

An Exploration of Interprofessional Education in Four Canadian Undergraduate  
Nursing Programs

by

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## Abstract

Formal inclusion of interprofessional education (IPE) curricula within Canadian undergraduate nursing programs has been occurring since 2012. While there is evidence that Canadian university nursing programs are working to achieve the integration of IPE throughout undergraduate curricula, a gap exists in what is known about IPE integration in Northern Ontario nursing programs, particularly from the perspectives of faculty members and program administrators. This multiple case study explored how four undergraduate university nursing programs in Northern Ontario integrated IPE into their curricula, including the opportunities and challenges of this work. Program experiences were explored within, and across, four undergraduate nursing programs located in Sudbury (including both English language and French language programs), Thunder Bay, and North Bay. Data acquisition strategies consisted of interviews with program directors ( $n=3$ ), focus groups ( $n=10$ ) and interviews ( $n=3$ ) with faculty members, review of available program documentation and websites, and on-site program observations. Thematic analysis was undertaken for each case and during the cross-case analysis stage. The cross-case synthesis resulted in the following themes: 1) varied understandings of IPE, 2) diverse IPE learning activities within curricula, 3) the requirement for support and resources for IPE and research, 4) student participation and leadership in IPE, and 5) limited IPE evaluation. These results highlight IPE practices within these nursing programs and what supports them. Faculty development, IPE research, student involvement, and administrative support are required to maintain and sustain IPE. Dissemination of results may encourage further research and dialogue on current IPE practices among nursing programs in Northern Ontario and beyond.

Keywords: interprofessional education, nursing programs, multiple case study, Northern Ontario

## Co-Authorship Statement

I declare that this thesis and the research to which it refers is my work as principal investigator and that it includes three articles that are a result of consultation and thoughtful feedback from my thesis supervisor Dr. Nancy Lightfoot and my committee members, Dr. Leigh MacEwan and Dr. Lorraine Carter. Dr. Lightfoot assisted me with editing and revisions on several drafts of the articles in Chapters 3, 4 and 5. Dr. Leigh MacEwan's feedback on all of the articles and the thesis itself assisted me in making the required revisions. Dr. Carter's attention to detail in the writing of the articles and manuscript assisted with the "fine-tuning" of the written work. While Chapter 2 is an article submitted by the principal investigator as an independent endeavour resulting from coursework, I have received permission from each of the co-authors to include the following published and unpublished articles in my thesis:

**Donato, E.** (2015, November). The importance of interprofessional collaboration in health care in rural and northern settings. *Northern Policy Institute* (Issue Brief No. 4).

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## **Chapter 1**

### **Introduction**

#### **Integrating Interprofessional Education into Four University Nursing Programs**

Interprofessional education (IPE) by definition “occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care” (Centre for the Advancement of Interprofessional Education, 2002). The significance of IPE in undergraduate nursing education and its related historical background is integral to understanding the literature being reviewed. This chapter focuses on a review of literature, the research questions, theoretical framework, methodology, and research methods for this study.

#### **Background**

IPE emerged over 30 years ago on an international level and has become more prevalent in educational, research, policy, and regulatory activity in the past 10 years (Reeves, Tassone, Parker, Wagner, & Simmons, 2012). The idea for formal inclusion of IPE activities in undergraduate nursing programs in Canada has further developed more recently, as the accrediting body for nursing programs across Canada, the Canadian Association of Schools of Nursing (CASN) has included IPE as part of their accreditation standards (CASN, 2012). The CASN is a member of the Accreditation of Interprofessional Health Education initiative, a project funded by Health Canada, in which the accrediting organizations for medicine, nursing, occupational therapists, social workers, pharmacists, and physiotherapists participated in creating principles, practices, and competencies for integrating IPE into each of their accreditation standards (Accreditation of Interprofessional Health Education, 2011). The CASN provided undergraduate nursing programs across Canada with updated standard key elements in 2012, and one of them was that “learners develop functional working relationships, including

intra/interprofessional and intersectoral collaboration” (CASN, 2012, p. 1). Nursing programs must now demonstrate the integration of IPE throughout the undergraduate curriculum.

Consideration of the impact of IPE on collaborative patient care has been demonstrated in a variety of national and provincial reports and strategies. The Romanow Report, *Building on Values: The Future of Health Care in Canada* identified interprofessional education as a way for Health Canada to more effectively deliver its programs (Romanow, 2002). Subsequent government documents incorporated the idea of IPE for collaborative patient care which led to the implementation of the *Interprofessional Education for Collaborative Patient-Centred Practice Strategy* in 2005 to ensure that IPE occurred across all health sectors nationally (Gilbert, 2010). The Canadian Interprofessional Health Collaborative was developed in 2006 to ensure that IPE and collaboration continued to occur within the health sciences professions (Canadian Interprofessional Health Collaborative, 2010; Gilbert, 2010). In July 2007, *Interprofessional Care: A Blueprint for Action in Ontario* was released by Health Force Ontario (Interprofessional Care Steering Committee, 2007). This document provided information and recommendations on how to enhance the functioning of the Ontario health care system through the practice of interprofessional care. The Interprofessional Care Steering Committee noted that IPE translates into interprofessional care, which is perceived to improve patient outcomes (Interprofessional Care Steering Committee, 2007). The report also identified that it had been difficult to integrate IPE into the curriculum of university and college programs, due to the lack of IPE accreditation standards (Interprofessional Care Steering Committee, 2007). The lack of best practices in IPE within the curricula of health sciences programs has also been recognized in the literature (Abu-Rish et al., 2012). Interprofessional instructional and institutional strategies are becoming a major focus of professional health and social education programs to better

prepare these professionals for safe, competent, and collaborative practice (Frenk et al., 2010; Interprofessional Care Strategic Implementation Committee, 2010; Reeves et al., 2012; World Health Organization, 2010). The World Health Organization recommended that IPE be implemented in undergraduate programs to prepare health science professionals for inter-collaborative practice pre-licensure, emphasizing that studies are required to examine the relevancy of IPE to the communities being served, its cost effectiveness, and sustainability (World Health Organization, 2013).

Resources and support for IPE are important to consider in IPE initiatives occurring within the northern context. Although frameworks were created to ensure that policy for IPE would address and support curricular integration in pre-licensure programs, it appears that policy variations exist across universities and programs involved in the education of health professionals. There are full-time funded IPE lead positions within Northern Ontario medical schools which exist to ensure that IPE is occurring in the program and to liaise with the other health professional programs to facilitate this collaborative learning. It is unknown whether these types of funded positions exist in Northern Ontario university undergraduate nursing programs and whether there are established faculty who receive release time or other incentives to take the lead in IPE within their curricula. A review of the literature further explores the integration of IPE curricula in undergraduate nursing programs to determine what is occurring in these programs and the types of resources and supports required.

## **Literature Review**

Original peer-reviewed qualitative, quantitative, mixed methods, and quasi-experimental studies conducted since 2007 that examined IPE curricula at national and international levels were included in the review. Thirty articles including 19 articles describing Canadian

undergraduate nursing programs are considered in this review of the literature. Three main categories were identified in the literature about the integration of IPE into undergraduate nursing programs: 1) evidence of IPE in the classroom and clinical practice settings, 2) types of interprofessional learning strategies, and 3) successes and challenges encountered integrating IPE into program curricula.

**IPE in classroom and clinical practice settings.** Research studies involving IPE in classroom and clinical practice settings are primary sources providing valuable information about how IPE is being integrated into nursing curricula. Within the Canadian and international literature, IPE has been demonstrated to occur in both classroom and in clinical placements, both separately and in combination. It is also noted that IPE occurs in a variety of clinical placements in various ways, including community health care settings.

*IPE in classroom in combination with clinical practice settings.* A convergent parallel study over two years in three Northwestern Ontario communities involving 136 students from various professions evaluated the combination of interprofessional clinical placement and small group tutorial learning (Salvatori, Berry, & Eva, 2007). Students from medicine, nursing, occupational therapy, physiotherapy, and midwifery from McMaster University received an invitation to participate in the project, as did students from other unspecified universities who were on placement at these three sites: 79 students from McMaster participated in the study while the remaining 57 students were from eight other universities and four community colleges (Salvatori et al., 2007). A pre-test and post-test study design which used the 18-item Interprofessional Education Perception Scale (IEPS) was completed prior to and after the learning experience. The qualitative phase involved reflective journals which were completed prior to and post the learning experience as well as others done on a weekly basis throughout the

experience (Salvatori et al., 2007). Professions that were represented by more than 10 students at pre-test included: physiotherapy, occupational therapy and medical students. Performance of an ANOVA on these scores indicated that both physiotherapy and occupational therapy students had more positive perceptions of IPE than did medical students (Salvatori et al., 2007).

Reflective journals were completed by 35 students representing all five professional groups. New learning was identified and represented by the following themes: roles of health professionals and interprofessional collaboration; aboriginal culture, spirituality, and health beliefs; health system issues in rural and remote regions; and the process of interprofessional learning. Some students reported wanting more structure; others reported enjoying the unstructured learning experiences that occurred in social settings and community placements (Salvatori et al., 2007). A limitation of the study was the lack of identification of students from other institutions, thus making it difficult to determine how many were from northern nursing programs. Not all students in each of the programs participated in the learning activities such that selection bias may have influenced the results.

Ateah et al. (2011) conducted a modified experimental non-equivalent pre-test, post-test control group study to determine whether the attributes of seven health professions were changed by in-class and/or practice immersion IPE experiences. The 51 participants were students from four faculties: dentistry, medicine, nursing, and pharmacy, and two schools (i.e., medical rehabilitation and dental hygiene) at the University of Manitoba. The authors found that students who had IPE experiences in classroom and clinical settings had significant improvements in their perceptions of other professions as team members (Ateah et al., 2011). Limitations of the study included the small sample size, the lack of comparison between IPE classroom learning and IPE practice learning, and the voluntary nature of participation by students (Ateah et al., 2011).

Voluntary participation may have occurred with those who had a positive attitude and interest in IPE, creating the possibility of selection bias.

An exploratory case study evaluating an IPE program in a maternity setting of a large urban teaching hospital in Canada demonstrated that a combination of workshops and clinically based learning enhanced the interprofessional experiences of participants (Meffe, Moravac, & Espin, 2012). Medical, midwifery, and nursing students in third or final years of their programs, who were on a preceptorship or rotation in either labour and delivery or postpartum care, voluntarily participated in the study. Nine students (three each from midwifery, nursing and medicine) attended six workshop modules and two clinical shadowing sessions. Interviews were conducted with the students at two weeks post-program and, subsequently, at three, six, and 12 weeks post program. Positive IPE outcomes for professional practice in a maternity setting were revealed in four themes: 1) the value of relationship building, 2) evidence of establishing confident communication, 3) demonstrated willingness to collaborate, and 4) improved facilitation of woman/family-centered care (Meffe et al., 2012). Limitations of the study, identified by the authors, were difficulty in determining the impact of the IPE program on student learning in comparison with other personal factors that could have influenced the students at the time; the small sample size which decreased the possibility of generalizing the results; and the voluntary nature of the participants (Meffe et al., 2012) that may have resulted in selection bias.

These studies demonstrated that IPE occurring in classroom in combination with clinical practice settings positively influenced student learning in their role as a member of an interprofessional health care team.

