PSW supervisors provided information about the study to new providers using the standardized training materials and resources provided by the PI which were included in the training manual for the larger trial.



Table 10

*Feasibility of Intervention Implementation*

Time	Component	Delivered as Planned	Adaptation	Rationale
Baseline	Standardized IPE 3-hour training session on Collaborative Practice	Yes	Content and format of learning activities modified slightly during delivery. Change in delivery format from large group discussion to small groups to increase dialogue among participants.	Participant engagement in learning activities facilitates getting to know other participants.
	Standardized 2-hour training for Care Coordinators	Yes	Agenda for training modified slightly. Small group discussion and additional resources provided to care coordinators e.g. sample team meeting agenda, OCAR <sup>d</sup> framework highlighting the role of PSW <sup>e</sup> in inter-professional teams.	Framework could be helpful to care coordinators in enhancing IPE and collaborative practice within their teams.
2 months	CPRH <sup>a</sup> for all teams	Yes	None	
	Additional PSW Training added		Two-hour small group discussion with PSWs and PSW supervisors to support PSW role in the interprofessional stroke team. OCAR Framework used to guide the discussion and given to providers as a	Some PSWs changed after the initial training due to turnover within the employing agencies. Training was provided to ensure all participants received the same information to enhance understanding and engagement of PSW

Time	Component	Delivered as Planned	Adaptation	Rationale
	Training for new participants		resource. Train-the-trainer approach used for new study participants after the initial training and separate PSW training had been completed. Training was provided by the care coordinators and PSW supervisors.	role in the study.  Feasible approach to ensure new study participants received training related to the IPE intervention to support implementation and intervention fidelity.
3 months	CPRH Completed CPAT & TCI	Yes	None	
4 months	CPRH for all teams Presented 3- month CPAT & TCI results to individual teams	Yes	None	
6 months	CPRH Completed CPAT & TCI	Yes	None	

<sup>a</sup> CPRH – Collaborative Practice Reflective Huddle  
<sup>b</sup> CPAT – Collaborative Practice Assessment Tool  
<sup>c</sup> TCI – Team Climate Inventory  
<sup>d</sup> OCAR – Observe, Coach, Assess, Report  
<sup>e</sup> PSW – Personal Support Worker

### **Research Question 6: Advantages and Disadvantages of the Measures of Collaborative Practice**

The CPAT and the 19-item TCI were used to measure the change in the level of collaborative practice from three to six months following the initial IPE training. These measures appeared to be promising, in that participants in the study did not have trouble interpreting the questions, the scores represent well validated measures of collaborative practice, and the time frame for completion of these tools was relatively short (10 -15 minutes). However, some items were interpreted differently by team members. For example, item 21 on the CPAT, the meaning of “interprofessional development opportunities” was not clear to everyone. During the four-month CPRH, the group discussed potential examples of what this could mean. Additionally, one participant reported that they found the items on the TCI seemed clearer and easier to understand than items on the CPAT.

The CPAT was viewed as a good option given its strong psychometric properties and the fact that it was designed specifically to measure health care providers’ perceptions of collaborative practice within a health care context (Bookey-Bassett et al., 2016; Schroder et al, 2011). The TCI also has strong psychometric properties as described in the methods section and has been used in numerous fields (organizational psychology, management programs, oil industry) as well as healthcare (e.g., acute care, community-based and primary care settings) to assess perceived levels of team functioning and innovation. However, the TCI is not specific to health care teams and lacks items to measure patient involvement as a key component of collaborative practice (Beaulieu et al., 2014; Bookey-Bassett et al., 2016).

To assess the relationship between the scores on the CPAT and the TCI, a Pearson's correlation between the total mean scores for each instrument was performed. At both the three and six-month points there was a strong positive correlation between the two variables,  $r = .796$ ,  $n = 24$ ,  $p < .01$  and  $r = .748$ ,  $n = 24$ ,  $p < .01$  respectively. This indicates the two instruments are measuring related constructs and provides evidence of concurrent validity for the CPAT in this context (Streiner & Norman, 2003). Given the current emphasis on engaging patients as active participants in their care, the CPAT would be more likely to capture this aspect of collaborative practice. Overall, these results suggest the use of the CPAT alone could be used to measure collaborative practice in a future study.

#### **Research Question 7: Integrating and Sustaining the IPE Intervention**

During the focus groups, participants were asked what they thought was needed to integrate and sustain the intervention into usual clinical practice beyond the study period. Participants identified four key factors necessary to sustain the intervention in practice: (a) a stroke-specific interprofessional team; (b) protected time, space and funding for participants to participate in all components of the intervention; (c) ongoing IPE training and resources; and (d) technology to support collaboration among team members.

**A stroke-specific interprofessional team.** Participants indicated that having an interprofessional team approach to care is fundamental for integrating and sustaining the IPE intervention into usual clinical practice.

We get into [a] routine and if at the end of this study we are going back to working by ourselves in our own silos, there isn't as much motivation to implement this plan...but I think if there is actually a plan set in motion to collaborate more then we'll start. I think there's more motivation to look into ways we can change our practice and re-evaluate. (FG 1, Participant 4)

**Protected time, space, and funding.** Participants indicated that sustaining the IPE intervention into practice would require protected time and ongoing funding to enable home care providers to attend the training, case conferences (including CPRHs). One participant stated “funding, money, funding” (FG 3, Participant 6). Funding was necessary to bring the agencies and providers together for training to support the development of an interprofessional team because this was not a part of usual home care practice for this population in this setting.

Having designated time at the end of the ACHRU-CPP monthly case conferences allowed participants to engage in the CPRH activities. Participants indicated that having time allocated for reflection is necessary if this is to occur. This notion is reflected in the following quote. “I can honestly say it [reflection] wouldn’t have been done on my part without the meeting. [We] needed the meeting [time] to facilitate that [reflection]” (FG 1, Participant 8).

Participants also indicated that it was challenging to schedule team meetings given that there were multiple providers from multiple agencies and geographic areas. They noted this would require ongoing collaboration among the CCACs and service providers to sustain in real practice. A quote from one participant emphasizes this opinion.

The way that community is structured right now, multiple service provider organizations, how do you do that? So that something, like this is set up where you've got a single organization working with a CCAC, so you bring your team together, you can allocate time, and you've got organizational agreement. But if you've got multiple, different [organizations]... how do you do that? That's something I think would need some significant contemplation. (FG 2, Participant 4)

The timing of the meetings (case conferences) was important to participants. Most of the case conferences and CPRHs were held in the early afternoon. However, some participants felt it would be better to have these meetings (case conferences & CPRHs) in the morning because it would allow them to better organize their care: “[I] think the time of the meetings, earlier would have been better. Have the meetings earlier in the morning [so] that way you can see all patients in the afternoon” (FG 1, Participant 8). In contrast, another participant comment indicated that morning meetings would not work for PSWs which would mean not all team members would be present. “...morning visits wouldn’t be any good for PSWs to attend because they’re so busy getting people up before noon. There’s no way, it’s quieter in the afternoon” (FG 3, Participant 6). Participants felt that coordinating and scheduling of team meetings should consider provider workload, minimizing interruption to client care, and travel time for staff.

**Need for ongoing training and resources.** Participants highlighted the need for strategies to provide ongoing training for new team members to be able to continue to integrate the intervention in practice. “Training if people leave a program, what happens if somebody brand new comes on, and they need to fill in right away, how does that look? How does that work?” (FG 3, Participant 1).

Resources such as the questions to guide the reflection were considered useful for implementation of the CPRHs. One participant suggested having the questions was helpful but added “try to keep the questions as simple and as few as possible to still get the info you want” (FG 1, Participant 7).

**Use of technology to support team and client collaboration.** Participants identified the potential for technology to further support collaborative practice among

team members as well as clients and family caregivers. One participant suggested including the use of technology for team meetings.

Equipment, technology, [and] training on how to use those, if you're going to be using virtual ways, or Skype or those kinds of things as part of your practice, to talk to each other when you can't get there. You know, increase the likelihood that you're always going to have people attendance cause they're not worried if they can't get there, they are still there....(FG 3, Participant 1)

Another participant spoke about the need for a single place for all providers to communicate with each other. “I don't know technology how that would work, or if it's even possible but certainly then being able to communicate to a certain spot that we could all see” (FG 3, Participant 1). Others mentioned being able to use technology such as teleconferences to involve clients in the team. “We probably could [include clients using technology]. At least they are part of the discussion of their plan and their goals because it is their life, right?” (FG 3, Participant 6)

Yeah, I mean, and then you can build on that I mean there are certain programs now that are using technology like that to capture certain information and share it with the team and maybe that's something that would be built into a plan, how they could communicate with you, the patients even. (FG 3, Participant 1)

Even having them [patients] on the phone when we're in a meeting; we haven't had that opportunity. So having a conversation we could be in a meeting and we're thinking this is what his priority goal is, and he might be on the phone saying, ‘you know what, that's not really, not what I want to focus on now but something different.’ So might be an opportunity. (FG 3, Participant 6)

### **Summary of Results**

Study results provide evidence for the feasibility, acceptability, effectiveness and perceived impact of the IPE intervention on collaborative practice for the home care provider participants. Adaptations, facilitators and barriers to implementation and

strategies for integrating and sustaining the intervention in practice were identified. Study methods and procedures were appropriate and feasible. These results are interpreted and discussed in the context of the current literature in Chapter 5.



## **Chapter 5**

### **Discussion**

The aim of this study was to evaluate the feasibility and acceptability of a new, theory-based IPE intervention, and to explore its effects on collaborative practice for an interprofessional stroke-specific team of in home care caring for older adult stroke survivors with MCC. The IPE intervention was implemented and evaluated within a larger pragmatic randomized controlled trial, the aim of which was to evaluate the effects and costs of the ACHRU-CPP.

To our knowledge, this is the first study to demonstrate the feasibility and preliminary effectiveness of an IPE intervention in supporting collaborative practice for an interprofessional stroke-specific team of in home care caring for older adult stroke survivors with MCC. Most IPE interventions have been implemented within pre-licensure programs or within acute care, rehabilitation or primary care settings (Brashers et al., 2015; Curran, Sargeant & Hollett, 2007; Ploeg et al., 2017). In addition, only 37.8% of study participants reported that they had ever received IPE training. These omissions are important given the potential effectiveness of IPE interventions in improving collaborative practice. In addition, collaborative practice is part of Canadian best practices for stroke care. Policy makers and older adults living in the community expect and want interprofessional practitioners who have knowledge of other practitioners' roles, resources, and the various sectors within current health care systems (Canadian Home Care Association, Canadian Nurses Association & the College of Family Physicians of Canada, 2016; Shield, Enderby, & Nancarrow, 2006).

Moreover, many home care providers currently do not work in “formal” or designated interprofessional teams when providing care to older stroke survivors living with MCC (Markle-Reid, Orridge, et al., 2011). This study provides knowledge of the feasibility and impact of an IPE intervention within a stroke-specific interprofessional team. This study also provides insight into what components of the IPE intervention home care providers found feasible and acceptable to implement, and the barriers and facilitators to implementing the intervention in this context. In a recent systematic review on the impact of IPE on collaborative practice, Brashers et al. (2015) acknowledged the lack of focus on the design and implementation of IPE interventions. This study addresses this gap by examining the feasibility and acceptability of the intervention and offers insight into the systematic development, implementation, and evaluation of an IPE intervention to support collaborative practice in home care for stroke rehabilitation.

In addition, this study addressed some of the gaps identified by systematic reviews evaluating the effectiveness of IPE interventions on collaborative practice, by incorporating theory, using both qualitative and quantitative data collection methods, exploring the effects of the intervention over a six-month period, and using reliable and valid instruments to measure collaborative practice.

### **Feasibility and Acceptability of the IPE Intervention**

The study results provide evidence for the feasibility of the IPE intervention. The feasibility and acceptability of the IPE intervention were confirmed by the high initial recruitment rate of 96.5%, positive participant feedback and high level of participant engagement in study activities. Further evidence of the acceptability of the intervention to

participants is the high level of engagement and attendance at the initial training session (100 %), the CPRHs (84.6 to 100 %), and the care coordinator training session (100 %).

The results of the W(e)Learn assessment and the qualitative findings from the CPRH and focus group field notes and focus group transcripts suggest that participants valued learning about IPE at the initial IPE training session and during the CPRHs. This is consistent with other studies where health care providers working in various practice settings (acute care, palliative care, community stroke rehabilitation, and outpatient settings) have found IPE to be a positive learning experience and improves collaborative practice (Bain et al., 2014; Brajtman et al., 2012; Cheung et al., 2012; Jones et al., 2012; McKellar et al., 2011). Participants also appreciated and confirmed the benefits of the care coordinator training, CPRHs, and outreach visits for improving their ability to collaborate within their teams.

Although the initial recruitment target of greater than 80% was met, the attrition rate of 29.7% over the six-month study period was higher than the recommended rate of less than 20% (Fewtrell et al., 2008). Attrition was primarily related to the turnover rate of staff within the participating community agencies. The literature indicates that recruiting community-based health care professionals as study participants is often challenging (Leblanc et al., 2011; Markle-Reid, Orridge, et al., 2011), and staff turnover in the home care sector is common (Butler et al. 2010; Keefe, Knight, Martin-Matthews, & Legare, 2011). It is noteworthy that the majority of drop-outs in this study were PSWs and that turnover amongst the PSWs was 40% over the six months. Frequently cited reasons for turnover in the home care sector include: better wages, improved benefits, predictable work schedules, and more training in other work settings (Butler et al., 2010;

Nugent, 2007). However, the reasons for turnover of home care participants in this study are unknown.

Researchers from various fields highlight the importance of examining the feasibility and acceptability of an intervention to understand the uptake of the intervention in the practice setting, to identify any barriers to implementation of the intervention in routine practice, and to identify the need for adaptations prior to conducting a larger pilot study or full trial (Feeley et al., 2009; Sidani & Braden, 2011; Thabane et al., 2010).