*IPE in the classroom.* Cooper, Macmillan, Beck, and Paterson (2009) evaluated a voluntary extra-curricular student-led seminar series on global health, at a Canadian University, using a pre-test and post-test exploratory design to determine participants' perceptions of IPE, the value of the IPE experience, and opinions on the appropriateness of global health as an area for IPE. A total of 24 students from medicine, nursing, occupational therapy, and physical therapy, ranging from first- year to senior students, participated in the 10- lecture seminar series. Pre- and post-course questionnaires containing questions focusing on demographics and previous exposure to IPE were completed by the students. Three open-ended questions about expectations and recommendations of the seminar series; one-page reflections on a seminar of choice discussing new knowledge on global health and/or interprofessionalism; and focus groups were utilized to collect further data (Cooper, Macmillan, Beck, & Paterson, 2009). Overall, the results indicated that the global health seminar series was an effective means of delivering IPE. The following themes presented in the findings: global health as a vehicle for IPE, the value of sharing a common interest, perceived practice implications, and recommendations for improvement of the seminar series (Cooper et al., 2009). A main limitation of the study was that student coordinators conducted the focus groups, a factor which presented an obvious bias in data collection (Cooper et al., 2009). In addition, the voluntary nature of student participation may have resulted in selection bias.

A quasi-experimental pre-test/post-test study evaluated a case-based classroom activity involving students from nursing, nutrition, pharmacy, and physical therapy at the University of Saskatchewan (Dobson et al., 2009). A total of 223 students participated in an interprofessional quality improvement activity over one academic year with 134 of these students completing the pre-intervention and post-intervention instruments. This group was comprised of second-year

and third-year nursing students, second-year nutrition students, third-year pharmacy students, and third-year physical therapy students. Additionally, 132 of these students completed evaluations of group process (Dobson et al., 2009). Results revealed positive changes in the perceptions of interprofessional teams across the student groups, while positive evaluations of the group process using the quality improvement case study demonstrated effectiveness in promoting interprofessional learning (Dobson et al., 2009). Limitations of the study were the lower rates of participation for nursing and pharmacy students compared to the other groups, the generalizability of the findings, and the lower rate of nursing students who completed the research part of the project (Dobson et al., 2009). The possibility of selection bias may have occurred given that students who volunteered to participate were likely interested in or had positive attitudes about IPE.

A convergent parallel mixed methods study by Chan, Mok, Ho Po-ying, and Hui Man-chun (2009) that took place in a university in Hong Kong, evaluated how interdisciplinary seminars influenced nursing and social work students' understanding of caring. A total of 32 senior-year undergraduate social work and nursing students were placed in two mixed groups, and participated in two 3-hour interprofessional seminars one week apart. The seminars, which involved a case study on elder abuse, were videotaped and transcribed, and a supplementary questionnaire was completed by all students after the last seminar. Results indicated an improvement in the understanding of caring among senior nursing and social work students, and the interdisciplinary seminar was perceived as an effective process for IPE (Chan, Mok, Ho Po-ying, & Hui Man-chun, 2009). The type of sampling to obtain the group of students was unclear; however, with a total sample size of 32 students, it may have been that the students volunteered

for the study or were selected according to criteria. If either of these occurred, there may have been selection bias.

Balogun, Rose, Thomas, Owen, and Brashers (2015) conducted a cross sectional study at University of Virginia in which a survey was used to determine students' self-perceived competencies with respect to required IPE skills and attitudes toward interprofessional teamwork. A total of 254 students from medicine, nursing and three unknown, were involved in interactive case-based workshops throughout the year. The workshops occurred monthly over one year with groups of an average of 12 medical and nine nursing students in each. Overall results indicated improved knowledge and demonstration of interprofessional teamwork skills (Balogun, Rose, Thomas, Owen, & Brashers, 2015).

IPE occurring in the classroom environment with a variety of professions provided a venue for learning how interprofessional teams function and resulted in overall positive perceptions of interprofessional health care teams.

*IPE in clinical practice.* IPE has occurred in clinical settings such as hospitals, geriatric care centres, home care settings in communities, and schools.

A community-based participatory mixed methods convergent design was employed by Sommerfeldt, Barton, Stayko, Patterson, and Pimlott (2011) to synthesize pre-implementation findings for the development of three site-specific interprofessional working groups in a large metropolitan tertiary care active treatment hospital in Edmonton, Alberta. This study involved students and faculty from various health science disciplines which included nursing, other post-secondary institutions partnering with health care facilities, and clinical staff (Sommerfeldt, Barton, Stayko, Patterson, & Pimlott, 2011). Face-to-face interviews were completed with 58 participants, and surveys were completed by 90 of the participants. Results revealed the need for

faculty and student preparation for IPE, clinical staff's limited interaction with other professionals, and clinical staff's limited knowledge and experience with IPE which led to reduced support of it (Sommerfeldt et al., 2011). Six themes were identified in the findings: communication; profession-specific learning; teamwork; uncertainty with teaching and learning pedagogy; learning and work environment; and potential for increased interprofessionalism. Lack of infrastructure was also identified as a main barrier of IPE (Sommerfeldt et al., 2011). Nursing students made up the majority of students interviewed and surveyed, such that a selection bias was possible. However, the research team was comprised of both clinical and academic members, which was considered an asset.

Vanderzalm, Hall, McFarlane, Rutherford, and Patterson (2013) described a participatory pre-implementation post-implementation study which involved creating a partnership between the University of Alberta and health care delivery institutions. A team of corresponding health care professionals, unit managers, faculty representatives, and a student involved in an interprofessional experience worked together to implement an interprofessional clinical learning unit (Vanderzalm, Hall, McFarlane, Rutherford, & Patterson, 2013). Pre-implementation surveys were completed by 24 participants including patient care team members, students, and faculty members from the following professions: nursing, medicine, occupational therapy, physical therapy, speech language pathology, recreation therapy, social work, nutrition, clinical psychology, audiology, and dentistry. Results revealed that interprofessional education was perceived as a positive way to improve communication and interaction with students and that there was a perception that interprofessional teamwork was working well in the unit (Vanderzalm et al., 2013). Post-implementation focus groups involved a total of 18 patient care team members, students, and faculty members from the following professions: nursing, medicine, occupational therapy, physical therapy, speech language

pathology, recreation therapy, pharmacy, and clinical psychology. Six themes were identified: communication, informal interprofessional learning, role awareness, positive learning environment, and logistics and challenges (Vanderzalm et al., 2013). Of key importance to the success of the unit was the support of leaders and managers from the interprofessional teams. The comprehensive role of these leaders was noted as a challenge, while the suggestion was made that another role be developed such as an interprofessional coordinator to properly support and sustain the project (Vanderzalm et al., 2013). Although the focus of the study occurred on a particular unit, the findings identified could be applied to other team-based practice settings (Vanderzalm et al., 2013). Given that not all students in each program were represented, this may have resulted in selection bias.

Morphet et al. (2014) conducted a sequential mixed methods study involving nursing, medicine, and other health care students who were placed in a ward-based clinical setting in a hospital in Australia. A total of 45 interested students volunteered for this trial two-week placement. Thirty-six of these attended focus groups at the completion of the placement (nine in total), and 38 students completed a survey. Results of both the focus groups and surveys demonstrated that the students felt an increased sense of autonomy, an increased understanding of professional roles and teamwork, and improved communication (Morphet et al., 2014). The small numbers of students on the unit at the time was not representative of the students in each program and all professions, and the small number of multidisciplinary participants in the focus groups may have limited their discussion due to a social desirability bias (Morphet et al., 2014). The selection of a convenience sample of students added to the lack of representation of all students from each program resulting in the possibility of selection bias.

Nasir, Goldie, Little, Banerjee, and Reeves (2017) describe a quasi-experimental post-intervention study evaluating health care student experiences with a case-based clinical approach in a teaching hospital in London, England. Students were recruited by invitation to participate in the learning sessions which occurred over an eight-month period. A total of 329 students representing nursing, pharmacy, medicine, physician associate, physiotherapy, midwifery, occupational therapy, and speech and language therapy participated. Students found the case-based learning in the clinical sessions to be beneficial because they worked with actual patients and also improved their knowledge of working within interprofessional teams, further indicating that they would change their future practice by learning about and working closely with such teams (Nasir, Goldie, Little, Banerjee, & Reeves, 2017). The need to expand the study into other sites was emphasized (Nasir, Goldie, Little, Banerjee, & Reeves, 2017). In addition, the voluntary nature of the placement created a selection bias, as not all students were represented from each of the programs.

Sheppard et al., (2015) used a mixed methods approach to evaluate attitudinal changes of health care students towards older adults and IPE. Dentistry, medicine, nursing, nutrition, occupational therapy, optometry, and social work students participated in a mandatory interprofessional clinical experience at the University of Alabama at Birmingham Geriatric Education Centre in partnership with nursing home facilities. A total of 193 students completed the post-experience assessments which demonstrated the students' appreciation of IPE in providing care in the nursing home setting and a better understanding of the roles of other professions (Sheppard et al., 2015). The learning experience was limited to an interprofessional clinical experience in a nursing home, decreasing generalizability of results.

A three-year pre-test/post-test quasi-experimental mixed methods study by Basran et al. (2012) evaluated the University of Saskatchewan's Longitudinal Elderly Person Shadowing project (LEPS). Three to four undergraduate students from first-year medicine, pharmacy, and physiotherapy; second year of nutrition; third-year nursing; and fourth-year social work were partnered with elderly adults living in the community (Basran et al., 2012). The students in medicine, nutrition, and pharmacy were required to participate, and had the option to choose from mandatory professional skills, professional practice and community service learning. The activity was voluntary for nursing students who received 15 hours of credits toward community nursing, and for physiotherapy students. Surveys and focus groups were completed to determine whether attitude changes in relation to participation in a senior mentoring program were sustained over one year after the community placement, and whether attitudes toward other health care professions improved (Basran et al., 2012). Surveys were completed by 141 students in the pre-program and post-program periods over the time period of 2008-2010; one-year follow-up surveys were completed by 35 students; and 19 students participated in four focus groups which occurred from 2008-2011. Survey results demonstrated no significant changes in students' attitudes toward other professions. However, the participants reported that the interprofessional experience that occurred in the LEPS was valuable as there was a lack of IPE activities in the curriculum (Basran et al., 2012). Challenges with the interprofessional activity were that students in junior years did not yet have a sense of professional identity, and scheduling activities to include all professions was often difficult (Basran et al., 2012). The lack of a control group to compare students who participated in the IPE activity and those who did not was a limitation, along with the small numbers of students from some professions, and the voluntary nature of student participation (Basran et al., 2012) that may have led to selection bias.