### **Adaptation and Implementation of the IPE Intervention**

Overall, the intervention was implemented as planned with minor adaptations to the content and format of the initial IPE training session. Minor adaptations included use of small group activities versus large group discussion in the initial training, use of the OCAR framework for the care coordinator training, and an additional training session provided to new PSWs who enrolled in the study after the initial training session. Another adaptation was that the IPE intervention was delivered using a train the trainer approach to providers who were enrolled in the study after the initial IPE session. These adaptations were made to enhance the feasibility of implementing the intervention into home care practice. The importance of adapting and tailoring interventions in terms of content and/or process is needed to enhance the feasibility of implementing the intervention into everyday practice (Bain et al., 2014; Bajnok et al., 2012; McDonald et al., 2011; Sidani & Braden, 2011; Thabane et al., 2010).

Several key facilitators to implementation of the IPE intervention were identified, including: (a) funding for implementation of the ACHRU-CPP intervention; (b) the

involvement of leadership and administrative staff prior to and throughout the six-month study period; (c) protected time for study activities; (d) the provision of multiple resources to support implementation of the intervention; and (e) continuity of the four care coordinators.

Consistent with the literature regarding facilitators to practice change, implementing IPE requires funding, leadership support, and designated resources (Curran et al., 2007; Damschroder et al., 2009; McGrath et al., 2008; Silver et al., 2016). In this study, funding to compensate providers for their time to participate in research activities and training was provided through the larger RCT. All participants were compensated for any training or team meetings they attended as part of the ACHRUCPP. Funding for staff replacement to allow staff attendance at IPE training was also a necessary component for program success.

Leadership support at the level of the CCAC and the provider agencies was a key factor that facilitated implementation of the intervention. Leaders and administrative staff coordinated the scheduling of team meetings, encouraged staff participation, and provided time and space for teams to meet. Leadership support and a supportive organizational culture are considered essential for successful implementation and sustainability of IPE interventions (McKellar et al., 2011; Nisbet, Lincoln, & Dunn, 2013; Vanderzalm et al., 2013).

Time, scheduling, and competing priorities are well-documented barriers to ongoing learning for health care providers (LeBlanc et al. 2011; Owen et al., 2014). For IPE to be effective there is a need for support to plan meetings, protected time and funding so staff can be paid for their time to attend meetings and participate in the

intervention activities (Bajnok et al., 2012). Furthermore, appropriate structures, processes and resources must be in place for effective collaborative practice to occur (Bajnok et al., 2012). In the present study, all training and team meetings including the CPRHs were scheduled by administrative staff at the CCAC in collaboration with the care coordinators.

Providing multiple resources to support the intervention helped to facilitate successful implementation of the intervention. The standardized training manual, team charter, sample agenda and questions to lead the CPRH discussions were identified as factors that facilitated implementation of the IPE intervention. This finding is consistent with the literature in that the use of intervention manuals and training resources are known to enhance the implementation of interventions in general (Sidani & Braden, 2011). To be effective, and to support collaborative practice among home care providers, IPE interventions should include ongoing activities and resources to support collaborative practice and team development.

In addition, having consistent care coordinators, who acted as champions, throughout the six-month study period provided continuous leadership for each of the teams. This allowed for ongoing team development and maintenance of effective communication and relationships among team members. The literature acknowledges the need for local champions to facilitate the implementation of an intervention or best practice guideline (Damschroder et al., 2009; Ploeg et al., 2014).

Two key barriers to implementation of the IPE intervention were identified that related to implementation of the larger ACHRU-CPP intervention. These included unanticipated delays in recruitment of older adult stroke survivor participants, and the

turnover of home care provider participants. The unanticipated delay in recruitment of older adult stroke survivors meant that the teams delivering the ACHRU-CPP had fewer clients to discuss and fewer opportunities to collaborate in the early phases of the study. Regular team meetings to discuss clients are important for enhancing team collaboration (Chouliara et al., 2013; Nancarrow et al., 2013).

A second barrier to implementation of the IPE intervention was the high rate of participant turnover. Turnover amongst the PSW required providing additional training to new providers as they joined the teams and affected team functioning and collaboration. Turnover was not specific to the IPE intervention but rather to the PSWs leaving their employing agencies. Turnover of PSWs is recognized as an ongoing health human resources challenge for home-based care (Saari et al., 2017).

### **Feasibility of the Study Methods**

Study methods were considered feasible, appropriate and found to yield quality information within the expected time frame. We established that the study methods are feasible and could be conducted as planned.

### **Perceived Impact and Effectiveness of the IPE Intervention on Collaborative Practice**

Providers highlighted the benefits of the IPE intervention on collaborative practice, including: improved role understanding, enhanced communication among team members, and shared decision-making with team members, stroke survivors and their family caregivers. These findings are consistent with other studies examining the perceived impact of IPE on collaborative practice in inpatient and community rehabilitation stroke settings (Frisby et al., 2015; McKellar et al., 2011; Selby et al.,

2011) and for chronic disease management (e.g., arthritis) in outpatient settings (Bain et al., 2014).

Participants reported that they gained a new appreciation for and understanding of all team member roles. They valued learning from each other and respected the expertise of each team member. These findings concur with those of other studies that identified the positive effect of IPE on enhancing role clarity in acute and primary care settings (Pauzes & Reeves, 2010). Participants in this study continued to learn with, from and about each other throughout the six months. IPE occurred as an ongoing process through the formal learning/training components and informally between providers through continuing communication and collaboration within their teams. During discussions in the CPRHs and focus groups, participants provided examples of how they continued to learn about team member roles beyond the initial training and were able to apply this knowledge in caring for older adult stroke survivors and their family caregivers. These results extend the findings from other studies that show that IPE is important in increasing awareness of other health care provider roles and responsibilities for stroke care (Frisby et al., 2015; McKellar et al., 2011; Selby et al., 2011).

Qualitative data from the CPRH field notes and the team charters suggested that participants were demonstrating collaborative practice behaviours throughout the six-month study period. For example, when teams reflected on what they were doing well, they frequently reported communicating effectively and sharing client information. Participants also described engaging in shared decision-making with each other and with clients and caregivers, and brainstorming ideas for referrals and provided recommendations for other services/programs to clients. These behaviours are consistent



with collaborative practice behaviours (Bookey-Bassett et al., 2017; CIHC, 2010). Providers also reported that the intervention resulted in changes in their practice, including developing new ways of working together, such as joint visits, creative problem-solving (e.g. sharing tips and strategies among providers for working with specific clients and families), and shared assessments.

Although this feasibility study was not intended to assess the impact of IPE on client outcomes, during the CPRHs, providers perceived that the IPE intervention had a positive impact on how they had improved communication with clients and families and were engaging clients and family caregivers in care planning; both which are key components of collaborative practice (Bookey-Bassett et al., 2017; Byrnes et al., 2012; CIHC, 2010; Reeves et al., 2016).

The study provides initial evidence for the effectiveness of the IPE intervention on collaborative practice. The CPAT scores within the domains of communication/information exchange, decision-making/conflict management, community linkage and coordination of care increased from three to six months following the initial IPE training. The TCI score in the area of task orientation also improved from three to six months. These results are consistent with other studies evaluating the effects IPE interventions on collaborative practice (not stroke-specific) in mental health, acute care and rehabilitation settings (Byrnes et al., 2012; Paterson et al., 2013; Watts, Lindqvist, Pearce, Drachler, & Richardson, 2007). It is possible that the scores on these aspects of collaborative practice improved the most because these topics were addressed as part of the intervention. For example, the initial three-hour training session, the care coordinator training, and the CPRH activities included discussion of effective

communication, conflict management, shared decision-making These findings add to the growing body of evidence regarding the potential for IPE to improve multiple domains of collaborative practice (Bajnok et al., 2012; Byrnes et al., 2012; Reeves et al., 2016).

The high scores on the CPAT domains at both three and six months following the initial training are consistent with other studies evaluating the effect of IPE interventions on collaborative practice in acute care, mental health and rehabilitation settings (Byrnes et al., 2012; Paterson et al., 2013). One possible explanation for the high scores at three months is that participants had already developed relationships and established communication strategies for their teams as a result of the initial IPE training, completion of the team charters, and participating in the CPRH at 2 months.

### **Advantages and Disadvantages of the Measures of Collaborative Practice**

We evaluated the performance of the CPAT and TCI to determine the most appropriate primary outcome for a future RCT. The CPAT and the TCI were well received by participants. Both measures assessed different aspects of collaborative practice and allowed the teams to identify areas of strength and areas for further development within their teams. Assessing the relationship between the scores on the two measures indicated that the CPAT alone could be used as an appropriate measure of collaborative practice in the home care setting. Using multiple measures always poses the risk of respondent burden however study participants were able to complete the measures as planned with no major issues.

### **Integrating and Sustaining the Intervention in Practice**

For any new intervention to be sustained in practice, it is important to engage both leaders and front-line staff in the process to ensure acceptability and to assess capacity for

implementation (National Health Service, 2007; Sidani & Braden, 2011). Participants in this study made several recommendations regarding how to integrate and sustain the IPE intervention into home care practice. One important factor is that the IPE intervention should be relatively easy to implement and should be part of other existing activities. The literature suggests that less complex interventions are more likely to be implemented and scaled (Greenhalgh, Robert, MacFarlane, Bate & Kyriakidou, 2004). In this study, the time for the CPRH was built into the planned monthly case conferences as part of the ACHRU-CPP. Thus, the time for the CPRH did not have to be scheduled separately perhaps enhancing the feasibility and acceptability of implementing the IPE intervention.

Second, participants suggested the potential value of technology to support collaborative practice (e.g., use of apps and “Skype-like” technology). The use of apps to facilitate efficient communication among team members and across provider agencies was recommended. Participants felt that using “Skype” would allow some team members to join the CPRHs remotely saving commuting time, which is an ongoing challenge for home care providers. For sustainability, consideration should be given to adapting the IPE intervention to include the use of technology to enhance feasibility, acceptability and participant engagement

Third, participants indicated that establishing and communicating clear performance expectations and accountability for collaborative practice would be necessary to sustain the intervention in practice. Finally, ensuring all relevant staff members receive training to implement the intervention in routine practice is critical to sustainability. All the findings above are consistent with features that enhance the

sustainability of interventions in general (Health Quality Ontario, 2011; National Health Service, Institute for Innovation and Improvement, 2010).

### **Implications**

There are several implications arising from this study that should be considered in the design, implementation and evaluation of future IPE interventions to support collaborative practice in the home care setting.

**Education.** Study findings provide initial evidence for the benefits of post-licensure IPE for an interprofessional team of home care providers. More than half of the study participants indicated that they had not received any previous training in IPE and collaborative practice. This is not surprising as IPE has only recently been integrated into some pre-licensure training for health care professionals (Murdoch, Epp & Vinek, 2017). Our results provide the first evidence for the effectiveness of post-licensure IPE in the home care setting to support providers in learning how to work collaboratively in interprofessional teams (Curran et al., 2007; Owen et al., 2014).

For IPE to be effective, it is recommended that the content be contextually relevant (MacDonald et al. 2009) and informed by the needs and trends of the current health care system (Blue et al., 2015). This means involving relevant stakeholders in co-designing and/or adapting the IPE intervention, but also recognizing that team composition may vary based on geographic locations and individual agency policies. Consistent with adult learning theory (Knowles, 1984), for learning to be meaningful, content should address the unique needs of learners and the setting in which the learning takes place. In this study the learners were home care providers who were involved in delivering the ACHRU-CPP intervention. Hence, it was important for participants to

understand each other's roles as they related to the ACHRU-CPP intervention compared to usual practice. As a result, the learning that occurred was contextually relevant in that participants learned about the roles of the all the team members specific to the care of older stroke survivors living with MCC and their family caregivers.

A recent Canadian report indicates regulated and unregulated home care workers need and want opportunities to acquire the knowledge and skills to work collaboratively to meet the increasingly complex needs of older adults receiving home care (Better Home Care Report, 2016). As such, there is a need to provide IPE programs and practicum opportunities at all levels including: professional development across the home care sector through specialized training and continuing education programs as necessary (Better Home Care Report, 2016).

The results of this study provide initial evidence for the feasibility and effectiveness of IPE in improving collaborative practice among an interprofessional team that includes PSWs. Given that PSWs provide most of the home care services to older adult stroke survivors, it is imperative that PSWs are included as members of the interprofessional team and all team members receive appropriate training to enable them to fully engage in collaborative practice (Giosa et al., 2015; Saari et al., 2017). The training therefore, needs to include information about the PSW role and strategies to ensure that PSWs are integrated into the interprofessional team (e.g., OCAR framework). Furthermore, care coordinators need to understand the roles of regulated and unregulated providers to delegate appropriate care (Lamb et al., 2015). Finally, there is a need for PSWs to have opportunities for IPE in both their formal training and continuing

education programs so that they can learn about other health care provider roles and strategies to support collaborative practice.

Current guidelines for the development of IPE programs recommend including providers in the co-design and delivery of IPE programs (CAIPE, 2016). Future research is warranted to ensure that providers are engaged in further design and implementation of the IPE intervention. Although the present study did not involve directly in co-designing the IPE intervention, a video was used in the initial IPE training session to incorporate a stroke survivor's perspective and experience with an interprofessional team. Future studies should consider involving clients and caregivers in adapting, implementing and evaluating the IPE intervention to ensure that it is acceptable and meaningful in different populations and settings (Manafò, Petermann, Mason-Lai, & Vandall-Walker, 2018).

**Practice.** Study results have implications for implementing IPE in other practice settings, and for the role of the nurse in supporting and promoting IPE and collaborative practice. IPE is a complex process requiring the use of multiple strategies to mitigate barriers such as limited time and complicated scheduling (Owen et al., 2014). The IPE literature suggests that interprofessional teams can only maintain effective collaborative practice with ongoing time to reflect, evaluate and enhance their ability to work together (Bajnok et al., 2012; Byrnes et al., 2012; Orchard et al., 2017a; Reeves et al., 2006). In addition, it is important for teams to have protected time as part of routine practice for ongoing education related to team development (Orchard et al., 2017a; Salas et al., 2008).