An exploratory case study by Fortugno, Chandra, Espin, and Gucciardi (2013) examined an interprofessional placement in a Canadian urban secondary school where four students from nursing, early childhood education, child and youth care, and nutrition programs worked together to deliver 'healthy living' modules. Reflections were completed by the students on a weekly basis throughout the seven-month placement. After the placement ended, a focus group was conducted with the students from nursing, early childhood education, and nutrition, and another focus group was conducted with the two preceptors. Two themes emerged from the findings: team functioning and a shift in perspectives, which demonstrated a positive interprofessional experience within the school setting (Fortugno, Chandra, Espin, & Gucciardi, 2013). A new perception that interprofessional skills and experiences will enhance future participation as part of a team was also identified (Fortugno et al, 2013). The use of focus groups was a limitation as this may have resulted in inaccurate information about the degree of team conflict actually experienced, although other sources demonstrated strong teamwork and limited team conflict (Fortugno et al, 2013). The study participants included only one team comprised of female students that participated in just one placement and were not representative of their programs. The voluntary nature and characteristics of the participants may also have resulted in a selection bias.

Luebbers, Dolansky, Vehovec, and Petty (2017) implemented and evaluated a community-based interprofessional learning activity which took place in Cleveland public schools involving first-year medical and nursing students. The implementation involved three phases: 1) a pilot with six volunteer nursing and medical students; 2) an embedded clinical experience within a required course for nursing and medical students working in pairs in the clinical setting; and 3) revision of the nursing course to include leadership and team skills and students working in larger teams (Luebbers, Dolansky, Vehovec, & Petty, 2017). A mixed methods design using surveys and

student reflections was employed for evaluation purposes, and results focused mainly on the last two phases of the research. A total of 165 medical students nursing students responded to the survey in the second phase and 43 responded in the third phase (Luebbers et al., 2017). Reflections were completed at the end of phase three, and 20 randomly chosen reflections from the medical students and nursing students were analyzed. Results of both the survey and reflections indicated improved communication, collaboration, conflict management and team functioning, and a better understanding of how roles and teamwork improve the care being provided (Luebbers et al., 2017). The higher response rate in phase two from nursing students, which may have been influenced by the larger number of nursing faculty present, and the lower response rate in phase three, due to miscommunication with faculty which resulted in incomplete pre-tests, were limitations (Luebbers et al., 2017).

As demonstrated by these studies, IPE has occurred in a variety of clinical practice settings. These studies have also resulted in positive outcomes with respect to IPE learning for health profession students.

**Interprofessional learning strategies.** Studies involving simulation and student-led clinics were identified in the literature as IPE learning strategies. The literature on IPE in simulation is abundant and is an area that is continuously being researched. Student-led clinics as a learning strategy for IPE are also evident in the literature, both nationally and internationally.

***IPE in simulation.*** IPE has occurred through simulation activities involving a number of health professions students. Modelling by faculty, as well as coaching has been shown to enhance this type of learning.

An exploratory descriptive ethnographic study in a large Canadian university investigated the experiences of nursing and pharmacy students in their final year of their undergraduate

programs who voluntarily took part in three simulation learning activities over a six-hour period (Paul, Olson, Sadowski, Parker, & Alook, 2014). The study sought to determine how the interprofessional simulation learning experience assisted in learning discipline specific skills and the development of interprofessional skills (Paul et al., 2014). A total of nine students from nursing and pharmacy volunteered to participate in the study. Data were collected through use of observation, debriefing sessions, individual interviews, and field notes. Results indicated that the interprofessional simulation learning experience was a positive one that increased confidence, improved understanding of one's own professional role and roles of another profession, and demonstrated a valuing of interprofessional teamwork and relationship-building (Paul et al., 2014). The voluntary nature of the study and small sample size, despite the qualitative study design, were limitations (Paul et al., 2014). The possibility of selection bias also existed, as not all students were represented from their programs.

A non-experimental pre-test/post-test study that took place at University of Manitoba investigated the interprofessional knowledge, skills, and attitudes of nursing, medical, and pharmacy students involved in a simulated nightshift (Joyal, Katz, Harder, & Dean, 2015). Forty-five students from medicine, nursing, and pharmacy responded to the pre-event survey and 11 students from medicine and nursing responded to the post-event survey. Pre-event, students reported a positive perception of interprofessional education and how it would improve patient care through teamwork and improved communication (Joyal et al., 2015). Post-event students indicated that they valued the interprofessional simulation experience and had an improved understanding of other professions' roles, the importance of each team member and increased confidence working as a team member (Joyal et al., 2015). The low response rate of the post-event survey, the lack of formal testing of the survey tool for reliability and validity, and small

sample size were study limitations (Joyal et al., 2015). The voluntary nature of student participation and small sample size may have resulted in selection bias, and completion of the untested survey may have resulted in response bias.

Saylor, Vernoooy, Selekman, and Cowperthwait (2016) conducted a quasi-experimental pre-test and post-test study measuring IPE competencies, self-efficacy, and attitudes toward collaboration in an interprofessional palliative care simulation that took place in a hospital's simulation training facility in Delaware. The study also aimed to evaluate attitudes of nurses and physicians toward collaboration in a palliative care setting post licensure. This pilot study involved third- and fourth-year medical students, junior and senior undergraduate nursing students, physician residents, and nurse interns with less than six months of nursing experience, with a total sample of 104 participants (Saylor, Vernoooy, Selekman, & Cowperthwait, 2016). Purposive sampling was used to identify the participants, and two teams were created for the simulation activity: the student group team and the physician residents and nurse intern team. The simulation occurred with a standardized patient requiring palliative care. Two surveys were completed before and after the simulation activity. The first one measured self-efficacy and the second one measured attitudes toward nurse-physician collaboration. Findings were consistent in both groups who identified a significant increase in self-efficacy and an improvement in attitude toward the nurse-physician collaboration (Saylor, et al., 2016). Study limitations included the small sample size, unequal distribution of participants from health professions, and limited generalizability of results due to the single institution and simulation studied (Saylor, et al., 2016). Purposive sampling and the small sample size may have resulted in selection bias.

Selle, Salamon, Boarman, and Sauer (2008) conducted a non-equivalent pre-test and post-test control group study to determine whether modelling in simulation was beneficial to

students in their experience of IPE in a community college in Dubuque, Iowa. The students voluntarily participated and included those from nursing, physical therapy, social work, and special education, divided into two mixed groups. Students exposed to the modelling scenario indicated that they learned how each profession communicates and contributes to the client case, as well as to client-centered goals (Selle, Salamon, Boarman, & Sauer, 2008). The main challenge identified in providing a modelling experience was the time commitment from faculty (Selle et al., 2008). A limitation of the study was the unequal distribution of students involved from each profession which was the result of the voluntary nature of the participants, while the researchers were faculty representing each of the professions involved (Selle et al., 2008). The voluntary nature of student participation may have resulted in selection bias.

Saxell, Harris, and Elarar (2009) evaluated two simulation experiences of medical, midwifery, and nursing students using a cross-sectional study design in the University of British Columbia's Collaboration for Maternal and Newborn Health. The Maternity Care Club: Maternity Care Hands-On Night and the Interprofessional Labour and Birth Workshop provided the students with simulation experiences in which they learned together (Saxell, Harris, & Elarar, 2009). The Maternity Care Club was student-led while the Labour and Delivery Workshop was faculty-led, which also provided modelling of interprofessional collaboration. Evaluation survey results from 54 students demonstrated an increase in both clinical and interprofessional knowledge for the Maternity Care Hands-On Night, and evaluation survey results from 340 students in the Interprofessional Labour and Birth workshop demonstrated similar results (Saxell et al., 2009). The nature of the student surveys may have resulted in respondent bias, and possibly social desirability bias given the presence of faculty members associated in their learning.

Ruiz, Ezer, and Purden (2013) implemented an exploratory case study design to investigate pedagogical strategies and behaviours of facilitators of IPE over two years, in several mandated learning activities for first-year students in medicine, nursing, occupational therapy, physiotherapy, and communication sciences at McGill University in Montreal, Quebec. A total of 11 university IPE facilitators and 97 students from across the professions were video and audio-taped in several learning situations; the number and composition from each profession varied for each of these (Ruiz, Ezer, & Purden, 2013). The study confirmed that strategies such as creating a supportive learning environment, modelling of interprofessional collaboration, and use of open-ended questions improved interprofessional learning. The authors indicated that faculty development is important to this type of teaching role, but that it is time-intensive and requires support (Ruiz et al., 2013). The inconsistent grouping and number of participants in each learning situation varied, resulting in membership bias. The results were not generalizable because the first-year students had limited knowledge of their profession and the use of videotaping may have had a Hawthorne effect on some students (Ruiz et al., 2013).

Ekmekci et al. (2013) conducted a mixed methods sequential explanatory study about how executive coaching and the use of simulation could facilitate collaborative behavior and leadership, with 12 volunteer undergraduate students from the School of Medicine and Health Sciences and the School of Nursing at George Washington University. Students were assigned in groups of three to simulation workshops involving coaching and participated in completing the Team-Assessment Inventory, reflective essays, and focus group sessions (Ekmekci et al., 2013). The authors found that coaching in the simulation process was helpful to students in their interactions with other professions: they learned about the professional roles of others; understood their own roles better; and had a better understanding of leadership as members of an

interprofessional team (Ekmekci et al., 2013). The small sample of students and the use of only one setting which decreased generalizability of the results, and the appropriateness of the instrument, which had not been used much to track teams over time, were limitations (Ekmekci et al., 2013). The nature of the survey as a means to collect student information may have resulted in a response bias, and the reflective essays and nature of focus groups with such a small sample of students may have led to social desirability bias.

Thus, patient care simulation activities were often identified as valuable IPE learning strategies and resulted in an increase in both clinical and interprofessional knowledge.

***Student-led clinics.*** Student-led community clinics are emerging in the literature as venues for IPE that also meet the needs of various populations within community settings.

Holmqvist, Courtney, Meili, & Dick (2012) used a case study approach to examine a student-led clinic in Canada, and also carried out a review of the phenomenon of student run clinics in Canada. The Student Wellness Initiative Toward Community Health (SWITCH) in Saskatoon's West Side Community Clinic began in 2005 with student volunteers from a variety of disciplines, including 55 students from nursing programs. SWITCH carries out its primary health care agenda with the assistance of these 300 student volunteers and 40 professional mentors annually (Holmqvist, Courtney, Meili, & Dick, 2012). Findings from the experience of students indicated a valuing of the experiences working with actual patients and a change in attitude toward those living in poverty (Holmqvist et al., 2012). A review also took place by a group of students and faculty working within the clinic who gathered information from student run clinics across Canada to examine how they work in comparison to SWITCH. The findings revealed the following themes: health equity, student leadership, and interprofessionalism (Holmqvist et al., 2012). Challenges identified were: lack of a national organization to share

ideas and assist in guiding practice; requirement for liability and malpractice insurance (due to the voluntary nature of the work not being included as part of an educational program); continuity of care and patient flow (due to the rotating numbers of volunteer workers in the clinic); recruitment and retention of students and mentors; and sustainability (human resources and funding) (Holmqvist et al., 2012). The voluntary nature of student participation in the study may have resulted in selection bias.

Ambrose, Baker, Mahal, MicFlikier, and Holmqvist (2015) completed a mixed methods study on the Winnipeg Interprofessional Student-Run Health (WISH) Clinic in Manitoba focusing on student and mentor characteristics and their experiences at the clinic from 2009-2012. Student and mentor data from the clinic files that identified their profession, number of hours, and participation patterns were collated as quantitative data. A qualitative review of the answers to feedback questionnaires which were completed at the end of each shift (250 student feedback forms and 43 mentor forms) was completed, and a previous thematic analysis from 2009 was also consulted (Ambrose, Baker, Mahal, MicFlikier, & Holmqvist, 2015). Thirteen professions were represented in this extra-curricular activity, with the highest numbers being nursing and medicine constituting 50% of the volunteers, while the mentors were found to represent seven different professions, with nursing (31%) and medicine (26%) being the largest numbers (Ambrose et al., 2015). Student participation was variable, as was their attendance at the clinic especially after orientation. However, student learning included increased clinical knowledge, improved communication, knowledge of the roles of other disciplines and how to work with them, and increased knowledge about the community (Ambrose et al., 2015). Mentors indicated that better preparation in the way of resources such as improving the mentor manual, and knowledge of community resources would assist them in their roles in the clinic

(Ambrose et al., 2015). Data were missing due to feedback forms not being distributed consistently, and some forms were unavailable for review. Also, the voluntary nature of the participants providing qualitative data was not representative of all students and mentors from the professional programs (Ambrose et al., 2015). The voluntary participation of study subjects may have presented a selection bias, as students who valued the activity may have been those who participated. The use of feedback questionnaires by students may also have led to response bias.

A prospective cohort study which took place over a three-year period by Sick, Sheldon, Ajer, Wang, and Zhang (2014) examined interprofessional communication, teamwork skills, and attitudes of professional student volunteers from the University of Minnesota running a free clinic in a church basement in a Minnesota neighbourhood (Sick, Sheldon, Ajer, Wang, & Zhang, 2014). Students from medicine, nursing, pharmacy, physical therapy, public health, and social work, were categorized into three groups: those that worked at the clinic; those who had applied but were not successful in their application; and those who never applied. A survey examining changes in interprofessional attitudes was administered to these three groups of students at the beginning of the first year of their programs, at the end of their first year, and at the end of their program. The results for the first year of the study indicated a decrease in interprofessional communication, teamwork skills, and attitudes (Sick et al., 2014). These were attributed to the group in the clinic having experienced the realities of providing care to the population accessing the clinic, resulting in possible difficulty determining at the first-year level, how the team could work together to solve these challenges (Sick et al., 2014). Over the last two years, the study demonstrated that the students in clinic had a higher score than those who were not accepted and those who never applied, thus indicating improved interprofessional

communication, teamwork skills, and attitudes (Sick et al., 2014). The selection of students interested in IPE with already high interprofessional attitudes and skills, the low response rate of the third survey, and the specific clinic model which may not be generalized to other settings were study limitations (Sick et al., 2014). In addition to selection bias, the nature of the student surveys may have presented a response bias.

The use of student-led clinics as a strategy for IPE in undergraduate nursing education has resulted in positive learning for health professions students on how interprofessional teams work, and their roles within them.

**Successes and challenges of integrating IPE curricula.** Studies which included both administrators and faculty incorporating IPE into undergraduate programs have demonstrated the successes and the challenges of IPE. Other studies which involved faculty, health professions staff, and students also revealed factors contributing to successful IPE and associated barriers.

A phenomenological study by Graybeal, Long, Scalise-Smith, and Zeibig, (2010) utilized telephone interviews to explore what makes IPE programs successful and how institutions contributed to IPE success. Participants were administrators representing 10 institutions of higher learning including six from the U.S. and four from Canada. Nursing was represented in all 10 institutions. The main finding was that IPE success was dependent on the level of investment by administrators (mainly the dean) and faculty (Graybeal, Long, Scalise-Smith, & Zeibig, 2010). Curricular successes included the development of elective coursework for students across programs. However, the integration of IPE in course activities was more successful when integrated within programs rather than when they were added on as extracurricular or voluntary (Graybeal et al., 2010). Other challenges included logistics with respect to scheduling, funding support, placement in curriculum for the programs involved, and being able to provide both

clinical and classroom experiences (Graybeal et al., 2010). The authors were all university program administrators, which may have resulted in researcher bias.

Ho et al. (2008) conducted a qualitative survey of five successful Canadian IPE programs in the following universities: University of British Columbia, University of Alberta, University of Ottawa, Dalhousie University, and Memorial University. The study aimed to determine the opportunities and challenges experienced by institutions in the integration of IPE into pre-licensure curricula (Ho et al., 2008, p. 935). Semi-structured interviews were conducted with key informants from the IPE program within each institution which resulted in common themes: the need for IPE champions from both faculty and administration; organizational structures to facilitate IPE; dialogue and development of common objectives among the professions involved; and funding allocation, which was key to implementing and sustaining IPE (Ho et al., 2008). Another main challenge identified was the coordination of scheduling for learning among the involved professions. Although champions of IPE played a significant role in developing and sustaining IPE programs, they required a high level of support and often went beyond their traditional roles in the academic setting by modelling, participating in, and promoting the benefits of IPE within the institutions (Ho et al., 2008). Of particular note was the influence of academia on IPE which facilitated research through the provision of funding. The result of having IPE funding was an overall raised awareness of IPE within institutions, stimulating an interest in and opportunity for further interprofessional collaboration and the development of new champions (Ho et al., 2008). Most of the authors involved in this study were from faculties of medicine which may have resulted in researcher bias. There was no representation from nursing, although nursing programs are listed as participants in IPE programs at each of the five institutions.

Cahn (2014) conducted a case study analysis of documents and oral histories over 35 years from the Massachusetts General Hospital Institute of Health Professions where students from dietetics, nursing, physical therapy, social work, and speech language pathology were required to take classes together. Documents such as meeting minutes, reports, correspondence, and course catalogues were reviewed, and interviews were carried out with four faculty members who were involved since its beginnings. Required courses in the curricula were first implemented, but became time and resource intensive, and when individual program needs arose specific to each profession, IPE was not a priority. IPE ‘champions’ who were program faculty who were knowledgeable about and valued IPE were mainly found to be leading these activities. Finally, voluntary activities were still occurring, but structured required courses were also integrated throughout the programs. Without funding support and faculty commitment to IPE, integration of IPE in the curriculum was difficult to sustain (Cahn, 2014). The author worked for the institution, which may have resulted in researcher bias and bias of previous opinion. There may also have been a recall bias for those who were interviewed.

Lapkin, Levett-Jones and Gilligan (2012) conducted a cross-sectional survey to determine the scope and extent of IPE in Australian and New Zealand nursing, pharmacy, and medicine programs, including the facilitators and barriers to doing so. The participants were faculty members with knowledge of IPE within their program, and in total, 31 out of the 43 universities identified participated. Findings indicated that a variety of IPE activities were occurring in the classroom, clinical placements, and simulation laboratories, with the majority (69%) being mandatory (Lapkin, Levett-Jones, & Gilligan, 2012). The main barriers to IPE integration were identified as scheduling, lack of teaching and learning resources, and funding limitations (Lapkin et al., 2012). The authors indicated that a limitation of the study was the

specific context to Australian and New Zealand universities, which decreased generalizability, although the high response rate of 72% was perceived to provide comprehensive information about IPE activities at the time (Lapkin et al., 2012).

Bilodeau et al. (2010) used a multiple case study approach to evaluate educational components within the curricula as part of the IPE program for Laval University's (Quebec), School of Social Work, Faculty of Nursing, and Faculty of Medicine. The program components were: initial training, practical training in primary care, continuing education, and communications and information technologies to support IPE. The initial training component included a total of 215 pre-licensure students who completed questionnaires after each IPE program course. These students were from nursing, pharmacy, kinesiology, nutrition, occupational therapy, psychology, medicine, physiotherapy, and community health, with the majority from nursing (112), as the courses were mandatory (Bilodeau et al., 2010). By the end of the experience, students demonstrated improved knowledge of the contribution of their discipline, respect for other professions delivering care in practice, and increased knowledge of the benefits of IPE (Bilodeau et al., 2010). Organizational challenges, such as having enough teaching resources to meet high numbers of students in mandatory IPE courses, remained an issue (Bilodeau et al., 2010). Limitations of the study included: the evaluation design, which was empirical and exploratory; lack of feedback on information technologies to support IPE; and lack of valid, reliable, French- language IPE indicators (Bilodeau et al., 2010). Given that the IPE program courses were mandatory for nursing students, it created an unequal distribution of health professions students which may have resulted in election bias. The nature of the questionnaires that evaluated specific IPE learning and were completed after each course may have resulted in response bias.

Takahashi, Brissette, and Thorstad (2010) described a case study report providing feedback from students and staff team members involved in a clinical setting pilot project for a five-week period in partnership between McGill University and the Montreal Shriners Hospital for Children. Two nursing students, two physiotherapy students, and one occupational therapy student participated in this project. Findings indicated that administrative support and buy-in facilitated the position of a coordinator for the program, and that cooperation between academic and hospital setting leaders were integral to the scheduling and timing of activities so the students could learn together (Takahashi, Brissette, & Thorstad, 2010). The main challenge identified was the amount of time the students devoted to the IPE activities, as this was an extra demand outside of the curriculum which resulted in a second offering of the program being shortened and consolidated (Takahashi et al., 2010). The authors felt that the model described could be adapted across other settings. The small sample of students involved was not representative of all students in the programs, which may have led to selection bias.

Successes and challenges of integrating IPE into curricula demonstrated common themes throughout the research studies reviewed. Successes such as administrative resource support, a dedicated coordinator role, presence of faculty champions, and cooperation of IPE facilitators in organizing and scheduling IPE activities were commonly cited, as were the challenges of lack of faculty knowledge of IPE, lack of IPE resources (human and space), the time intensive nature of IPE activities, and difficulties with scheduling.

## Summary of Literature Themes

Several themes were found in the literature about integration of IPE into the undergraduate nursing curricula. Much of the research attempted to determine the efficacy of the IPE intervention itself, such as changes in how professions are viewed as team members, improvements in communication, students learning how to work as part of a team, and ability to provide collaborative care (Joyal et al., 2015; Paul et al., 2014; Saylor et al., 2016). Several systematic and scoping reviews indicated similar findings (Hudson, Sanders, & Pepper, 2013; Lapkin, Levett-Jones, & Gilligan, 2013; Murdoch, Epp, & Vinek, 2017; Reeves et al., 2012).

In a variety of studies, the integration of IPE in clinical practice settings was examined (Morphet et al., 2014; Nasir et al., 2017; Sommerfeldt et al., 2011; Vanderzalm et al., 2013). Some studies focused solely on classroom learning (Balogun et al., 2015; Chan et al., 2009; Cooper et al., 2009), and others focused on the inclusion of IPE in both classroom and practice settings (Ateah et al., 2011; Meffe et al., 2012; Salvatori et al., 2007). This demonstrated the variety of settings in which IPE is occurring within programs. There were very few research articles demonstrating the integration of IPE throughout entire programs (Bilodeau et al., 2010; Cahn, 2014; Ruiz et al., 2013). A scoping review focusing solely on Canadian IPE research by Murdoch, Epp, and Vinek (2017) further demonstrated that a variety of IPE teaching and learning activities were occurring in Canadian undergraduate nursing education.

Patient care simulation activities were often identified as valuable IPE learning strategies (Joyal et al., 2015; Paul et al., 2014; Ruiz et al., 2013; Saylor et al., 2016). The prevalence of IPE in simulation as a learning strategy has also been demonstrated in an integrative review of the literature examining IPE implementation with undergraduate nursing students, which revealed that acute care simulation was one of the most frequent strategies utilized (Hudson et al., 2013).