“Health care professionals who comprise ‘care teams’ for complex patients can only support collaborative practice if institutions are prepared to provide professional development sessions” (Orchard, 2010, p. 253). In this study, participants were given

protected time for training, and to engage in reflective practice and assess their team's collaborative practice through the CPRHs. This strategy is consistent with those of recent studies implementing IPE to support collaborative practice and supports the finding that adequate time for team development should be embedded in practice (Bajnok et al. 2012; Reeves et al., 2006).

The literature identifies other key enablers to successful implementation of IPE interventions in practice, including appropriate human resources such as practice leaders, champions, and facilitators with expertise and training in IPE (MacDonald et al., 2009; Sargeant, 2009). In this study, the care coordinators acted as champions to support implementation and lead the study activities. Furthermore, the PI, who was also the facilitator for the initial IPE training session, had additional training and experience in leading IPE programs. These findings highlight the need to identify local champions within organizations and trained facilitators to implement the IPE intervention and build capacity for collaborative practice (Cranley, Cummings, Profetto-McGrath, Toth, & Estabrooks, 2017; Newton, Wood, & Nasmith, 2012; Purvis, Moss, Densienko, Bladin, & Cailhac, 2014; RNAO, 2013). Another strategy to consider is to develop a train-the-trainer approach to ensure new participants receive the necessary training to support intervention implementation.

Nurses are well-positioned to lead interprofessional teams because of their scope of practice and varied roles within and across health care sectors (Orchard, Sonibare, Morse, Collins, & Al-Hamad, 2017a). Consistent with professional practice standards, nurses in formal leadership roles are expected to contribute to and advocate for an organizational culture that supports professional growth, continuous learning and

collaborative practice (Orchard et al., 2017a). Although nurses report feeling responsible for creating, leading and sustaining interprofessional teams, they often do so with limited support (Bajnok et al., 2012). Care coordinators in this study, who were all RNs, found the IPE training and resources (e.g., team charter, sample agenda) helpful for leading their teams and supporting collaborative practice. Hence, there is a need for home care organizations to provide nurses and other health professionals who assume a care coordinator role with the knowledge and skills required to lead an interprofessional team.

Regardless of the practice setting, the literature consistently reports that the success of any IPE initiative depends on the commitment from leaders in the organization (Byrnes et al., 2012; Curran et al., 2007; Oandasan & Reeves, 2005; Owen, 2014). The ongoing support of both senior and middle management staff at the CECCAC and the provider agencies were critical to the success of this IPE intervention. To facilitate implementation, researchers should consider the following strategies: (a) establishing an implementation team (steering committee) of key leaders, front line providers, and other support staff prior to initiating the study and (b) schedule regular (e.g., monthly) meetings between the researchers and the site leadership team to monitor implementation and to identify any challenges and potential solutions. These strategies are recommended for supporting practice changes (Damschroder et al., 2009; Ploeg et al., 2014).

**Research.** Future research is warranted to explore the feasibility and effects of the IPE intervention in other contexts and settings. This study and the intervention were supported by the larger study therefore, several elements must be considered prior to implementing the intervention in other contexts. Implementing the intervention in the home care sector for stroke care may only be feasible if the stroke care trajectory includes



referral of stroke survivors to areas where dedicated interprofessional CBSR teams exist (Allen, 2016). Given this IPE intervention was developed for implementation with specific teams, it would be important to look for practice settings where there is an established interprofessional team approach to care or to support the development of an interprofessional team in home care if they do not exist. Alternatively, if implementing the intervention in other community settings such as primary care and with other patient populations (e.g., chronic diseases) a mixed-methods, single-group, pre-post design with a larger sample may be warranted to more accurately assess intervention feasibility, determine effect size estimate, and further adapt the intervention before conducting a small-scale pilot RCT followed by a full-scale pragmatic RCT (Bowen et al., 2009, Thabane et al., 2010).

There are many unanswered questions that suggest directions for future research. This study evaluated the intervention from the home care providers' and supervisors' perspectives. Future research is warranted that examines the perspectives of senior organizational leaders, stroke survivors, and family caregivers on the feasibility and impact of the intervention. Moreover, future studies should also explore how to involve home care providers, stroke survivors with MCC, and their family caregivers in adapting implementing, and evaluating this IPE intervention (CAIPE, 2016; Ploeg et al., 2017).

Implementation of this intervention was supported by funding from the larger trial. Like other educational interventions, the main costs for the IPE intervention were related to staff time to attend the training and the case conferences, administrative time to coordinate scheduling of the training and the case conferences, and the cost of training materials (Curran et al. 2007). Future studies with an economic evaluation are needed to

assess all of the costs of implementing the IPE intervention. Future qualitative descriptive studies could explore the use of technology such as e-learning modules as a strategy to increase the feasibility of implementing the intervention and reducing the cost.

**Policy.** International and national reports highlight the importance of collaborative interprofessional team approaches to care delivery (IOM, 2015; Sinha, 2013; WHO, 2010). Policy documents and reports such as “Aging in Place” (Government of Canada, 2017), the “Seniors Strategy” (Sinha, 2013), “Better Home Care Now” (Canadian Home Care Association, 2016), and models for CBSR highlight current trends toward a shift of health care services to the home and community sector (Markle-Reid et al., 2017). For this shift to occur, financial resources along with appropriately trained staff are required to support collaborative practice models.

Recent accreditation standards for health professional education programs have resulted in an increasing emphasis on IPE to support collaborative practice (Accreditation Canada, 2017; Canadian Association of Schools of Nursing, 2014; Canadian Association of Canadian Medical Schools, 2015). Although variable across sites, there have been numerous IPE initiatives to support health professional students and practicing health care professionals in learning to work in collaborative teams (IOM, 2015). Accreditation standards for home care and Canadian best practice standards for stroke care also call for collaborative approaches to care delivery requiring a prepared and competent team (Accreditation Canada, 2016; Cameron et al., 2016). Individual practitioners, home care agencies and professional associations should advocate for appropriate resources to support the delivery of IPE in the home care sector to support collaborative practice in caring for older stroke survivors with MCC and their family caregivers.

### **Strengths and Limitations of the Study**

**Strengths.** Several strengths related to the intervention should be noted. There are six novel features of this IPE intervention that differentiate this intervention from other IPE interventions for stroke care literature. First, this intervention was specifically implemented with four interprofessional CBSR teams whereas, other IPE interventions have been provided to individual health care professionals or students working in stroke care settings (Frisby et al., 2015; McKellar et al., 2011; Selby et al., 2011; Vanderzalm et al., 2013) but not necessarily working together in designated interprofessional teams.

Second, this multi-component IPE intervention was consistent with current guidelines for IPE in that the intervention consisted of multiple components and delivery methods (CAIPE, 2016) and was implemented over a six-month period. Most IPE interventions in stroke care and other settings have been of shorter (< 3 months) duration (McKellar et al. 2011; Reeves et al., 2017). Throughout the six-month period, participants got to know one another personally and professionally. Study activities required ongoing interactions among participants within their teams which further supported collaborative practice.

Multi-component interventions are likely to be more effective than single component interventions (Olson & Bakken, 2013). The study also allowed for evaluation of both immediate (baseline) and longer-term impact (at three and six months) of the IPE intervention addressing another gap identified in the literature (IOM, 2015; Reeves et al., 2006).

The third novel aspect of this IPE intervention was the collaborative practice reflective huddle. While other IPE interventions involve reflection on collaborative

practice at the individual level (Vanderzalm et al., 2013), this IPE intervention involved purposeful reflection, as a team, using a structured process to enhance awareness of collaborative practice within the team. Following the care coordinator training, care coordinators used a standardized set of questions to lead the CPRH discussions for their specific teams. Participants perceived group reflection as more beneficial than individual reflection. Research in the business sector has found that teams who engaged in team reflection reported higher team effectiveness (Domke-Damonte & Keels, 2015). Evidence from the present study adds to the health care literature which suggests that interprofessional teams can only maintain effective teamwork with ongoing time to reflect, to evaluate and enhance their working together (Orchard et al., 2017a; Reeves 2009).

A fourth innovative feature of the IPE intervention is that it is well grounded in theory. Two conceptual frameworks, the W(e)Learn and the CIHC, were used to guide the systematic development, implementation and evaluation of the IPE intervention (Casimiro et al., 2009; CIHC, 2010). Implementing a theory-based intervention addresses one of the major gaps identified in the broad IPE literature and the IPE for stroke care literature (Hean et al., 2012; Liu & Tsasis, 2017; McKellar et al., 2011; Owen et al., 2014; Reeves et al., 2013, 2017). Theory-based interventions are superior to non-theory-based interventions (Painter et al., 2008). Theories enhance study design because they can direct the focus of evaluation, guide the selection of appropriate outcome measures, and lead to more robust studies suitable to the context one is trying to understand (Anderson, 2016; Liu & Tsasis, 2017). Theory is an important consideration in the

development of complex interventions and enables the identification of several hypotheses that can be tested in a future trial.

The W(e)Learn framework (MacDonald et al., 2009) provided a good foundation for designing, implementing and evaluating the feasibility and acceptability of the IPE intervention. A limitation of the W(e)Learn framework is that it does not specifically address the competencies for collaborative practice. As a result, the CIHC framework (CIHC, 2010) was also used to inform the content of the different intervention components (e.g., initial training and care coordinator training). The CIHC framework was useful in that it specifies competencies for collaborative practice across all settings and for all professions. Hence discussion of the competencies such as role clarification, team functioning, and conflict resolution were included in the content of the IPE intervention.

Both conceptual frameworks provided a lens to guide data analysis (e.g., naming themes) and to interpret effectiveness and perceived impact of the intervention. Study findings confirm collaborative practice as an outcome of IPE. Furthermore, results indicate that collaborative practice comprises multiple components supporting the CIHC framework. Findings also validate socio-constructivist theories in that IPE is an ongoing process that occurs through interaction with others and through active dialogue versus passive activity.

A fifth unique feature of this IPE intervention was that it included additional training for care coordinators to enhance their capacity for leadership and to facilitate IPE and collaborative practice within their teams. Participant comments during the CPRHs demonstrate this was achieved. Care coordinators assumed a leadership role within the

teams and acted as champions in facilitating ongoing IPE and collaborative practice within their teams. These results support the notion that building capacity for ongoing IPE in practice may support implementation and sustainability of the intervention (World Health Organization, 2010b).

A systematic review examining the effectiveness of interprofessional health care teams on the health and well-being of community-dwelling seniors indicates that case managers/care coordinators are key players in supporting collaborative practice and implementing interprofessional interventions in home and community settings (Gougeon, Johnson, & Morse, 2017). Yet, other studies in IPE for stroke care do not discuss if or how care coordinators are trained to support interprofessional teams. Care coordination relies on the care coordinator's ability to articulate their role clearly with other professionals and to have a clear understanding of other providers' roles (Orchard, Sonibare, Morse, Collins, & Al-Hamad, 2017b; Prokop, 2016).

A final innovative aspect of this intervention was the inclusion of both regulated and unregulated providers in the IPE intervention. To date, there has been limited recognition and inclusion of unregulated providers, such as PSWs, in IPE interventions either the general IPE literature or the IPE literature for stroke care (Giosa et al., 2015). Given that most of home care for older adult stroke survivors is provided by PSWs, not regulated health care professionals, training PSWs alongside other members of the CBSR team is important to ensure all providers have the knowledge and skills necessary to support older stroke survivors and their family members as they reintegrate into the community.

The results of the focus groups suggest that the HCP's understood and valued the role of the PSW. The use of the OCAR framework, as part of the care coordinator and PSW training, was perceived as helpful for clarifying the PSW role and for engaging other team members in dialogue about the PSW scope of practice broadly and in relation to caring for older stroke survivors with MCC and their family caregivers. In addition, during the CPRHs, PSWs spoke about their background education, usual roles, knowledge and skills which allowed the other professionals to gain a deeper understanding of the PSW role. Thus, this study provides new knowledge about strategies to include PSWs in IPE training for CBSR teams, such as obtaining support from managers and PSW supervisors at the provider agencies, having protected time, and offering separate training for new PSWs if they joined the study after the initial training session. These results demonstrate that it was feasible to include PSWs in the IPE intervention.

Several strengths related to the study design and research methods should be noted. First, the intervention was implemented and evaluated in a real-world setting as part of a larger pragmatic trial within the existing health care system and using existing resources (Patsopoulos, 2011). As a result, the facilitators and barriers to implementation identified in this study are likely to be indicative of what would occur if the intervention were implemented in a real practice setting

Second, several strategies were used during implementation to enhance intervention fidelity. These included the use of standardized training sessions and the provision of training manuals to participants, ongoing monitoring of participant involvement in study activities, and the need to adapt the intervention as part of

implementation. Fidelity is important for determining why the intervention may or may not have produced the intended outcome (Sidani & Braden, 2011).

A third strength relates to the conceptualization and measurement of collaborative practice. Collaborative practice was defined based on a concept analysis relevant to chronic disease management for community-living older adults (Bookey-Bassett et al., 2017). Few studies evaluating IPE interventions include a clear definition of what collaborative practice means thereby limiting its measurement. This study used two reliable and valid instruments that align with the conceptualization to measure collaborative practice and enhance the validity of the results.

A fourth strength was the use of a variety of theoretically-based teaching approaches to meet different participant learning needs and styles. These included didactic lecture, small and large group discussions, use of patient video, and reflective practice. Finally, the use of both qualitative and quantitative data collection and analysis allowed for a more complete understanding of the feasibility, effectiveness, barriers, and facilitators of implementing the IPE intervention to support collaborative practice among the home care providers CBSR teams (Ploeg et al., 2017; Reeves et al., 2017).