A systematic review of IPE in nursing by Rutherford-Hemming and Lioce (2018) further revealed that simulation activities were quite prevalent in the literature in comparison to other strategies.

Student-led clinics provided another strategy for IPE in undergraduate nursing education (Ambrose et al., 2015; Holmqvist et al., 2012; Sick et al., 2014). Ng and Hu (2017) conducted an exploratory web-based survey of Canadian student-run free clinics to determine the function and structure of the clinics and to collect statistical information. Six student leaders responded, each representing a fully functional clinic. Students representing a variety of professions worked voluntarily in these clinics including: medicine, nursing, social work, dentistry, psychology, occupational therapy, physiotherapy, pharmacy, speech language pathology, and also at times those not in professional schools such as business (Ng & Hu, 2017). Strengths reported were: increased autonomy, ability to adapt to client and community needs, ability to provide interprofessional care for clients, and availability of IPE opportunities for students (Ng and Hu, 2017). Weaknesses included high student leader turnover, funding issues, recruitment and retention of preceptors, and unpredictable client numbers (Ng and Hu, 2017).

Factors associated with success of IPE integration include the following: administrative support, a dedicated coordinator role, presence of faculty champions, and cooperation of IPE facilitators in organizing and scheduling IPE activities (Cahn, 2014; Graybeal et al., 2010; Ruiz et al., 2013; Takahashi et al., 2010). Faculty commitment to IPE and integration throughout the curriculum facilitated the success of IPE (Cahn, 2014; Graybeal et al., 2010). Ho et al., (2008) found that when IPE research funding was provided within academia, interest and commitment to IPE activities were heightened.

The main challenges of IPE integration noted in the literature were lack of faculty knowledge of IPE, lack of IPE resources (human, space), the time intensive nature of IPE activities, and difficulty with scheduling (Basran et al., 2012; Cahn, 2014; Lapkin et al., 2012; Takahashi et al., 2010; Vanderzalm et al., 2013). In addition, Sommerfeldt et al., (2011) found that the lack of clinician experience with IPE negatively affected the uptake of IPE within clinical placements. The need for funding was also cited as a challenge in successfully integrating IPE (Cahn, 2014; Graybeal et al., 2010; Holmqvist et al., 2012). The recent systematic review by Rutherford-Hemming and Lioce (2018) also identified lack of funding as a barrier to IPE.

IPE is evident in nursing curricula in a variety of ways as demonstrated by the literature. However, many of these studies were one-time interventions or voluntary extracurricular activities that did not include all the students in specified nursing programs (Ambrose et al., 2015; Joyal et al., 2015; Kent et al. ; Morphet et al., 2014; Nasir et al., 2017; Paul et al., 2014; Saylor et al., 2016). One study revealed that the majority of IPE activities were mandatory across universities in Australia and New Zealand (Lapkin, et al., 2012). Despite the various barriers and challenges identified, no studies known to the author suggest that IPE should be excluded from health profession programs.

Further studies are required to explore specific successful IPE program strategies with respect to the integration of IPE throughout entire undergraduate nursing programs. Although IPE curriculum is being integrated into undergraduate nursing curricula in a variety of ways, further research is required to explore the experiences of faculty members and undergraduate nursing program administrators and the resources required. This will assist in determining strategies for integrating IPE into curricula, and in identifying ways to overcome barriers, which will enable nursing programs to successfully meet IPE accreditation requirements.

## Research Questions

Most of the research and evaluation tools available for studying the outcomes of IPE are focused on the interprofessional team experience or student experience of IPE activities (Thannhauser et al., 2010). Research and evaluation about how IPE is being integrated into nursing programs is not as apparent in the literature. Since the CASN accreditation requirements were disseminated to undergraduate schools of nursing in 2012, research is required to determine what is occurring in Canadian undergraduate nursing education with respect to the integration of IPE. Undergraduate university nursing programs across Canada have begun working to meet IPE requirements in their programs. Some Ontario undergraduate nursing programs have funding for IPE and are participating in IPE with other health sciences programs i.e., Queen's University, University of Toronto, and University of Western Ontario (Gilbert, 2010). McMaster University has developed a framework for integrating IPE into their program that “is cost-effective, sustainable and accessible” (Salfi et al., 2011, p. 106). Nationally, there are some successful IPE programs identified that have academic leadership: University of Alberta, Dalhousie University, Memorial University, and University of British Columbia (Ho et al., 2008). There is an apparent knowledge gap in what is occurring in Northern Ontario undergraduate university programs of nursing which requires further study, with only one study taking place in this geographic area (Salvatori et al., 2007).

Northern Ontario is defined as per the current government definition outlined in the 2011 *Growth Plan for Northern Ontario*, which includes 10 territorial districts from the southern boundary of Parry Sound to Hudson Bay and James Bay and the Manitoba and Quebec Borders (Ministry of Infrastructure and Ministry of Northern Development, Mines and Forestry, 2011). Northern Ontario universities serve expansive geographic areas that include rural and in some

cases, remote communities in which students from various professions have the opportunity to participate in clinical practice experiences as team members and practice interprofessional care. What is not clear is how these same students learn about interprofessionalism in their programs. In addition, the resources and opportunities for IPE in Northern Ontario require investigation to determine what contributes to its success and the possible barriers to its integration in undergraduate nursing curriculum. Because nurses are often part of interprofessional teams and recognizing the CASN requirement that IPE exist within undergraduate nursing programs, the following questions were explored in this study:

1. How are four Northern Ontario undergraduate university nursing programs integrating IPE into their curricula?
2. What are the opportunities and challenges experienced by Northern Ontario undergraduate university nursing faculty and program administrators in integrating IPE into their curricula?

### **Reflexivity**

As the experiences of IPE are influenced by both the researcher and the participants, it is important as the researcher to share my background and experiences underlying the research topic by stating these explicitly (Creswell, 2013). Our personal social structures are reflected in how we approach our research, from data collection to analysis, and to how we write the final report (Creswell, 2013). My first assumption in asking the research question was that all undergraduate nursing programs are working on incorporating IPE into their curricula and faculty members are progressing in their knowledge of IPE, which will serve to facilitate this integration for future nurse educators and nursing students. This may or may not be happening, and in fact, this reflection has led me to wonder how this is occurring in undergraduate nursing

programs in the north from the perspectives of the educators and program administrators. Critical reflection assists health professionals in identifying assumptions made regarding interpersonal communications as well as workplace cultures and knowledge (Fook & Askeland, 2007). In the research process, it has been important for me to be aware of my assumptions to ensure that non-leading open-ended questions were used in the interviews, and to keep an open and unbiased mind in the data analysis process. Reflexivity throughout the research process needs to occur in the data gathering and analysis stages (Crotty, 2013; Jootun et al, 2009; Dyson & Brown, 2006).

In order to situate myself as researcher in this proposed study, it was necessary to reflect on myself further as a nurse and as an educator, as this could influence how I approached the research, and perceived and interpreted the results. Clark (2006) indicates that health care professionals are socialized into their profession with a particular worldview that is characteristic of their profession (Clark, 2006). As a registered nurse, I worked as part of an interprofessional team when employed in a rehabilitation unit at a community hospital and have seen the results of successful collaborative team functioning as well as unsuccessful collaborative care. In order for the patient to receive competent care, nurses worked with physicians, occupational therapists, physiotherapists, pharmacists and social workers, with the ultimate goal of having the patient return home. The patient also played a key role in directing and being actively involved in their own care.

As an Assistant Professor and former director in the School of Nursing at Laurentian University I was involved in participating and leading curriculum reviews and revisions where we began to integrate IPE into the undergraduate program. My interest in IPE led me to attend the Ontario Interprofessional Health Collaborative Invitational Provincial Summit, *Sustaining Systemic Changes in Health Education on Interprofessional Education and Collaborative Care*

*through Partnership*. The focus of this summit was the sharing of new and innovative ways health sciences programs were integrating and demonstrating IPE in their programs as well as looking at collaborative care in the health sector. A few years prior to embarking on this research, I was the Laurentian University representative on the Northern Interprofessional Collaborative for Health Education (NICHE) Advisory Committee (Northern Interprofessional Collaborative for Health Education, 2013) led by the Northern Ontario School of Medicine. This committee ensured that the educational institutions in Northern Ontario were connected in the area of IPE and related initiatives. I was a member of this committee because of my interest in IPE and am aware that this involvement and interest may influence my research. This is the reason for placing greater emphasis on how the participants in the research study verbalize their experiences with IPE by ensuring that verbatim qualitative data was used to illustrate research findings. I also completed a reflective journal during the data collection and analysis phases of the study which was discussed with my thesis supervisor at regular intervals.

### **Theoretical and Conceptual Frameworks**

Normalization Process Theory (May et al., 2009) was selected as an appropriate framework for examining the integration of IPE into nursing curricula. It is an implementation theory which was developed to assist in explaining and understanding the factors involved in implementing new and complex practices and interventions (Nilsen, 2015). The theory originated to address issues in implementing and integrating new treatments and ways of organizing care in health settings (May et al., 2009).

Although fairly new, Normalization Process Theory has been utilized in relation to new complex interventions in health care as demonstrated by the literature (Hooker, Small, Humphreys, Hegarty, & Taft, 2015; May, Sibley & Hunt, 2014; Murray et al., 2010). May,

Sibley and Hunt (2014) completed a systematic review using Normalization Process Theory examining qualitative studies on the implementation of clinical guidelines in nursing practice. Results indicated that guidelines are normalized when: 1) activities can be easily integrated into the nurses' workflow; 2) they are legitimized by the nurses; 3) they are part of a community of practice and nurses involve other nurses in group processes to engage in it; 4) they are associated with improvement in nurses' knowledge, and that knowledge can be applied into their work; and 5) there is limited disruption to professional behaviors and roles, and resources are mobilized by the nurses resulting in shared commitment (May et al., 2014).

Normalization Process Theory was developed through multidisciplinary collaborations beginning as a model and progressing to a more complex sociological theory with the focus being on the social action involved in the steps leading to integration of a practice or intervention (May et al., 2009). A main premise of the theory is that, in order to understand how a new practice is integrated, the actions of those who are involved with the practice must be assessed in relation to it. This thinking provides rationale for examining the ideas and actions experienced by those who deliver IPE within their respective programs, namely faculty members and directors. Normalization Process Theory is also relevant to implementation, embedding, and integration of a new practice (May et al., 2009). The term implementation refers to the social organization involved in putting a new practice into place through action; embedding is concerned with the processes that occur to incorporate or not to incorporate a new practice; and integration describes the processes that sustain a new practice within an organization's social matrices (May et al., 2009). In particular, the theory postulates the following: 1) Practices become routinely embedded (normalized) as the result of individual and collective action; 2) The work of enacting a practice is promoted or inhibited through the generative mechanisms of coherence, cognitive

participation, collective action, and reflexive monitoring; and 3) The production and reproduction of a practice requires continuous investment by individuals in action to continue to carry it forward (May et al., 2009).

The generative mechanisms form the crux of the theory and have been described in the literature as dimensions of the complex process of embedding new practices through social agency (May, 2013). Coherence is about how agents make sense and meaning of a complex intervention. Cognitive participation occurs when agents endorse and participate in the complex intervention, thus framing how others can become involved. Collective action occurs when skills and resources are used by agents to carry out a complex intervention and influence how others are to perform. Reflexive monitoring involves the agents evaluating the intervention by gathering data and using the information to modify social relations and actions. These mechanisms are not linear, but are always in relationship with one another and within the context of the intervention most often involving the organizational structure (Murray et al., 2010). The term complex intervention is used to denote the idea that when an intervention or new practice is introduced, it is never simple, and often involves a variety of factors, affecting how one thinks, acts, and organizes within the social structure (May, 2013).

May (2013) describes agents as individuals or groups existing within a social environment who interact, share information, and form intentions and commitments which are expressed and lead to action. Within in this study, the agents were faculty members, directors, students, and others involved in the social environment of the programs and the larger context of the organizational structure. The integration of IPE within an undergraduate nursing program is the complex intervention. This theory will assist in framing the findings according to its main concepts and generative mechanisms.

A conceptual framework specific to IPE in health care professional programs which also contributed to this study is the *Interprofessional Education Process and Outcomes* framework (D'Amour & Oandasan, 2005). In a related article by Oandasan & Reeves (2005), which described the factors, processes, and outcomes of this framework, the overall goal identified was that the “learner should leave his or her pre-licensure program with specific competencies related to the knowledge, skills and attitudes of practicing in a collaborative manner with other health professionals” (p. 46). This conceptual framework was chosen because it illustrated the elements being studied, who would be included in the study, and the relationships that may occur (Appendix A). These elements include 1) institutional factors (i.e., leadership and resources, and administrative processes), and 2) teaching factors (i.e., learning context and faculty development). Teaching factors and institutional factors are interactional, and can influence the professional beliefs and attitudes of faculty and learners towards interprofessional ways of learning and practicing, and these may also act as catalysts or barriers to successful IPE (D'Amour and Oandasan, 2005). This conceptual model was found to enhance the theoretical framework through the inclusion of specific IPE elements to the process of implementation. The framework also provided a visual summary to participants, informing them of the various elements being examined within the research interview questions.

### **Methodology: Multiple Case Study Design**

Qualitative methodology was selected to answer the research questions and enable detailed articulation of experiences related to IPE in undergraduate nursing programs. From among various qualitative options, multiple case study design was selected since it affords the researcher the opportunity to explore similarities and differences within and across cases (Baxter

& Jack, 2008; Creswell, 2013; Yin, 2014). In this instance, the cases were undergraduate nursing programs in Northern Ontario.

This methodology is constructivist in nature, as the participants have different perspectives on IPE depending on their knowledge and experiences in relation to their contexts (Baxter & Jack, 2008; Crotty, 2013). Thus, IPE as an idea does not exist on its own, but is something that has been socially constructed (Edley, 2001). The international evolution and discourse surrounding IPE over the last 30 years in academic, professional, and government arenas demonstrates this. More specifically, the experiences of interprofessional education in undergraduate nursing programs are constructed through interaction and engagement among nursing faculty and other health professions involved. This social interaction occurs within the culture of a specific educational institution and within a sub-culture of the nursing program itself. Participants are also influenced by the historical, social and cultural contexts in this process of meaning-making. The university as a culture and the specific nursing program as a sub-culture shape the meanings of the participants. Human and other resources, communication within the cultural system, and knowledge of the foundations for interprofessional education in nursing undergraduate programs all influence the experiences of the participants. The accreditation standards mentioned previously and the Health Force Ontario (2007) report also set the stage as far as context of what the faculty in each of the nursing programs are experiencing. The attempt to meet standards and expectations set forth by these external bodies further brings forth the question of how the participants in this study are interpreting them and acting on them.

Multiple sources of data collection, including individual interviews, focus groups, examination of program documents, review of websites, and observations were used to determine the IPE content and delivery strategies in each undergraduate nursing program (Yin,

2014). Faculty members participated in focus groups at their corresponding institutions to enable in-depth discussions about IPE within the program. This strategy enhanced the dataset by providing a social context which facilitated descriptions beyond individual accounts and experiences of IPE (Brinkmann & Kvale, 2015). The data collected provided information, ideas, and a variety of perspectives on what is occurring with IPE in the programs, including opportunities and challenges experienced, which is consistent with the main goal of case study research in obtaining the most accurate and complete information to answer the research questions (Stake, 2006; Zucker, 2001).

The advantage of a multiple case study design is that it allows the researcher to analyze various sources of data within and across settings making the results more reliable, however, challenges to this design included the onerous amount of time and data required (Baxter & Jack, 2008). There was also the issue of program and university context with a multiple case study design, which may limit transferability of results. Overall, a multiple case study design lent itself to a more detailed and in-depth analysis of each case and the final cross-case analysis (Creswell & Plano Clark, 2006).

## **Methods**

**Questions.** Individual interviews, focus groups, institutional and program website reviews, observations, and document collection were guided by the first section of the “Interprofessional Education Assessment and Planning Instrument for Academic Institutions” (Association for Prevention Teaching and Research, 2009). This instrument was chosen as a guide because of the consistencies with the elements comprising the *Interprofessional Education Process and Outcomes* framework identified earlier as guiding the research (Oandasan & Reeves, 2005). The instrument was developed to assist programs and institutions to assess IPE

within the curriculum, plan future IPE goals, and assess and address prevention activities (Greer & Clay, 2010). As the purpose of this study was to review IPE throughout entire programs, the first section which assesses IPE across the curriculum was the guide for the data collection (Appendix B). The use of this instrument to guide this research as described was shared with the instrument authors (Greer & Clay), and permission was granted to utilize the tool in this manner. The instrument contains five domains on which the overall data collection and interview questions were based: educational venues, educational evaluation, programmatic participation, institutional support and faculty incentive (Association for Prevention Teaching and Research, 2009). Undergraduate programs of nursing are comprised of theory classes, laboratories, and clinical experiences which are included in the educational venues domain. Semi-structured interview questions were created using the instrument domains as a guide, each question included a section for the provision of relevant documentation, and additional questions were included addressing the second research question on the opportunities and challenges of integrating IPE in the curricula. Questions were constructed which attempted to determine the extent of the integration of IPE in the programs such as whether IPE is occurring in each year and across educational venues, as well as discussion of the outcomes and evaluation of any IPE initiatives. To reduce the possibility of obsequiousness bias during the interviews and focus groups, each question was followed with open-ended probing questions. There were 13 interview questions (Appendix C) used for both the individual program director and faculty focus group interviews which were translated for the French program by a translator and pilot-tested with a faculty member in another professional program at Laurentian University.

**Setting.** The research took place at the locations of four undergraduate nursing programs in three Northern Ontario universities in Sudbury, North Bay and Thunder Bay from June 2016 to June 2017. In each instance, students apply to the university to be admitted to the nursing program. Undergraduate nursing programs to which students apply to a community college for admission and undergraduate university nursing programs of less than four years duration were excluded. Two of the nursing programs, while offered by the same institution, were different in language and structure. At this university, one program was offered in English and the other in French. The programs include different courses and sequencing of content, with overall programmatic goals of each of them leading to an undergraduate nursing degree. Refer to Figure 1 for a map of these locations.

Figure 1. Map of Northern Ontario Showing Postsecondary Institutions

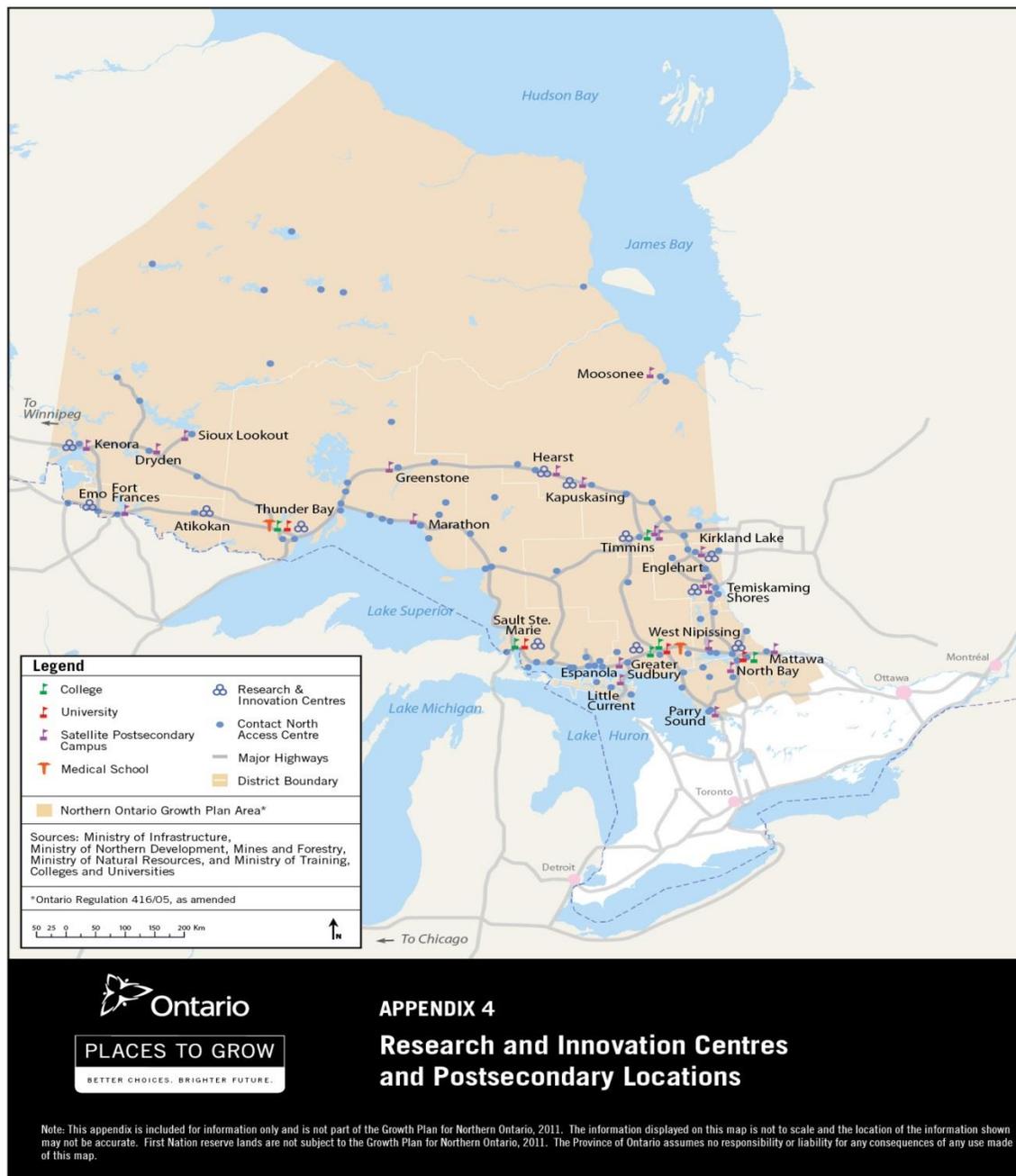


Figure 1. Map of Northern Ontario showing postsecondary institutions.