**Limitations.** Several limitations to this study should also be noted. First, because the IPE intervention was implemented as part of a larger complex intervention, it is impossible to separate out the specific contribution of the IPE intervention from the larger ACHRU-CPP intervention. Numerous interacting components within the study and practice context may have influenced the effectiveness of the IPE intervention (Brashers et al., 2015; Hutchinson, 1999; Olson & Bakken, 2013). It is also not clear how other factors, which were not controlled (e.g., participants' work or education activities), may



have influenced the IPE intervention. In future studies, it would be important to examine which components of the intervention alone or in combination are responsible for the effectiveness of the intervention.

The focus group that was conducted to obtain feedback on the IPE intervention also involved gathering feedback on the larger ACHRUCPP intervention. Even though at the start of each focus group, participants were reminded of the components for each study, it may have been difficult for participants to separate the two interventions.

Second, there is no comparison group in the one group repeated measures design. Therefore, we cannot say with confidence that the IPE intervention alone was responsible for the changes in levels of collaborative practice or whether the changes were due to other factors beyond our control. Third, the provider participants were hand selected by the participating agencies and were highly motivated to participate in the study, thus, the feasibility of recruiting this population could not be assessed. It is also not clear how representative the sample is of the larger population of home care workers.

A fourth limitation is that data collection activities consisted mainly of self-report data posing the risk for social desirability bias. Future studies should consider additional forms of data collection such as observation of the teams in addition to self-report data. A fifth limitation is the attrition that may have resulted in self-selection bias, because the drop-outs may have differed from those participants who were retained in the study.

A final limitation pertains to the use of the chosen conceptual frameworks (e.g. W(e)Learn and CIHC). Although there were benefits to using the frameworks in combination for designing and evaluating the comprehensive intervention, neither framework allowed for explanation of external factors such as individual personalities of

providers, previous training, or care delivery models that may help explain why the intervention was successful in supporting collaborative practice. Finally, the single study site may limit the generalizability of the findings.

### **Conclusions**

CBSR for older stroke survivors living with MCC is a complex process requiring an interprofessional team approach. In delivering this care, interprofessional teams are recommended and providers are expected to work collaboratively as members of an interprofessional team. However, few home care providers have received formal IPE training that would help to support collaborative practice. Implementing IPE in the home care environment is feasible but requires supportive organizational structures, team-based care delivery models, and leadership that endorses and facilitates collaboration within and across community organizations.

This study provides the first evidence for the feasibility and preliminary effectiveness of an IPE intervention to support collaborative practice in CBSR teams caring for older adult stroke survivors with MCC using home care services and their family caregivers. The results also provide knowledge of the enablers and barriers to successfully implementing the intervention, and the factors contributing to integrating and sustaining the intervention into usual home care practice.

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## Appendix A

### Included Studies Examining IPE and Collaborative Practice for Stroke Care

Authors/Year/Country	Purpose/Setting	Design/Sample	IPE Intervention/Program	Results	Authors' Conclusions
Frisby et al. 2015 United Kingdom (Medicine)	Describes the development and evaluation of a practice-based IP learning initiative on a stroke unit	Program Description & Evaluation Cross-sectional survey Post-seminar questionnaire 5 Questions (quan & qual data)  N = 67 students (MD, nursing, OT, PT, SLP, dietitian, paramedic) over a 2-year period	Half-day seminar Students assigned to discipline specific supervisors to care for stroke patient; followed by presentation of the pt to the mixed discipline group within the seminar from the perspective of their own discipline. Followed by supervisor-led group discussions re patient care and IP working	Being in a mixed discipline group enhanced (p.318) Improvement in students' awareness of: Varying roles & responsibilities of HCPs; shared functions; importance of effective communication	Effective IP learning programs are imperative to promote collaborative practice among HCPs
McKellar et al. 2011 Canada (Social Work)	Describes an evaluation of an IPE intervention that aimed at integrating competencies for IPC and a community re-engagement framework.  2 acute care, 4 rehabilitation, and 3 community organizations	Qualitative design Subset of participants (n=23) in semi-structured phone interviews Interview questions focused on stories of practice change, perceptions of achieving personal goals, experiences applying community re-engagement framework & IPC skills.	Two 6-hour sessions (held 1 month apart) 1st day focused on concepts of community re-engagement & skills necessary for interprofessional collaboration (IPC) 2nd day focused on applying knowledge from day 1 to effectively set goals with PLS Learning formats: reflection, case-based and experiential learning opportunities Adult learning and theories of interprofessional	Presents qual results from phone interviews. HCPs reported increased understanding of competencies required for IPC especially role clarity and communication. Themes: enhanced communication, better role understanding, enhanced collaboration, team functioning Barriers to implementing in practice: individual	Intentional use of IPE approach was perceived to enhance HCP learning in relation to community re-engagement and IPC

Authors/Year/Country	Purpose/Setting	Design/Sample	IPE Intervention/Program	Results	Authors' Conclusions
			education. See Cheung et al. 2012).	practice, professional identity, workplace constraints (time to get together), organizational structure	
Selby et al. 2011 United Kingdom (Medicine)	Piloting of an IP stroke care learning package for students  Academic centre	Mixed Methods, before and after Pre and post pilot survey -modified RIPLS plus open ended questions Focus group –explored opinions on pilot 12 participants (MD, nursing, pharmacy and PT students) Evaluation – whether pilot had changed participants' IP views & general satisfaction with pilot	Delivered by 2 <sup>nd</sup> year medical students to 2 groups of 6 2 <sup>nd</sup> year health and social care students Online discussions Group 1 virtual Group 2 face-to-face Learning package required participant to consider both ethical and clinical aspects of care for stroke pt including how roles and responsibilities & those of the other members of the team overlapped	10/12 completed pre-survey 12/12 completed post Positive changes in opinions re teamwork and collaboration & positive professional identity Students' views of their roles remained the same; understanding of roles of other team members improved FG results Pilot well-received – enjoyed interacting with other professions & wanted to learn from other professions  Participants in face-to-face group had a better experience  Virtual group – lack of face-to-face viewed as a barrier to learning	Limitations were acknowledged e.g. recruitment , lack of volunteers Evaluation suggests there was improvement in the participants' understanding of other professions

**Appendix B**

**Critical Appraisal Checklist for Education Interventions**

**Citation:**

**Does the study address a clear question?**

	Yes	Can't Tell	No	Comments
<p><b>1. Is there a clearly focussed question which the study seeks to address?</b></p> <p><b>Consider</b></p> <ul style="list-style-type: none"> <li>• Why the evaluation was required?</li> <li>• Who was the intervention aimed at?</li> <li>• What was the educational issue addressed?</li> </ul>				

**Are the Results Valid?**

	Yes	Can't Tell	No	Comments
<p><b>2. Was there a clear learning that the intervention addressed?</b></p> <p><b>Consider</b></p> <ul style="list-style-type: none"> <li>• Were the aims of the intervention clear and are the objectives specific/measurable?</li> <li>• Did the objectives fit with the domain (knowledge, skills, or attitudes) identified?</li> <li>• Was the research methodology appropriate?</li> </ul>				
<p><b>3. Was there a clear description of the educational context for the intervention?</b></p>				



	Yes	Can't Tell	No	Comments
<b>Consider</b> <ul style="list-style-type: none"> <li>Was it a curriculum, course, module, workshop, training session?</li> <li>Are the learners and the setting described?</li> </ul>				
<b>4. Was the development of the intervention described?</b> <b>Consider</b> <ul style="list-style-type: none"> <li>Was the rationale for an educational intervention identified?</li> <li>Were theoretical underpinnings of the intervention described? (e.g., theoretical framework describing how intervention is expected to work?)</li> <li>Were the components of the intervention described in sufficient detail?</li> </ul>				
<b>5. Was the precise nature of the intervention clear?</b> <b>Consider</b> <ul style="list-style-type: none"> <li>How was it organized, materials used (structure)?</li> <li>How was it run in practice (process)?</li> <li>What content was included (content)?</li> <li>Was the length and intensity sufficient to allow measurable change?</li> </ul>				
<b>6. Was the study design chosen able to address the aims of the study?</b> <b>Consider</b> <ul style="list-style-type: none"> <li>Was the study design appropriate to answer the question posed?</li> <li>Data collection methods employed (qual/quan)</li> <li>Were details provided re when, how data were collected and analyzed?</li> </ul>				
<b>7. Were the outcomes chosen to evaluate the intervention appropriate?</b> <b>Consider</b> <ul style="list-style-type: none"> <li>Were they reliable, valid, free from bias</li> </ul>				

	Yes	Can't Tell	No	Comments
<b>8. Implementation of the Intervention</b> <b>Consider</b> <ul style="list-style-type: none"> <li>• Was the intervention implemented as planned?</li> <li>• Were any adaptations required? If yes, were they explained?</li> </ul>				
<b>8. Were any other explanation of the results explored by the authors?</b>				
<b>9. Were any unanticipated outcomes explained?</b>				
<b>10. Were any reported behavioural changes after the intervention linked to measurement of other, more objective measures (e.g, changes in referral rates)?</b>				

**What were the results?**

	Yes	Can't Tell	No	Comments
<b>11. What were the results of the intervention?</b>				
<b>12. How precise were the results?</b>				

**Are the results applicable to my setting?**

	<b>Yes</b>	<b>Can't Tell</b>	<b>No</b>	<b>Comments</b>
<b>13. Was the setting sufficiently similar to your own and/or representative of real life?</b>				
<b>14. Does it require additional resources to adopt the intervention?</b>				

Adapted based on (Morrison et al., 1999; University of Glasgow; Olson & Blakken, 2013)

## Appendix C

### Critical Appraisal Checklist for Included Studies

	<b>Frisby et al. (2015)</b>	<b>McKellar et al. 2011</b>
<b>Does the study address a clear question?</b> 1. Is there a clearly focussed question which the study seeks to address?	1. Yes. Describes development of IPE learning initiative and evaluates impact on students' (p.316)	1. Not a question. Description of IPE intervention.
<b>Are the results valid?</b> 2. Was there a clear learning that the intervention addressed? 3. Was there a clear description of the educational context for the intervention? 4. Was the development of the intervention described? 5. Was the precise nature of the intervention clear? 6. Was the study design chosen to address the aims of the study? 7. Were the outcomes chosen to evaluate the intervention appropriate? 8. Was the intervention implemented as planned? 9. Were any other explanation of the results explored by the authors? 10. Were any unanticipated outcomes explained? 11. Were any reported behavioural changes after the intervention linked to measurement of other, more objective measures e.g., changes in referral rates?	2. Yes, learning objectives & setting described. 3. Yes, setting and learners described. 4. Some description re development of session. Rationale provided – historically students from different disciplines do not interact with each other. Necessary for IPC. Theoretical perspectives not explicit. 5. Yes, seminar structure described p. 317. Brief description provided. 6. Post evaluation only so change in knowledge not determined. Short Questionnaire with quan and qual. Immediate assessment only. 7. Questionnaire developed by researchers, no mention of reliability, validity. Thematic analysis of qual responses. 8. Can't tell. Some discussion of challenges of implementation e.g. scheduling 9. Can't tell. 10. No. 11. No.	2. Yes. To increase HCPs understanding of IPC competencies & application to practice. 3. Yes, 2-day training program spaced 1 month apart. HCPs from different disciplines. 4. Yes, brief rationale provided. Based on IPC competency frameworks. Theories not explicit. 5. Yes, some detail provided re content and learning activities. 6. Yes, phone interviews to assess stories of practice change. 7. Can't tell interview questions not provided. 8. Not clear what adaptations were made if any. 9. None described. Can't tell. 10. None described. Can't tell. 11. None described. Can't tell.
<b>What were the results?</b> 12. What were the results of the intervention? 13. How precise were the results?	12. Improved student awareness of professional roles & responsibilities. 13. Mean values for Likert scale ranging (4.7-4.8 out of 5).	12. Enhanced communication, better role understanding. Team functioning. 13. Analysis of transcripts not described. Self-report data.
<b>Are the results applicable to my setting?</b> 14. Was the setting sufficiently similar to your own and/or representative of real life? 15. Does it require additional resources to adopt the intervention?	14. Yes, this study involved HCP students but could be adapted & used with stroke providers in community setting. 15. Would require resources in practice setting to coordinate the learning.	14. Yes, intervention and findings are potentially transferable with some adaptation to local context. 15. Barriers to practice change at individual and organizational levels. Leadership support critical to implementation.

Adapted based on (Morrison et al., 1999; University of Glasgow; Olson & Bakken, 2013)

	<b>Selby et al. 2011</b>
<b>Does the study address a clear question?</b> 1. Is there a clearly focussed question which the study seeks to address?	1. No. Piloting of an IP learning package.
<b>Are the results valid?</b> 2. Was there a clear learning that the intervention addressed? 3. Was there a clear description of the educational context for the intervention? 4. Was the development of the intervention described? 5. Was the precise nature of the intervention clear? 6. Was the study design chosen to address the aims of the study? 7. Were the outcomes chosen to evaluate the intervention appropriate? 8. Was the intervention implemented as planned? 9. Were any other explanation of the results explored by the authors? 10. Were any unanticipated outcomes explained? 11. Were any reported behavioural changes after the intervention linked to measurement of other, more objective measures e.g., changes in referral rates?	2. Yes to improve interprofessional understanding and education 3. No, not clearly described. 4. Little description of intervention development – Developed & implemented by medical students. No mention of theory. 5. Description of learning package not provided. Process and content are unclear. 6. Yes, program evaluation using mixed methods. 7. Yes, pre-post surveys part of RIPLS survey used. Not clear what scales/items were used. Qual data from open-ended questions. 8. Implementation details not described in detail. 9. Not described. 10. Not described. 11. Not described.
<b>What were the results?</b> 12. What were the results of the intervention? 13. How precise were the results?	12. Positive changes in opinions re teamwork and collaboration. Improved understanding of other team member roles. 13. No quan results presented. Details of analysis not provided. Statistical significance not reported.
<b>Are the results applicable to my setting?</b> 14. Was the setting sufficiently similar to your own and/or representative of real life? 15. Does it require additional resources to adopt the intervention?	14. No, not enough details provided. Participants were students. 15. Can't tell.