Ministry of Infrastructure and Ministry of Northern Development, Mines and Forestry. (2011). *Growth plan for Northern Ontario*. Appendix 4: Research and innovation centres and postsecondary locations. Retrieved from [https://www.placestogrow.ca/index.php?option=com\\_content&task=view&id=368&Itemid=65#appendix1](https://www.placestogrow.ca/index.php?option=com_content&task=view&id=368&Itemid=65#appendix1)

**Sample.** In case study research, the case is the unit of analysis and can encompass an individual, program, process, or difference between organizations (Baxter and Jack, 2008). The case or unit of analysis was the integration of IPE curriculum in, and across, four Northern Ontario University undergraduate nursing programs. Establishing boundaries in a case study is similar to developing inclusion and exclusion criteria in a quantitative study (Baxter and Jack, 2008). Northern Ontario four-year undergraduate nursing programs, where students must apply to the university to be admitted, were included. Northern Ontario undergraduate nursing programs where students apply to the college for admission into compressed undergraduate nursing programs, that is, those of less than four years duration, were excluded. Therefore, the Laurentian University undergraduate nursing programs delivered at Sault College, Northern College and Cambrian College were not studied at this time. It was important to limit the number of cases for this study, as seven sites would be time and resource intensive. As well, the existing nursing programs occurring primarily in university settings facilitated the choice to have these four similarly categorized cases for this study. Ideally, two faculty members per year of each program were sought out for participation in order to have representation from all years being taught. This was the best scenario for gathering information about what was occurring throughout the entire curriculum. Program directors were directly involved in curriculum planning, and in three of these nursing programs they were also faculty members teaching in their respective programs. Program directors were also responsible to the deans of their respective faculty or department and were advocates for faculty resources and other types of program support. Therefore, undergraduate nursing program directors, as well as faculty members were involved in the study, as both faculty member and administrator knowledge and support for IPE are known to be integral to its success (Reeves et al., 2012).

The varied contexts of the institutions and programs were considered in the data collection. For example, each undergraduate nursing program included in this study is in collaboration with a college partner and there are differences for how the faculty members at each the college and the universities are involved in teaching in these collaborative programs. If college faculty members were teaching in a university program on the same campus and sharing resources, they would be included as participants in the focus groups if they wished.

**Ethics.** Ethics review occurred at Laurentian University, Nipissing University and Lakehead University. Research Ethics Boards from all institutions approved the study. The interviews and focus groups involving the two Laurentian University undergraduate programs involved a bilingual facilitator obtained through a consulting company to prevent any perceived bias in the data collection process, ensure anonymity, and accommodate program language preferences. This was important as I am a member of this particular School of Nursing and also know the faculty members of both programs. The letters of research approval can be found in Appendices D, E, and F.

**Data collection.** A combined letter of invitation and consent form (Appendix G) describing the study was sent as an email attachment to each nursing program's administrative support staff at the involved School of Nursing. This individual then forwarded the email to the program directors and faculty members, with a one-month response period. Reminder emails were sent after two weeks and again within one week of the response period deadline. The email script and letter were translated into French for the program offered in French by a professional translator. A timeline for the data collection was shared with participants in this letter. The letter also indicated that a one-page summary of overall study results, and their own program results, would be provided to each program for their own use and information in reciprocity for their participation.

Two to three days were spent at each institution for the interviews, collecting program and course descriptions, reviewing the university's strategic plan, reviewing the program's website for evidence of IPE in undergraduate program strategic planning, and documenting on-site observations. Program directors ( $n=3$ ) were interviewed in their offices, which were the preferred sites for all of them, for up to 1.5 hours for each of their programs (one director oversees two programs within the same institution). Faculty members ( $n=13$ ) from each corresponding program participated in focus groups ( $n=4$ ) in rooms at each university away from their respective nursing departments for approximately 1.5 hours. Both full- and part-time faculty members who taught across a variety of years of the program participated. There was one case in which faculty members employed by the college partner who taught in the collaborative nursing program teaching students on the same campus became study participants. One focus group member from each of three program sites was unable to participate in the focus group interview due to unforeseen circumstances. Because these individuals still wished to participate, they were given the opportunity to be interviewed after the focus group had occurred ( $n=3$ ). Another faculty member from one of the programs consented to the focus group but did not attend and did not request an interview. Table 2 in chapter three provides details of the characteristics of program directors and participating faculty members in relation to their programs. This information highlights how some program directors hold administrative roles and do not teach, while others do teach in the program, thus giving them an awareness of IPE integration that is not solely administrative. Sometimes the director's role is differentiated by not being part of a university faculty association or union. Although the request in the letter of invitation was that two faculty members per program year participate, faculty in the involved

schools often teach in more than one year of the program. This circumstance resulted in focus group participant numbers being smaller than originally conceptualized.

Rooms were booked at each university in a location away from the nursing units for both the focus groups and director interviews. Directors were interviewed separately so that administrative issues related to IPE could be addressed as well as curricula information. Incentives were provided in the form of refreshments during focus groups and \$15.00 gift cards from Tim Horton's, a coffee shop chain, was provided to each participant before interviewing commenced. The interviews and focus groups at the two Laurentian University undergraduate programs had a bilingual facilitator obtained through a consulting company to prevent any perceived bias by me as principal investigator in the data collection process. This ensured anonymity, and accommodated the language preferences of the participants. In these particular cases, the external facilitator notified the principal investigator of any documents and electronic website sources for review after the interviews and focus groups were completed. Respondent validation occurred during the data collection by returning verbatim transcripts of individual and focus group interviews to participants for review. This activity was given a specified time for completion of one month, allowing those who wanted to participate in this step to return any changes or edit their transcript.

Interviews and focus groups were digitally recorded and were transcribed verbatim. French interviews were translated into English by a translator. Use of digital recording allowed the researcher to concentrate on interviewing without the interruption of note-taking. Use of verbatim transcribing by Transcript Heroes Transcription Services, allowed the researcher to observe nuances in the conversation as well as provided a format for a detailed analysis. Interview data was accessible only to the principal investigator and thesis supervisor. Collection

of hard copies and electronic documents occurred on-site at each institution and online after the interviews. Data from documents and websites varied across sites and included: institution and program strategic plans, program goals and objectives, course descriptions, IPE related newsletters, IPE committee terms of reference, IPE needs assessment reports, and accreditation reports. Observations with respect to resources and learning spaces were made on-site during tours provided by participants. On-site information gathered was recorded as field notes. Hard copies, and electronic data stored on a password-protected external hard drive was locked in the principal investigator's work office in a locked cabinet in the School of Nursing at Laurentian University. The data will be kept for a minimum of five years following completion of the project as per ethics approvals from all sites.

**Quality control.** Validity or credibility in multiple case study research requires that enough detail is provided in the data and analysis (Baxter & Jack, 2008). The triangulation involved in collecting a variety of data sources and comparison of data both served to accomplish this. Field notes were recorded as part of the on-site data collection to ensure that any differences or unexpected issues occurring at each program site were documented. This process contributed to the dependability of the study findings. Respondent validation occurred during the data collection which assisted in ensuring that the data collected was accurate. Consistency and accuracy of the findings was further validated by having samples of data checked with the thesis supervisor during both the coding process and identification of cross-case themes. Researcher bias was dealt with throughout all phases of the study through the process of reflexivity by keeping reflective journals and sharing these with the thesis supervisor periodically through the data collection and analysis phases.

**Data analysis.** Thematic analysis of individual and focus group interviews, documents, websites, and observations was completed for each of the four programs (Braun and Clarke, 2012). Thematic analysis is a process in which the researcher engages in identifying, analyzing and reporting patterns or themes in the data collected (Braun & Clarke, 2006). Coding used was based on the data and codes arising from the data were identified for each case. Coding was done manually allowing the researcher to immerse herself in the data, check for accuracy, and practice validation. For each program, data sources were compiled into a chart format to facilitate review of information and generation of final codes. Categorical aggregation was used to establish between five to seven final themes for each program which were compiled into another chart with corresponding evidence from the data sources (Creswell, 2013). The codes and themes for each case were reviewed at several points throughout the data analysis phases as were the recordings to ensure accurate representation of findings. Finally, cross-case analysis was conducted, allowing for review and comparison of codes and themes across all of the cases, which produced five final themes which constitute the main results of this research (Yin, 2014). Codes and potential themes were discussed and reviewed for feedback with the thesis supervisor and committee members throughout this process. See Appendix H for the cross-case themes which include detailed evidence from all data sources. Direct interpretation of single instances occurred to ensure that any unique IPE experiences of each case were also included in the findings (Creswell, 2013). The cross-case synthesis findings which include unique program experiences are presented in Chapters 3 and 4.

## Summary and Overview of Subsequent Chapters

A research study using a multiple case study design to identify how four Northern Ontario nursing programs are integrating IPE, particularly from faculty member and program administrator perspectives, has been introduced. The background, literature review, and methods sections have been presented to detail the specific components of this research. Chapters 2, 3, 4, and 5 are separate articles that were written in relation to this research. Chapter 2 is a briefing note discussing the importance of interprofessional collaboration in health care in rural and northern settings. This briefing note was peer-reviewed and published on the website of the Northern Policy Institute (Issue Brief No. 4) in 2015. Chapter 3 is a review article of specific Canadian literature on IPE and the implications for continuing education for healthcare professionals. This article was written to highlight the state of IPE in nursing education in Canada since 2012 and to explore the role of continuing education in sustaining interprofessional learning and care in practice. An important finding was that faculty development played an important role in enhancing IPE student experiences (Basran et al., 2012, Bilodeau et al., 2010, Graybeal et al., 2010, Ho et al., 2008, Ruiz et al., 2013, Sommerfeldt et al., 2011, Vanderzalm et al., 2013). It was also identified that some health professionals with whom students were learning did not feel comfortable or knowledgeable about IPE (Sommerfeldt et al., 2011). Thus, how continuing education could play a role in the professional development of both faculty and health care professionals was addressed. This review article was published in the *Journal of Professional, Continuing and Online Education*, Volume 1(1) in 2016. Chapter 4 is an article that presents the results of this research study as a cross-case synthesis. The article that constitutes Chapter 5 discusses the results of this research with an emphasis on the supporting data, and how these data sources demonstrate congruencies and dissonances with the interview

and focus group data. Chapter 6 is the concluding chapter that includes a summary and synthesis of the information in the four articles preceding it, a discussion of overall study results, study strengths and limitations, and implications and suggestions for future study.

## Chapter 2

### **The Importance of Interprofessional Collaboration in Health Care in Rural and Northern Settings**

“Interprofessional care is the provision of comprehensive health services to patients by multiple health care providers who work collaboratively to deliver quality care within and across settings” (Interprofessional Care Steering Committee, 2007, p. 7). Several government initiatives have occurred in the last 15 years pointing to the importance of interprofessional care as a strategy to improve access to health care. However, the extent that interprofessional care is relevant to meeting health care needs in rural and northern settings should be determined as well as its utility within the context of the present health system, expectations of the population, and establishing rationale for choosing it as an intervention (Huicho et al., 2010).