**Adapted based on (Morrison et al., 1999; University of Glasgow; Olson & Bakken, 2013**

### Appendix D

#### Comparison of ACHRU-CPP Stroke Intervention and IPE Intervention

	Stroke Intervention Study	IPE Intervention Study
Study Title	A Community Navigation and Rehabilitation Intervention for Older Stroke Survivors with Multiple Chronic Conditions	An Interprofessional Education Intervention to Support an Interprofessional Team Approach to Stroke Rehabilitation for Older Stroke Survivors and their Family Caregivers: A Feasibility Study
Purpose of Intervention	To promote stroke survivors' community reintegration, increase their HRQoL, and reduce the effects of stroke	To provide an education/training program as a strategy to support home care providers to work collaboratively to deliver the community navigation and stroke rehabilitation intervention  To improve level of collaborative practice, a key ingredient of the larger trial, among home care providers delivering the stroke intervention
Research Questions	What are the feasibility, acceptability, and effects of a six-month community navigation and rehabilitation intervention compared to usual home care services for stroke survivors with MCC and their primary caregivers?	Primary: What is the feasibility of implementing an IPE intervention to support CBSR for older stroke survivors and their family caregivers?
Study Objectives	<ol style="list-style-type: none"> <li>1. Describe the feasibility and acceptability of the intervention</li> <li>2. Compare effects of the intervention versus usual home care services on stroke survivors' HRQoL, community re-integration, stroke impact, depression, anxiety, self-efficacy, and costs of use of health services, from a societal perspective.</li> </ol>	<ol style="list-style-type: none"> <li>1. To describe the feasibility of the study methods used to evaluate the intervention (recruitment/retention rates and procedures, eligibility criteria, data collection and analysis methods)?</li> <li>2. To determine the effectiveness of the IPE intervention on the level of collaborative practice and team functioning among home care providers?</li> </ol>

	<ol style="list-style-type: none"> <li>3. Determine which subgroups of stroke survivors with MCC benefit most from the intervention (i.e. based on age, sex, dose of intervention, e.g., number of visits received).</li> <li>4. Compare effects of the intervention versus usual home care services on primary caregivers' HRQoL, caregiver strain, depression, and costs of use of health services.</li> <li>5. Describe the effects of the intervention on interprofessional/team collaboration.</li> <li>6. Conduct an analysis of the baseline data to explore the determinants of the HRQoL.</li> </ol>	<ol style="list-style-type: none"> <li>3. To describe how the intervention is adapted, implemented, and embedded into real-world practice?</li> <li>4. Determine the most appropriate primary outcome measure for evaluating the effectiveness of the intervention?</li> <li>5. To evaluate what is required to sustain and scale-up the intervention from the perspective of: (1) home and community care providers, and (2) agency leadership/management staff?</li> </ol>
Study Design	Pragmatic Randomized Controlled Trial (QUAN +qual) Pragmatic -	Feasibility/Pilot Study
Participants	Stroke survivors and their family caregivers Home care providers	Home care providers delivering the stroke intervention in the RCT (Interventionists)
Key Ingredients of Intervention	<ul style="list-style-type: none"> <li>• Strengths-Based Practice</li> <li>• Providing Holistic Care</li> <li>• Engaging and Supporting Primary Caregivers</li> <li>• Collaborative practice</li> </ul>	<ul style="list-style-type: none"> <li>• Interprofessional Education (learning with, from and about each other)</li> <li>• Small group learning</li> <li>• Reflective Practice</li> <li>• Dimensions of Collaborative practice (e.g. effective communication, shared-decision making)</li> </ul>
Components of the Intervention	<ul style="list-style-type: none"> <li>• In home visits for stroke survivors by CCAC Care Coordinator, RN, PT or OT</li> <li>• PSW in-home visits and safety checklist</li> <li>• Monthly case conferences</li> </ul>	<ul style="list-style-type: none"> <li>• Interprofessional Education Training session on Collaborative practice</li> <li>• Care Coordinators' training on facilitating reflection on collaborative practice</li> <li>• Team Reflection Practice</li> </ul>

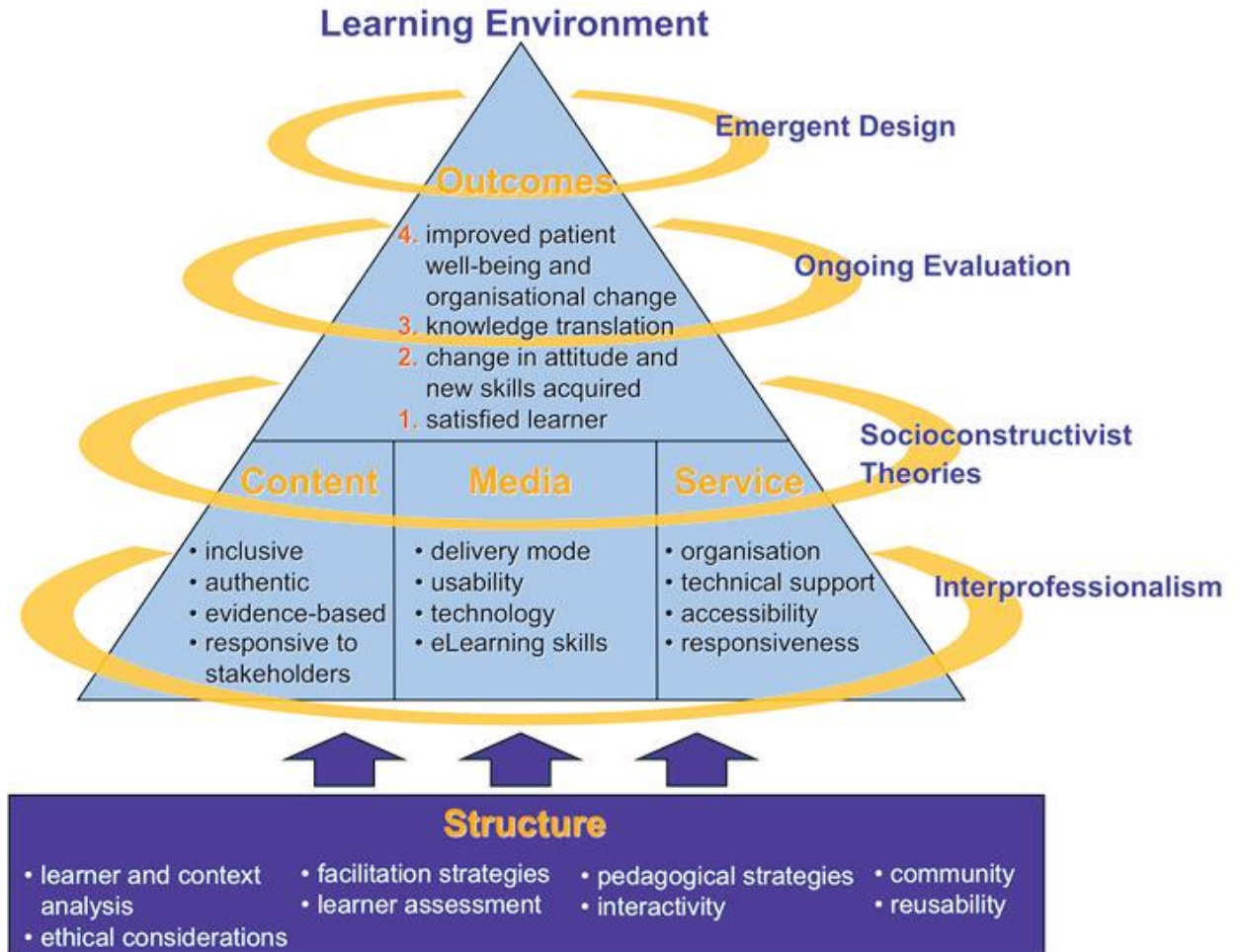
	for IP team to develop and discuss client-centred plan of care	Huddles on Collaborative practice and Booster Training Sessions
Data Collection Periods	Pre-Intervention and Post-Intervention (6 months)	<ul style="list-style-type: none"> <li>• Post-IPE Training Session on Collaborative practice</li> <li>• 3 and 6 months post-training –CPAT and TCI questionnaires</li> <li>• 2, 4, 6 months post-training</li> <li>• Focus group at 6 months</li> </ul>
Main Outcome Variable(s)	<p>Acceptability of the Intervention (to stroke survivors &amp; family caregivers)</p> <p>Feasibility of the Intervention (to stroke survivors &amp; family caregivers)</p> <p>For Stroke Survivors – changes in:</p> <ul style="list-style-type: none"> <li>• HRQoL</li> <li>• Mental Health</li> <li>• Degree of Community Re-integration</li> <li>• Degree of Physical Functioning related to stroke</li> <li>• Prevalence and Severity of Depressive Symptoms</li> <li>• Prevalence and Severity of Anxiety</li> <li>• Self-Efficacy</li> </ul> <p>For Family Caregivers- changes in:</p> <ul style="list-style-type: none"> <li>• HRQoL</li> <li>• Prevalence and Severity of Depressive Symptoms</li> <li>• Degree of Caregiver Strain</li> </ul> <p>For HCPs- changes in:</p> <ul style="list-style-type: none"> <li>• team functioning</li> <li>• level of collaborative practice</li> </ul>	<p>Acceptability of the IPE intervention by HCPs</p> <p>Feasibility of the IPE Intervention for HCPs</p> <p>Feasibility of study methods for IPE intervention</p> <p>Change in Collaborative practice and Team functioning</p>



**Appendix E**

**W(e) Learn Framework for Interprofessional Education**

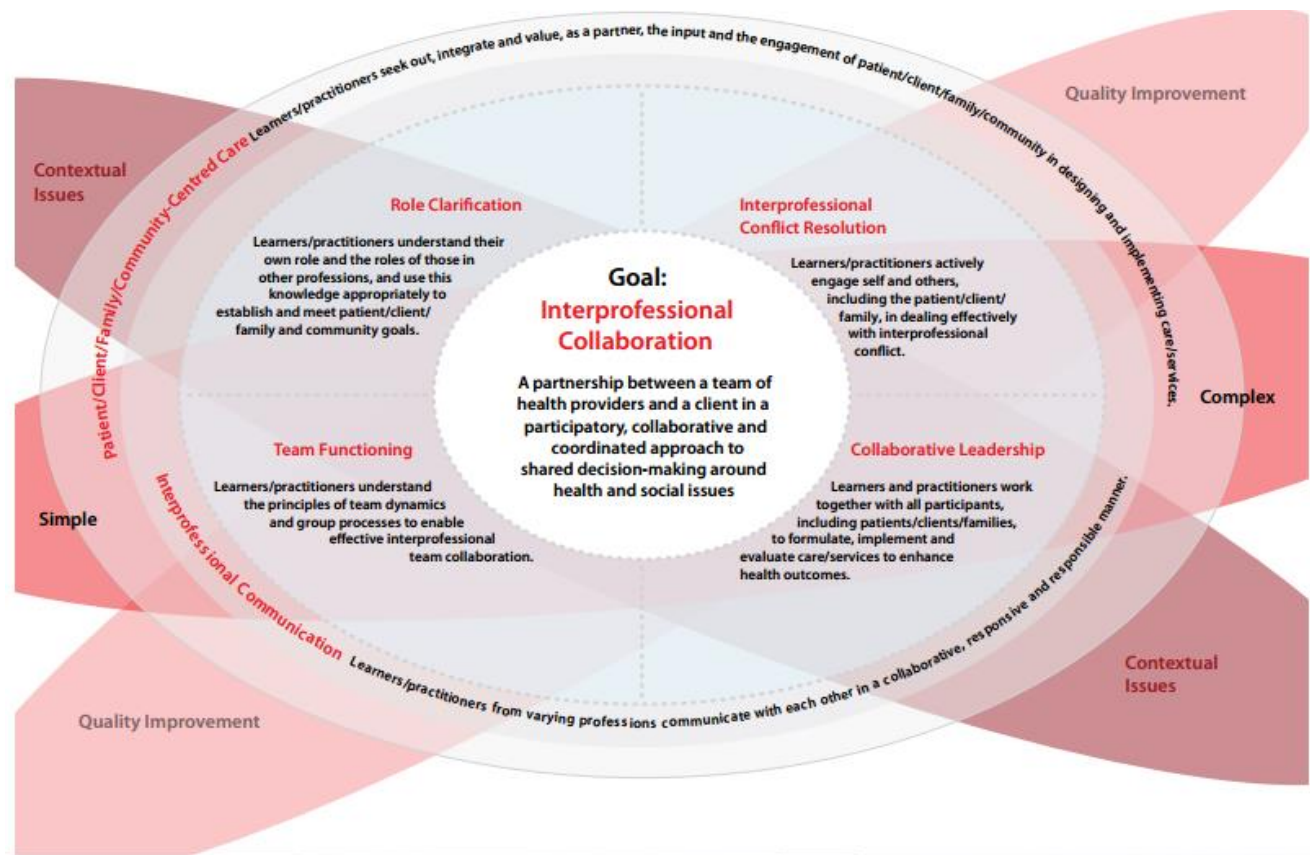
© MacDonald et al., 2009



Used with permission from C. MacDonald

**Appendix F:**

**National Interprofessional Competency Framework (CIHC, 2010)**



Used with permission. My thanks to the Canadian Interprofessional Health Collaborative for permission to use the CIHC Competency Framework in this dissertation.

**Appendix G:**

**Use of W(e) Learn Framework and CIHC\* Frameworks in the Development of the IPE Intervention**

Note: CIHC competencies for collaborative practice were embedded into the content for both the initial three-hour training session and the care coordinator training session.

W(e)Learn Framework Domain	Intervention Component			
	Standardized 3-hour IPE Training Session on Collaborative practice	Standardized Training Session for CCAC Care Coordinators	Reflection on Team Collaboration (Collaborative practice Reflective Huddles, CPRH)	Outreach Education
<p>Structure</p> <p>When designing an IPE program, the following should be considered:</p> <ul style="list-style-type: none"> <li>•Learner and context analysis</li> <li>•Ethical considerations</li> <li>•Facilitation strategies</li> <li>•Learner Assessment</li> <li>•Pedagogical Strategies</li> <li>•Interactivity</li> <li>•Community</li> <li>•Reusability of</li> </ul>	<ul style="list-style-type: none"> <li>•Conducted as part of 12h training for stroke intervention RCT</li> <li>•All members of the dedicated IP team participated in the initial IPE training session (PT, OT, Care Coordinator, RN, PSW) to facilitate trust, respect &amp; role understanding among the team</li> <li>•Multiple teaching strategies such as didactic lecture, small and large group exercises, case studies were embedded in</li> </ul>	<ul style="list-style-type: none"> <li>•2 hour training session provided to Care Coordinators (CCs) by PI to support CCs to facilitate IP learning and collaboration when leading teams</li> </ul>	<ul style="list-style-type: none"> <li>•Care Coordinators led their teams in a reflective exercise at 2, 3, 4, and 6 months led by the respective CC</li> </ul>	<ul style="list-style-type: none"> <li>•PI conducted outreach visits at 2, 3, 4, and 6 months post initial training to support the CC, monitor progress, provide education and feedback and discuss barriers and possible solutions re implementing the intervention</li> </ul>

W(e)Learn Framework Domain	Intervention Component			
learning resources	the training sessions			
<p>Content Content should be:</p> <ul style="list-style-type: none"> <li>• inclusive of learners’ level of understanding</li> <li>• align with professional issues and work-related requirements.</li> <li>• relevant/authentic to the clinical setting</li> <li>• evidence-based</li> <li>• responsive to the needs of learners and the clients they serve.</li> </ul>	<ul style="list-style-type: none"> <li>• IP content was tailored to incorporate specific case examples applicable to older stroke patients with MCC – this contributed to the authenticity of the content and to be more meaningful to the learners</li> <li>• Both IP and Clinical content was evidence-based, recent and valid and applicable to IP teams caring for stroke survivors with MCC using home care services</li> <li>• Content incorporated CIHC competencies such as: role clarification to deliver stroke intervention, shared-goals and decision-making; communication, trust &amp; respect; reflective practice; patient/family centred care; evaluation</li> </ul>	<ul style="list-style-type: none"> <li>• Review concepts of IPE and Collaborative practice</li> <li>• Review CC experience with leading IP teams</li> <li>• Team stages and group development (CIHC, 2010)</li> <li>• Strategies to facilitate IP learning and collaborative practice</li> <li>• Tips and resources for leading teams (sample agendas, Team charter)</li> <li>• Managing and resolving conflict in teams (CIHC, 2010)</li> <li>• Process and CC role for CPRH</li> <li>• PI checked in with Care Coordinators at monthly meetings re progress of reflection sessions and assess need for further resources</li> </ul>	<ul style="list-style-type: none"> <li>• Structured questions were adapted from 3 qualitative items on the Collaborative practice Assessment Tool (Schroder et al., 2011)</li> <li>• Assesses: 1) what team is doing well with regards to team collaboration; 2) what challenges team has collaborating when caring for older stroke survivors with MCC and their family caregivers; 3) team perceptions of how their collaboration is impacting the care of clients and their family caregivers?</li> </ul>	<ul style="list-style-type: none"> <li>• Content driven by learner/participant interest and needs as they arose</li> </ul>

W(e)Learn Framework Domain	Intervention Component			
	<p>of team processes (Bookey-Bassett et al., 2016; CIHC, 2010) and was adapted during the training session based on learner needs (MacDonald et al., 2009)</p> <ul style="list-style-type: none"> <li>• Delivery modes modified in response to learner needs</li> </ul>			
<p>Media Refers to how the education program is delivered, usability &amp; relevant technology</p>	<ul style="list-style-type: none"> <li>• Training session was facilitated by PI qualified in IPE</li> <li>• Media consisted of print training materials (handouts, self-assessments, group exercise, video of stroke survivor sharing experiences)</li> <li>• Technology – LCD and Laptop to project slides</li> </ul>	<ul style="list-style-type: none"> <li>• Training session was facilitated by PI qualified in IPE</li> <li>• Media consisted of print training materials (handouts, sample agenda, team charter)</li> </ul>	<ul style="list-style-type: none"> <li>• 3 Structured questions given to CC to guide team reflection in handout form</li> </ul>	<ul style="list-style-type: none"> <li>• Summary of CPAT and TCI results presented to teams at 4 months using handouts and discussion</li> </ul>
<p>Service Refers to how learning is organized, &amp; supported by the workplace &amp; how the facilitator/instructor</p>	<ul style="list-style-type: none"> <li>• Training session was scheduled in conjunction with agencies to facilitate maximum staff participation</li> <li>• PI responded to learner</li> </ul>	<ul style="list-style-type: none"> <li>• PI checked in with Care Coordinators at monthly meetings re progress of reflection sessions and assess need for further resources</li> </ul>	<ul style="list-style-type: none"> <li>• PI checked in with Care Coordinators at monthly meetings re progress of reflection sessions and assess need for further</li> </ul>	

W(e)Learn Framework Domain	Intervention Component			
responds to identified learning needs in a timely manner	needs in a timely manner during the training session or by phone, email for requirements after the training session		resources/support <ul style="list-style-type: none"> <li>• Sessions were scheduled by agencies to coincide with monthly case conferences</li> </ul>	
Ongoing Evaluation Should include formative & summative evaluation using quantitative and qualitative methods to evaluate IPE experiences	Quantitative Assessment of Initial Training Session Using the W(e) Learn Interprofessional Program Assessment Questionnaire at completion of training session	Questionnaire to evaluate CC training session completed at end of session	<ul style="list-style-type: none"> <li>• Qualitative Assessment of Collaborative practice following monthly team case conferences (part of stroke intervention) at 2,3, 4, and 6 months post training at Collaborative practice Reflective Huddles (CPRH)</li> <li>• 3 structured questions to guide reflection</li> </ul>	
Emergent design Design should be ongoing and responsive to learning needs as they emerge	<ul style="list-style-type: none"> <li>• Identification of additional participant learning needs based on learner feedback during monthly research team meetings and results of W(e)Learn assessment</li> <li>• Learning needs will be documented and</li> </ul>	<ul style="list-style-type: none"> <li>• Identification of additional participant learning needs throughout 6 months of intervention (e.g. through team reflection discussions; learning needs will be documented and</li> </ul>	<ul style="list-style-type: none"> <li>• Identification of additional participant learning needs throughout 6 months of intervention (e.g. through team reflection discussions; learning needs will be documented and</li> </ul>	<ul style="list-style-type: none"> <li>• Identification of additional participant learning needs throughout 6 months of intervention (e.g. through team reflection discussions; learning needs will be documented and</li> </ul>

W(e)Learn Framework Domain	Intervention Component			
	addressed if feasible	addressed if feasible	addressed if feasible	addressed if feasible
<p>Outcomes                      Level 1: Learners reaction to the IPE learning experience                      Level 2: Learners modify their attitudes and perceptions towards IPE &amp; develop new knowledge and skills                      Level 3: Change in learner behaviour – increase in collaborative practice in the workplace                      Level 4: Organizational change towards collaborative practice &amp; how care is delivered; improved patient outcomes as a result of improved IPC</p>	<ul style="list-style-type: none"> <li>• Assessment of learner reaction and attitudes towards IPE based on W(e) Learn Assessment Tool</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment of CC reactions to and learning from training</li> <li>• Assessment of what was helpful and could be applied to practice</li> </ul>	<ul style="list-style-type: none"> <li>• Quantitative Assessment of Perceived Collaboration (CPAT) and Team function (TCI) at 3 and 6 months post training</li> <li>• Qualitative Assessment of feasibility, acceptability, implementation, and impact of the IPE intervention at 6 months post training using focus groups (field notes)</li> </ul>	<ul style="list-style-type: none"> <li>• Identification of intended and unintended outcomes through discussions during outreach visits</li> </ul>

**Appendix H:**

**Overview of IPE Training Session on Collaborative Practice**

Collaborative practice (2.5 -3 hours) Full Interprofessional team: Care coordinator, RN, OT, PT, PSW and Nursing supervisors, PSWs [Required]			
Content	Learning Objectives: At the end of the training...	Strategies/Activities & Resources	Time Allocated
Introduction to Collaborative Practice  • Why is it important?	Participants get to know each other and create a positive environment for learning	Getting to know each other <ul style="list-style-type: none"> <li>• Ice Breaker Exercise – What do we have in common? What is unique?</li> <li>• Experience working in teams</li> </ul>	10 min
	Participants will be able to state a definition of collaborative practice	What is Collaborative Practice? <ul style="list-style-type: none"> <li>• Group Exercise to determine participant perceptions of collaborative practice – table exercise followed by large group discussion about what collaborative practice means to the group</li> <li>• Slides                             <ul style="list-style-type: none"> <li>○ Definitions of collaborative practice</li> <li>○ Why is collaborative practice important</li> <li>○ Principles of Interprofessional Care</li> <li>○ Individual, organizational and system factors supporting collaborative practice</li> </ul> </li> </ul>	20 min



Collaborative practice (2.5 -3 hours) Full Interprofessional team: Care coordinator, RN, OT, PT, PSW and Nursing supervisors, PSWs [Required]			
Content	Learning Objectives: At the end of the training...	Strategies/Activities & Resources	Time Allocated
	<p>Participants will gain an understanding of the meaning of collaborative practice from a stroke patient’s perspective</p> <p>Participants will gain an understanding of the impact of collaborative practice on: community-living older adults with MCC; on health care providers &amp; the health care system</p>	<p>DVD – Stroke Survivor: Carole Laurin (Centre for IPE)- Patient’s perspectives of collaborative practice – what worked and what didn’t?</p> <ul style="list-style-type: none"> <li>• Discussion                             <ul style="list-style-type: none"> <li>○ Key messages from video for health care providers</li> </ul> </li> </ul> <p>Relevance of collaborative practice to community-living older adults with MCC</p> <ul style="list-style-type: none"> <li>• Slides                             <ul style="list-style-type: none"> <li>○ Consequences for patients, providers &amp; the health care system</li> <li>○ Working with older adults with MCC - what patients need and want from the IP team?</li> </ul> </li> </ul>	15 min
Break			10 min
Components of Collaborative Practice	Participants will be able to describe the various components of collaborative practice	<p>Brief Description of Components of Collaborative practice</p> <ul style="list-style-type: none"> <li>○ Understanding roles</li> <li>○ Shared goals, decision-making &amp; care planning</li> </ul>	10 min

Collaborative practice (2.5 -3 hours) Full Interprofessional team: Care coordinator, RN, OT, PT, PSW and Nursing supervisors, PSWs [Required]			
Content	Learning Objectives: At the end of the training...	Strategies/Activities & Resources	Time Allocated
	<p>Participants will be able to articulate their own role and the roles of other intervention team members (including knowledge, skills &amp; functional expertise)</p> <p>Participants will be able to identify characteristics of, facilitators &amp; barriers for effective communication Participants will be able to state the importance of involving patients and caregivers as part of the team</p> <p>Participants will have an understanding &amp; awareness of strategies to evaluate their own interprofessional collaborative</p>	<ul style="list-style-type: none"> <li>○ Frequent &amp; effective communication</li> <li>○ Involving patients in the team</li> <li>○ Diverse &amp; flexible team membership</li> <li>○ Evaluation of team processes</li> </ul> <ul style="list-style-type: none"> <li>● Role Clarification Exercise – Career Choice &amp; Role Reality</li> <li>● Discussion why role clarity and role understanding is important for collaborative practice</li> </ul> <ul style="list-style-type: none"> <li>● Discussion of Strategies to Engage Older Adults and Caregivers as part of the team</li> </ul> <p>Assessing Team Collaboration</p> <ul style="list-style-type: none"> <li>○ RNAO –BPG Pamphlet on Developing and Sustaining IP Health Care: Tips &amp; Tools for Health-Care</li> </ul>	<p>15 min</p> <p>30 min</p> <p>10 min</p>



## **Appendix I**

### **Overview of Training for Care Coordinators**

- 1. Review Concepts of IPE and Collaborative Practice – How is IPE different from other professional learning?**
  - Sociocultural learning
  - Learning with, from and about each other
  - Role of PSW – OCAR Framework
- 2. Understanding Teams and Stages of Group Development**
  - Forming, storming, norming and performing
- 3. Facilitating learning for IPE and Collaborative Practice**
  - Role of facilitator
  - Creating a safe learning environment
  - Strategies to facilitate reflective learning
  - Team charter & Meeting Agenda
  - Dealing with group challenges
- 4. Discussion of Purpose and Processes of Team Reflections for Study**
- 5. Evaluation of Training Session**

Training will involve group discussions, practice exercises and didactic instruction.

**Appendix J****Sample Agenda For 1<sup>st</sup> Team Case Conference (2 hours)****2:00 to 4:00 PM**

2:00 to 2:45 pm	Welcome and Introductions Getting to know each other –Working as a Team Meeting Expectations (complete team charter) All team members to attend and participate in meeting
2:45 to 3:20 pm	Review of Clients (using Team Meeting Record) Each client to be discussed a minimum of 3 times during the 6 months Discussion of <ul style="list-style-type: none"> <li>• Client RAI-CA results</li> <li>• Client goals, strengths</li> <li>• Care planning</li> <li>• Bundle of services</li> </ul> Integration of Key Components of Intervention <ul style="list-style-type: none"> <li>• Strengths-based practice</li> <li>• Holistic care</li> <li>• Engaging and supporting caregivers</li> <li>• Collaborative practice</li> </ul>
3:20 to 3:40 pm	Next Meeting: begin to create agenda <ul style="list-style-type: none"> <li>• Clients to be discussed</li> <li>• Other issues</li> </ul>
3:40 to 4:00 pm	Reflection on Team’s Collaborative Practice (refer to structured questions)

**Appendix K:****Sample Interprofessional Team Charter**

<b>Overall Team Purpose</b> To provide coordinated patient-centred care for stroke patients at XXX	
<b>Job Descriptions</b>	
Chair	
Facilitator	
Data Collector	
Resource Person	
<b>Role Definitions</b> list all relevant roles on the team and describe their contribution to the team	
CCAC Care Coordinator	
Registered Nurse	
Occupational Therapist	
Physiotherapist	
Personal Support Worker	
Others as appropriate	
<b>Enhanced Communication</b>	
Decision-making	
Frequency of communications e.g. monthly team meetings	
Conflict Resolution	
<b>Core Values</b> Trust, respect, transparency, authenticity	
<b>Expectations, Outcomes, Impact of the Team</b> Specify clear indicators	
<b>Education of Team Members</b> Training for staff or patient education	
<b>Evaluation of Team Performance and Outcomes</b> Refer to program logic model & specific indicators Determine methods of evaluation (e.g. quantitative or qualitative data)	

Adapted from RNAO IP BPG (2013)

## Appendix L:

### Questions for Collaborative Practice Reflective Huddles

This discussion is to be facilitated by the care coordinator at the end of the monthly team case conferences (at 2, 3, 4, and 6 months post initial IPE training session). The purpose is for teams to reflect on what they have learned in the training session and how they are engaging in collaborative practice to deliver the stroke intervention for the larger trial.

In this study IPC refers to an evolving interprofessional process involving a diverse team of health care and other providers who interdependently engage in frequent communication and shared decision-making, for the purposes of providing optimal health and social care services to CLOA and their families. Team composition includes older adults and their caregivers; team processes are flexible and consistently evaluated to effectively and efficiently meet client needs. For effective management of chronic diseases for older adults, it is important for interprofessional teams to regularly evaluate how their collaborative processes impact goals such as quality of patient care, patient outcomes, provider satisfaction and the cost of service delivery. The following questions should be answered with regard to our team roles in caring for older stroke survivors with MCC and their family caregivers for the community navigation stroke study.

What is our team doing well with regards to collaborative practice?

*(Probe: How are we implementing the different components of collaboration in our practice e.g. communication, shared decision-making, role understanding, respect, trust)*

In caring for older stroke survivors with MCC and their family, what are the most difficult challenges to collaboration?

*(Probe: what do we need help with to improve collaborative practice? What further learning needs do we have regarding collaborative practice?)*

How is our team collaboration impacting the care of clients and their family caregivers?

*(Probe: What are some examples? Are client goals being met?)*

**Appendix M:****Record of Team Reflection Discussion**

Date:	Site:
Session: (e.g., 2, 3, 4, 6 months)	Length of Discussion:
Description & Number of Participants	
Care Coordinator:	
RNs:	
PSW Supervisor:	
OT:	
PT:	
PSWs:	

**Discussion**

**How many stroke clients are currently assigned to this team? (PI)**

**How did the discussion about the clients go? (PI)**

**What is our team doing well with regards to collaborative practice? (CC)**

*(Probe: How are we implementing the different components of collaboration in our practice e.g. communication, shared decision-making, role understanding, respect, trust)*

**In caring for older stroke survivors with MCC and their family, what are the most difficult challenges to collaboration?**

*(Probe: what do we need help with to improve collaborative practice? What further learning needs do we have regarding collaborative practice?)*

**How is our team collaboration impacting the care of clients and their family caregivers?**

*(Probe: What are some examples? Are client goals being met?)*



**Are there any key insights you would like to share based on your role in this study so far? (PI)**

**Other Discussion:**

**Personal Reflections:**

**Feasibility:**

**Acceptability:**

**Implementation**

**What didn't happen?**

**Appendix N:****Questionnaire to Evaluate Care Coordinator Training Session**

Thank you for participating in this training session. Your feedback on the session is important for ensuring the content is relevant to users. Please indicate your level of agreement with each of the statements below.

Statement	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
At the end of this session, I have a better understanding of the concept of IPE					
From this experience, my understanding of IPC has changed					
From this experience, I have gained knowledge to facilitate IPE with my team members					
From this experience I have gained skills to facilitate IPC with my team members					
The resources and materials provided will be useful for facilitating reflection with practice teams					
The facilitator created a relaxed & comfortable learning environment					

What was of most value to you?

What do you plan to use or implement right away?

What changes or suggestions do you have to improve this session?

Other Comments:

**Appendix O:****Construct, Variables and Measures**

Construct	Variable (hypothesis if applicable)	Data Collection Instrument/Method	Scoring	Methods of Analysis
Socio-demographic characteristics	Role, education, gender, years of experience in current position, years of experience in professional role, employment status e.g. full-time, part-time	Socio-demographic questionnaire for participants at baseline		Means and standard deviations for continuous variables, percent and frequencies for categorical variables
Learner Outcomes	Assess participants' experiences, knowledge gained, and overall content of the IPE training program. See Appendix ?  Participants will report positive experiences and improved knowledge and skills for IPC	We Learn Assessment Tool © MacDonald et al., 2009 Administered to participants immediately following the 3 hour in-class training session (baseline)		Descriptive statistics e.g. mode, frequencies and percent (ordinal data)
Level of Collaborative practice	Assesses participants' perceived level of collaborative practice.  Scores at 6 months will be higher than at 3 months	Collaborative practice Assessment tool (AT) (Schroeder et al., 2011) (At 3 and 6 months)	Mean scores for each domain	Descriptive statistics e.g. mode, frequencies and percent (Ordinal data)  Paired <i>t</i> -tests
Team Effectiveness		Team Climate Inventory (TCI) 19-	Scores for each	Descriptive statistics e.g.

Construct	Variable (hypothesis if applicable)	Data Collection Instrument/Method	Scoring	Methods of Analysis
		item version (At 3 and 6 months)	subscale and overall score	mode, frequencies and percent (Ordinal data)  Paired t-tests
Impact Feasibility	Contextual factors influencing feasibility of implementation	Team Reflective Discussions (at 2,3,4 and 6 months) Focus Groups (at 6 months) Documentation in study log		Descriptive stats and qualitative data from focus groups and field notes
Acceptability	Enrollment rate Attrition rate			

**Appendix P:****Participant Demographic Questionnaire**

These questions are about your background for statistical purposes only and will be used to describe the characteristics of the participants in this study.

1. Gender    <sub>1</sub> Male    <sub>2</sub> Female    <sub>3</sub> Transgender, transsexual, or a person with a history of transitioning sex

2. Age:

<sub>1</sub> 18-20    <sub>2</sub> 21-25    <sub>3</sub> 26-30    <sub>4</sub> 31-40    <sub>5</sub> 41-50    <sub>6</sub> 51-60    <sub>7</sub> 61+

3. What is the highest level of education that you have completed?

- <sub>1</sub> No Schooling                      <sub>4</sub> High school                                      <sub>7</sub> Diploma/bachelor's degree  
<sub>2</sub> 8<sup>th</sup> grade/less                      <sub>5</sub> Technical or trade school                      <sub>8</sub> Graduate degree (e.g.  
Masters, PhD)  
<sub>3</sub> 9-11 grades                      <sub>6</sub> Some College/University                      <sub>9</sub> Unknown

4. What is your professional background/role?

- <sub>1</sub> Case Manager/Care Coordinator  
<sub>2</sub> Occupational Therapist  
<sub>3</sub> Physiotherapist  
<sub>4</sub> Registered Nurse  
<sub>5</sub> Registered Practical Nurse  
<sub>6</sub> Personal Support Worker  
<sub>7</sub> Social Worker  
<sub>8</sub> Speech Language Pathologist  
<sub>9</sub> Other

5. How many years have you been practicing/working in this role?

- <sub>1</sub> 0-3  
<sub>2</sub> 4-10  
<sub>3</sub> 11-15  
<sub>4</sub> 16-20  
<sub>5</sub> 21 +

6. How many years' experience do you have in your current position?

- <sub>1</sub> 0-3
- <sub>2</sub> 4-10
- <sub>3</sub> 11-15
- <sub>4</sub> 16-20
- <sub>5</sub> 21 +

7. What is your current employment status?

- <sub>1</sub> Full-time
- <sub>2</sub> Part-time
- <sub>3</sub> other (e.g., casual)

8. Have you participated in previous training regarding interprofessional collaboration?

- <sub>1</sub> yes
- <sub>2</sub> no

If yes, please indicate where you received this training.

- <sub>1</sub> undergraduate (college or university) education program
- <sub>2</sub> workplace training
- <sub>3</sub> professional conference or workshop
- <sub>4</sub> other, please specify \_\_\_\_\_

9. How many years of experience do you have working with stroke survivors?

- <sub>1</sub> less than 1 year
- <sub>2</sub> 1 to 5 years
- <sub>3</sub> 6 to 10 years
- <sub>4</sub> more than 10 years

**Appendix Q:****Fidelity Scale**

Intervention Component	Data Source	Proportion
Team members receive IPE/Collaborative Practice standardized training	Attendance record	
Team members participate in monthly team reflection sessions (at 2, 3, 4 & 6 months) following case conference (30 min)	Attendance recorded	
Care Coordinators receive training on group facilitation for Collaborative Practice	Attendance record	
Participants complete CPAT and TCI questionnaires at 3 and 6 months	Completed questionnaires	





	1	2	3	4	5	6	7	NA
21. The learning activities were well organized								
22. The facilitator modelled effective IP collaboration								
23. The learning activities were engaging								
24. The facilitator was knowledgeable about IP								
25. The facilitator was responsive to the learners' needs								
26. The learning objectives were clear								
27. I have improved my knowledge of IP competencies that I need to continue to develop								
28. I am motivated to change my practice towards providing more effective IP collaborative care								
29. I was provided with and/or made aware of useful tools and resources								
30. I have a deeper appreciation of the approach to collaborative patient-centred care								

Date of Training Session: \_\_\_\_\_

Site: \_\_\_\_\_

Your role/profession: \_\_\_\_\_

**Appendix S:**  
**Focus Group Questions**

**We are evaluating the feasibility, and potential effects of a new IPE TRAINING intervention as part of this larger ACHRU-CPP study. In the next set of questions, when we refer to the INTERVENTION we mean the 4 components of the IPE TRAINING INTERVENTION which are:**

- 1) the initial large group training session on collaborative practice held in January
- 2) the additional care coordinator training to facilitate collaborative practice and team leadership
- 3) the collaborative practice reflective huddles after the monthly case conferences
- 4) outreach visits to the teams

As part of the larger study, one purpose of the IPE TRAINING intervention is to examine whether it improves collaboration among team members delivering the stroke intervention.

---

The first questions relate to your experience, use, and opinions about the feasibility (practicality) of the intervention.

1. What worked well in the interprofessional training intervention? What did not work well?

*[Prompts: IPE training materials, team reflection, team charter. Provide examples of how reflecting on your team practice benefitted you as a team member. What did you like about the IPE TRAINING intervention?]*

2. What parts of the intervention would you change? What parts would you keep? Why? *[Prompt: Provide examples of how the intervention was not acceptable to you, what you didn't like about the IPE TRAINING intervention]*

3. Having participated in this IPE TRAINING Intervention, in what ways has it helped you to collaborate with other team members, clients, and their family caregivers?

*[Prompts: key learnings impact on collaborative practice, client care/outcomes, how you worked together as a team]*

4. What made the intervention easy to implement? What made it difficult to implement?

*[Prompts: Care Coordinator, Teamwork, resources, time, case conferences, research meetings]*

5. What needs to be changed or improved in the IPE TRAINING intervention to help you implement it in your routine/practice?

6. Is there anything else you think is important for us to know?

Thank you very much for your valuable contributions.

**Appendix T:**

**Collaborative Practice Assessment Tool**

The content in the following statements contain items relevant to collaborative practice. Please respond to each statement from the perspective of the specific stroke study team you work with most often.

Collaborative Practice Domain	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
Mission, Meaningful Purpose, Goals							
1. Our team mission embodies an interprofessional collaborative approach to patient/client care.							
2. Our team’s primary purpose is to assist patients/clients in achieving treatment goals.							
3. Our team’s goals are clear, useful and appropriate to my practice.							
4. Our team’s mission and goals are supported by sufficient resources (skills, funding, time, space).							
5. All team members are committed to collaborative practice.							
6. Members of our team have a good understanding of patient/client care plans and treatment goals.							
7. Patient/client care plans and treatment goals incorporate best practice guidelines from multiple professions.							
8. There is a real desire among team members to work collaboratively.							

Collaborative Practice Domain	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
General Relationships							
9. Respect among team members improves with our ability to work together.							
10. Team members care about one another’s personal well-being.							
11. Socializing together enhances team work effectiveness.							
12. It is enjoyable to work with other team members.							
13. Team members respect each other’s roles and expertise.							
14. Working collaboratively keeps most team members enthusiastic and interested in their job.							
15. Team members trust each other’s work and contributions related to patient/client care.							
16. Our team’s level of respect for each other enhances our ability to work together.							
Team Leadership							
17. Procedures are in place to identify who will take the lead role in coordinating patient/client care.							
18. Team leadership ensures all professionals needing to participate have a role on the team.							
19. Team leadership assures that roles and responsibilities for patient/client							

Collaborative Practice Domain	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
care are clearly defined.							
20. Team leadership discourages professionals from taking the initiative to support patient/client care goals.							
21. Team leadership supports interprofessional development opportunities.							
22. Our team leader models, demonstrates and advocates for patient/client-centered best practice.							
23. Our team leader is out of touch with team members' concerns and perceptions.							
24. Our team leader encourages members to practice within their full professional scope.							
25. Our team has a process for peer review.							
General Role Responsibilities, Autonomy							
26. Team members acknowledge the aspects of care where members of my profession have more skills and expertise.							
27. Physicians assume the ultimate responsibility for team decisions and outcomes.							
28. Team members negotiate the role they want to take in developing and implementing the patient/client care plan.							
29. Team members are held accountable for their work.							
30. It is clear who is responsible for aspects of the patient/client care plan.							
31. Physicians usually ask other team members for opinions about patient/client care.							

Collaborative Practice Domain	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
32. Team members feel comfortable advocating for the patient/client.							
33. Each team member shares accountability for team decisions and outcomes.							
34. Team members have the responsibility to communicate and provide their expertise in an assertive manner.							
35. Team members feel limited in the degree of autonomy in patient/client care that they can assume.							
Communication and Information Exchange							
36. Patients/clients concerns are addressed effectively through regular team meetings and discussion.							
37. Our team has developed effective communication strategies to share patient/client treatment goals and outcomes of care.							
38. Relevant information relating to changes in patient/client status or care plan is reported to the appropriate team member in a timely manner.							
39. I trust the accuracy of information reported among team members.							
40. Our team meetings provide an open, comfortable, safe place to discuss concerns.							
41. The patient/client health record is used effectively by all team members as a communication tool.							

Collaborative Practice Domain	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
Community Linkages and Coordination of Care							
42. Our team has established partnerships with community organizations to support better patient/client outcomes.							
43. Members of our team share information relating to community resources.							
44. Our team has a process to optimize the coordination of patient/client care with community service agencies.							
45. Patient/client appointments are coordinated so they can see multiple providers in a single visit.							
Decision-making and Conflict Management							
46. Processes are in place to quickly identify and respond to a problem.							
47. When team members disagree, all points of view are considered before deciding on a solution.							
48. Disagreements among team members are ignored or avoided.							
49. On our team, the final decision in patient/client care rests with the physician.							
50. In our team, there are problems that regularly need to be solved by someone higher up.							
51. Our team has an established process for conflict management.							



Collaborative Practice Domain	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
Patient Involvement							
52. Team members encourage patients/clients to be active participants in care decisions.							
53. Team members meet face-to-face with patients/clients cared for by the team.							
54. Information relevant to health care planning is shared with the patient/client.							
55. The patient/client is considered a member of their health care team.							
56. The patient's/client's family and supports are included in care planning, at the patient's request.							

**Used with permission**

**Appendix U:**

**Team Climate Inventory (19-items)**

**1. Participation in the team**

**This part concerns how much participation there is in your team. Please tick the most appropriate response to you for each question.**

To what extent do you agree with the following?

<b>PARTICIPATION</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
1. We have a “we are in it together” attitude.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. People keep each other informed about work-related issues in the team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. People feel understood and accepted by each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. There are real attempts to share information throughout the team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. There is a lot of give and take.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. We keep in touch with each other as a team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**2. Support for new ideas**  
**This part deals with attitudes towards change in your team. Please indicate how strongly you agree or disagree with each of the following statements as a description of your team by ticking the appropriate box.**

To what extent do you agree with the following?

<b>SUPPORT FOR INNOVATION</b>		<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
7.	This team is always moving toward the development of new answers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	This team is open and responsive to change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	People in this team are always searching for fresh, new ways of looking at problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	Members of the team provide and share resources to help in the application of new ideas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Team members provide practical support for new ideas and their application.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>




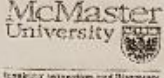
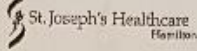
18.	Does the team critically appraise potential weaknesses in what it is doing in order to achieve the best possible outcome?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	Do members of the team build on each other's ideas in order to achieve the highest possible standards of performance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Used with permission.

Thank you very much for completing this questionnaire!

## Appendix V

### Research Ethics Board Approval for Study

 Hamilton Health Sciences	 McMaster University <small>Leading Innovation and Discovery</small>	 St. Joseph's Healthcare Hamilton
<b>Hamilton Integrated Research Ethics Board (HIREB)</b> 293 Wellington St. N., Suite 102, Hamilton, ON L8L 8E7 Telephone: 905-521-2100, Ext. 42013 Fax: 905-577-8378		
April 14, 2015		
<b>PROJECT NUMBER:</b>	<b>15-243</b>	
<b>PROJECT TITLE:</b>	The Feasibility, Acceptability, Implementation, and Impact of an Interprofessional Education Intervention on Collaborative Practice in Home Care Providers Delivering Stroke Rehabilitation to Older Stroke Survivors and their Family Caregivers	
<b>PRINCIPAL INVESTIGATOR:</b>	<b>Sue Bookey-Bassett</b>	
<b>LOCAL PI:</b>	<b>Maureen Markle-Reid, PhD.</b>	

This will acknowledge receipt of your letter dated April 9, 2015 which enclosed revised copies of the Information/Consent Form for the above-named study. These issues were raised by the Hamilton Integrated Research Ethics Board at their meeting held on April 1, 2015. Based on this additional information, we wish to advise your study has been given *final* approval from the full HIREB.

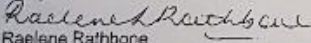
The following documents have been approved on both ethical and scientific grounds:

- > The submission
- > Study Protocol version 1 dated March 8, 2015
- > Information/Consent Form version 2 dated April 8, 2015
- > Semi-Structured Focus Group Interview Guide for home care Providers version 1 dated March 8, 2015
- > Questionnaires: Questionnaire to Evaluate Care Coordinator Training Session; Questions for Team reflective Discussions, Presentation of Result to Team, Fidelity Scale, W(e) Learn Interprofessional Program Assessment Tool, Patient Demographic Questionnaire, Collaborative Practice Assessment Tool and Team Climate Inventory; all versions 1 dated March 8, 2015

**Please note** attached you will find the information/Consent Form with the HIREB approval affixed; all consent forms used in this study must be copies of the attached materials.

We are pleased to issue final approval for the above-named study for a period of 12 months from the date of the HIREB meeting on April 1, 2015. Continuation beyond that date will require further review and renewal of HIREB approval. Any changes or revisions to the original submission must be submitted on an HIREB amendment form for review and approval by the Hamilton Integrated Research Ethics Board.

PLEASE QUOTE THE ABOVE-REFERENCE PROJECT NUMBER ON  
ALL FUTURE CORRESPONDENCE

Sincerely,  
  
Dr. Raelene Rathbone  
Chair, Hamilton Integrated Research Ethics Board

The Hamilton Integrated Research Ethics Board operates in compliance with and is constituted in accordance with the requirements of: The Tri-Council Policy Statement on Ethical Conduct of Research Involving Humans; The International Conference on Harmonization of Good Clinical Practices; Part C Division 5 of the Food and Drug Regulations of Health Canada; and the provisions of the Ontario Personal Health Information Protection Act 2004 and its applicable Regulations; for studies conducted at St. Joseph's Hospital, HIREB complies with the health ethics guide of the Catholic Alliance of Canada

## Appendix W

### Participant Information Letter and Consent Form



#### Participant Information Letter & Consent Form

**Title of Study:** The Feasibility, Acceptability, Implementation and Effects of an Interprofessional Education Intervention on Collaborative Practice in Home Care Providers Delivering Stroke Rehabilitation to Older Stroke Survivors with Multiple Chronic Conditions and their Family Caregivers

<p><b>Local Principal Investigator</b>          Maureen Markle-Reid, RN, MScN, PhD          Associate Professor and Canada Research          Chair Aging, Chronic Disease and Health          Promotion Interventions, School of Nursing          McMaster University, Hamilton Ontario          Tel: 905-525-9140, ext. 22306          E-mail: mreid@mcmaster.ca</p>	<p><b>Student Investigator</b>          Sue Bookey-Bassett, RN, BScN, MEd          Doctoral Student, School of Nursing,          McMaster University, Hamilton, ON          Telephone: (416) 931-3188          e-mail: bookeys@mcmaster.ca</p>
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**Funding Source:** Ontario Ministry of Health and Long Term Care and the Canadian Institutes of Health Research

**Collaborating Organizations:** Saint Elizabeth Health Care, Central East (CE) Community Care Access Centre (CCAC), Seniors' Health Knowledge Network, Heart and Stroke Foundation of Ontario, Ontario Association of CCACs, Ontario Home Care Association, Registered Nurses' Association of Ontario, Canadian Association of Occupational Therapists, Canadian Centre for Activity and Aging, Canadian Stroke Network

As a home care provider who is providing the interprofessional community-based stroke rehabilitation intervention, you are invited to participate in a variety of activities over six months to help evaluate the intervention. In order to decide whether or not you want to be a part of this component of the research study, you should understand what is involved and the potential risks and benefits. This form gives detailed information about the research study which will be discussed with you. Once you understand the study, you will be asked to sign this form if you wish to participate. You should take as much time as you need to make your decision.

Your participation in this research is completely voluntary and you may withdraw from the study for any reason, at any time, without penalty of any sort, and you may refuse to answer any question.

**WHY IS THIS RESEARCH BEING DONE?**

Strokes often occur with other chronic conditions such as high blood pressure, heart disease, or diabetes. New interprofessional team approaches are needed to better support older adults and their family caregivers to manage chronic conditions at home, and improve quality of life after a stroke.

**WHAT IS THE PURPOSE OF THIS STUDY?**

This research is being done to determine the best strategies for preparing home care providers to work in collaborative teams. New approaches are needed to provide interprofessional education for teams working in community and home care settings to enable providers to work collaboratively to manage chronic conditions for clients at home, and improve quality of life after a stroke.

**WHAT WILL MY RESPONSIBILITIES BE IF I TAKE PART IN THIS STUDY?**

If you volunteer to participate in this component of the study, you will participate in the following activities:

- An in-person training program on the Interprofessional Stroke Rehabilitation Intervention
- Complete a short demographic questionnaire and program evaluation immediately following the training session
- Participate in monthly team conferences for six months
- During team case conferences at 2, 4, and 6 months post training, you will be involved in a discussion about how your team is collaborating. Team discussions will be recorded by the researcher in the form of field notes
- At three and six months post training, you will be asked to complete two questionnaires regarding your team's collaboration which should take approximately 30 minutes to complete.
- At six months following the initial training session, you will be invited to participate in a focus group interview to discuss your overall thoughts about the intervention and the impact of the intervention on your practice. The focus group will take approximately 1 hour. If you are unable to attend the focus group meetings and/or would prefer to be interviewed in person, this can be arranged.

**WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?**

There are no known risks associated with the study. However, you may feel discomfort in responding to some of the questions that are asked during the interviews. You may refuse to answer any questions and you may end the interview or study at any time without consequence.



**HOW MANY PEOPLE WILL BE IN THIS STUDY?**

All home care providers delivering the intervention (approximately 36) will be invited to participate in this study

**WHAT ARE THE POSSIBLE BENEFITS FOR ME AND/OR FOR SOCIETY?**

We cannot promise any personal benefits to you from your participation in this study. However, information learned from this research may be used to promote and further develop innovative ways to enhance interprofessional education and collaboration among community-based stroke rehabilitation teams in order to improve health and social care for stroke survivors and their caregivers living at home in the community.

**IF I DO NOT WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER CHOICES?**

It is important for you to know that you can choose not to take part in the focus groups and/or choose not to complete the questionnaires. There will be no penalty for choosing not to participate.

**WHAT INFORMATION WILL BE KEPT PRIVATE?**

Your data will not be shared with anyone except with your consent or as required by law. All personal information such as your name, address, and phone number will be removed from the information that is collected and will be replaced with a number. A list linking the number with your name will be kept in a secure place, separate from your file. The data, with identifying information removed, will be securely stored in a locked office at McMaster University.

For the purposes of ensuring the proper monitoring of the research study, it is possible that a member of the Hamilton Integrated Research Ethics Board may consult your research data. However, no records which identify you by name or initials will be allowed to leave the University. By signing this consent form, you authorize such access.

If the results of the study are published, your name will not be used and no information that discloses your identity will be released or published without your specific consent to the disclosure.

You have the right to review/edit information you provide in the audio recordings of the focus groups. The audio recordings will be accessed only by members of the research team and they will be destroyed after 10 years.

**CAN PARTICIPATION IN THE STUDY END EARLY?**

Your participation in this study is voluntary and you may withdraw at any time. You have the option of removing your information from the study by simply requesting for it to be removed.

You may also refuse to answer any questions you do not want to answer by saying “pass” and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

**WILL I BE PAID TO PARTICIPATE IN THE STUDY?**

There will be no payment for participation in this study.

**WILL THERE BE ANY COSTS TO ME IN THIS STUDY?**

There will be no costs for participation in this study.

**IF I HAVE QUESTIONS ABOUT THIS STUDY, WHO SHOULD I CALL?**

If you have any questions about the research now or later, please contact the Local Principal Investigator, Dr. Maureen Markle-Reid at McMaster University, 905-525-9140, ext. 22306.

This study has been reviewed by the Hamilton Integrated Research Ethics Board (HIREB). The HIREB is responsible for ensuring that participants are informed of the risks associated with the research, and that participants are free to decide if participation is right for them. If you have any questions about your rights as a research participant, please call the Office of the Chair, Hamilton Integrated Research Ethics Board at 905-521-2100 x 42013.

**CONSENT STATEMENT**

**Participant:**

I have read the preceding information thoroughly. I have had an opportunity to ask questions and all of my questions have been answered to my satisfaction. I agree to participate in this study. I understand that I will receive a signed copy of this form.

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Name (Please print)	Signature	Date
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**Person obtaining consent:**

I have discussed this study in detail with the participant and/or their substitute decision maker. I believe the participant or their substitute understands what is involved in this study.

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Name, Role in Study	Signature	Date
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## Appendix X

### Calculations of Effect Sizes

Paired Samples Test\*

	Mean	Std. Deviation <sup>+</sup>	Cohen's d
Pair 5			
CPAT CommInf Exch T1	0.34	.764	0.45 (small effect)
CPAT CommInf Exch T2			
CPAT CommLink T1	0.59	1.02	0.57 (medium effect)
CPAT CommLink T2			
CPAT DecMakConf T1	0.46	.852	0.54 (medium effect)
CPAT DecMakConf T2			
TCI TaskOrient T1	0.38	.707	0.54 (medium effect)
TCI TaskOrient T2			

\*Subscales/domains with statistically significant differences

+ SD are based on paired t-tests