*The Rural and Northern Health Care Framework/Plan: Report of the Rural and Northern Health Care Panel* indicated that health care access challenges are experienced by communities throughout the province, but that certain access challenges are uniquely exacerbated in rural, remote and Northern Ontario (MOHLTC, 2010). The context of the health care system also plays a role in access to health care in rural and northern communities. Although the provinces have jurisdiction over health care administrations, they delegate the actual service delivery to various health service providers and a multitude of organizations (Marchildon, 2013). This has created a system of fragmented care and varied access to health care services across rural and northern communities, further validating the need for strategies to provide improved access to care in these settings.

The expectations of rural and northern communities are largely based on the need for accessible health care. The Drummond Report indicated that Ontarians and Canadians want

access to quality of care, and that proper planning for health care delivery must occur to ensure this (Drummond, 2012). It also has been noted in the literature that access is an issue for rural and northern communities and that it is important to consider in evaluating the health status of individuals living within them (Adams et al., 2015; Bourke, Humphreys, Wakerman, & Taylor, 2012; DesMeules et al., 2012; Moss et al., 2012; Muir-Cochrane, 2014; White, 2013; Pong et al., 2011; Russell et al., 2013). The *Growth Plan for Northern Ontario* spoke to increasing the number of health care professionals and increasing access to health care in order to promote growth and sustainability of Northern Ontario communities (Ministry of Infrastructure and Ministry of Northern Development, Mines and Forestry 2011).

### **Why Interprofessional Care As A Strategy To Improve Access To Health Care?**

Access to health care is one of the main issues in rural and northern communities, and interprofessional care may serve to improve access to health care for individuals living in rural and northern settings. The Romanow Report recommended that a new *Rural and Remote Access Fund* be established to support new approaches of health care delivery and that a portion of this fund be used to address the need for health care providers in these communities (Romanow, 2002). The report further recommended collaborative approaches to service delivery in order to maximize the benefits of skilled multidisciplinary teams and networks (Romanow, 2002). In 2004, the *First Ministers Accord on Health Renewal* established goals that 50% of Canadians should have 24/7 access to multidisciplinary health care teams by 2011 and additionally that access to care be improved in northern communities (Health Canada, 2004). In July 2007, *Interprofessional Care: A blueprint for action in Ontario* was released by Health Force Ontario (Interprofessional Care Steering Committee, 2007). The document provided information and recommendations designed to enhance the functioning of the Ontario health care system through

the practice of interprofessional care in order to increase access to health care (Interprofessional Care Steering Committee, 2007). Subsequently, amendments to the *Regulated Health Professions Act* came into place in 2009 with an aim to improve health care and access to health care by

- expanding the scopes of practice in 12 different health care professions;
- requiring the health professional regulatory authorities to work together;

to develop common standards of knowledge, skill, and judgment in areas where their professions may provide the same or similar services; and,

- making team-based care a key component of health professional regulatory authority quality-assurance programs to ensure the ongoing competence of registered health professionals.

(Interprofessional Care Strategic Implementation Committee, (2010).

These amendments allowed health care professionals such as Nurse Practitioners to practice with an expanded scope, providing access to a wider breadth of services and also set the stage for team-based health initiatives where a variety of health providers work together to provide accessible health care.

### **What Does Interprofessional Care Look Like In Rural and Northern Communities?**

Hutchinson, Lévesque, Strumpf, and Coyle (2011) indicated that government initiatives such as providing support for interprofessional primary health care teams, as well as expansion of the primary health care provider pool, are transformative changes that improve access to health care. One of these initiatives was the creation of the *Quality Management Collaborative*, renamed the *Quality Improvement and Innovation Partnership* by the MOHLTC in 2007, the objective of which was to assist with the transition to a team-based model of primary health care

delivery (Hutchinson, Lévesque, Strumpf, & Coyle, 2011). The development and increase in number of Family Health Teams and Nurse Practitioner-Led Clinics in rural and Northern Ontario are examples of this, which have been reported as providing increased access to care (MOHLTC, 2014; RNAO, 2015).

Parker et al., (2013) indicate that even though interprofessional care has been associated with positive health outcomes in rural settings, there is limited evaluation on models of successful interprofessional care in rural settings. Variations in workload and the decreased number of health care professionals within rural settings along with non-valuing of professional roles and fragmentation of services were found to be the major barriers to successful interprofessional care in rural communities (Parker et al., 2013). Many health care professionals in rural and northern settings work part-time and often have more than one place of employment because of the decreased number and variety of health care professionals in these settings. Also, in the attempt to initiate and develop interprofessional care teams in general, there still exists the issue of lack of knowledge among health professions of each other's roles leading to a non-valuing of the very team members with which they work.

Inconsistent implementation of interprofessional care models in rural and northern settings is an issue arising from the fact that these communities differ in the amount of government funding they receive and in the community's investment in or demand for specific initiatives such as Nurse Practitioner-Led Clinics or Family Health Teams (MOHLTC, 2010). It is also known that inequities in access to care along the rural-urban continuum exist and are variable across communities (Sibley & Weiner, 2011; Hutchinson, Lévesque, Strumpf, & Coyle, 2011). These inconsistencies, inequities, and issues in establishing successful interprofessional

care each influence the type of interprofessional care that occurs within these settings, contributing to varying models of health care delivery.

It is evident that more work must be done to support interprofessional care in rural and northern settings and that more research on successful interprofessional care models is required. Some recommendations that have been made to remedy this are: to provide the required resources to support models of interprofessional care in health human resource planning for northern and rural areas; and to provide professional supports such as implementing activities to promote development of professional networks among health professionals, which may assist in the sustainability of interprofessional care teams in rural and northern settings (WHO, 2010; MOHLTC, 2010).

### **Has Interprofessional Care In Rural and Northern Communities Improved Access To Care?**

The development of Family Health Teams and Nurse Practitioner-Led Clinics are examples of interprofessional care initiatives that have arisen in recent years to improve access to care in rural and northern communities. However, inconsistencies in implementation of interprofessional care models make it difficult to evaluate the impact of interprofessional care in rural and northern communities. The ongoing issue of recruitment and retention of health care professionals in northern and rural communities further complicates efforts to improve access to health care through interprofessional care: if there are few or no health professions within a rural or northern setting, then how is interprofessional care to occur? Strategies for recruitment and retention need to begin in educational programs across health professions. Kulig and Williams (2012) suggest that the educational programs of health professions should include rural and northern health content as well as practice experiences and cite the Rural Health Training

Institute (Goodman, 2012) as an example of how this can be accomplished, which is a model for interprofessional care. A review of the literature by Deutschlander, Suter and Grymonpre (2013) found that interprofessional education occurring in practice settings in undergraduate health professional programs had a modest influence on recruitment to underserved areas immediately post graduation. However, the authors caution that it is uncertain whether the inclusion of this interprofessional experience is an overall added benefit to successful recruitment in underserved areas, and that more research in the form of longitudinal studies is required to determine this (2010).

## **Conclusion**

Interprofessional collaboration among health professionals is one piece of the puzzle to meeting health care needs in rural and northern settings. However, attempts to ensure that interprofessional care occurs in these settings have resulted in varied health care delivery across communities. Some of this is due to the availability and variety of health professionals within these communities as well as other barriers to interprofessional care as identified in the literature. Recently, The World Health Organization has made the recommendation that IPE be implemented in undergraduate programs to prepare health science professionals for inter-collaborative practice pre-licensure, emphasizing that studies are required to look at the relevancy of IPE to the communities being served, cost effectiveness, and sustainability (World Health Organization, 2013). A strategy to address the successful implementation of interprofessional care is to include interprofessional education as part of undergraduate professional education, as well as to provide ongoing resources and supports for models of interprofessional care in rural and northern settings.

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### Chapter 3

## Interprofessional Education in Canadian Nursing Programs and Implications for Continuing Education

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## **Interprofessional Education in Canadian Nursing Programs and Implications for Continuing Education**

### **Abstract**

In 2010, the Canadian Association of Schools of Nursing, the accrediting body for nursing programs in Canada, became part of the Accreditation of Interprofessional Health Education initiative. In turn, interprofessional education (IPE) is now a requirement in nursing curricula. Although the requirement is formally in place, how it is achieved varies substantially. This paper explores how IPE has been integrated within Canadian nursing programs. Implications for the continuing education of nurses and other health professionals in order to achieve excellence in interprofessional practice are also considered.

*Keywords:* interprofessional education, continuing interprofessional education, nursing education, interprofessional learning, health professional education

## Introduction

Interprofessional education (IPE) “occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care” (Centre for Advancement of Interprofessional Education, 2002). Identified in the Romanow Report (2002) as critical to the delivery of health services and programs in contemporary Canada, IPE and collaborative patient care became the basis of the Interprofessional Education for Collaborative Patient-Centred Practice (IECPCP) Strategy (Gilbert, 2010). In 2006, the Canadian Interprofessional Health Collaborative (CIHC) was developed to ensure that IPE and collaboration occur across the health professions (CIHC, 2010; Gilbert, 2010).

Later, in July 2007, *Interprofessional Care: A Blueprint for Action in Ontario* was released by Health Force Ontario (Interprofessional Care Steering Committee, 2007). This document provided information and recommendations about how to enhance the functioning of the Ontario health care system through the practice of interprofessional care. The report further identified that it had been difficult to integrate IPE into curricula due to the lack of accreditation standards for IPE (Interprofessional Care Steering Committee, 2007). The lack of best practices in IPE within the curricula of health sciences programs has also been noted in the literature (Abu-Rish et al., 2012).

Interprofessional instructional and institutional strategies are quickly becoming a major focus of professional health and social education programs in order to better prepare health professionals for safe, competent, and collaborative practice (Frenk, et al. 2010; Interprofessional Care Strategic Implementation Committee, 2010; Reeves et al., 2010; Reeves, Tassone, Parker,

Wagner, & Simmons, 2012; World Health Organizational Study Group on Interprofessional Education and Collaborative Practice, 2010). Further, the World Health Organization recently recommended that IPE needs to be implemented in programs to prepare health professionals for inter-collaborative practice in the pre-licensure period, and it emphasized that research is required to examine the relevance of IPE for communities served, cost effectiveness, and sustainability (World Health Organization, 2013). Continuing education for health professionals is likewise vital to achieve the benefits of collaborative, team-based care founded on an interprofessional model.

This paper describes the state of IPE in nursing education in Canada since 2012. In addition, it explores the role of continuing education in sustaining interprofessional learning and care in practice. Continuing educators are challenged to reflect on how they can support this critical practice.

### **Interprofessional Education in Nursing Education in Canada**

While IPE emerged over 30 years ago on the international level, it has become particularly important in educational, research, policy, and regulatory activity in the past 10 years (Reeves et al., 2012). Formal inclusion of IPE activities in Canadian nursing programs has likewise developed recently, particularly over the last five years. Most significant is that the Canadian Association of Schools of Nursing (CASN) now includes IPE as an accreditation standard (CASN, 2012). CASN is a member of the Accreditation of Interprofessional Health Education initiative (AIPHE), which has brought together the accreditation bodies for medicine, nursing, occupational therapy, social work, pharmacy, and physiotherapy in order to develop

principles, practices, and competencies for the integration of IPE within accreditation standards (AIPHE, 2011).

In the case of nursing, CASN has indicated that “learners [need to] develop functional working relationships, including intra/interprofessional and intersectoral collaboration” (2012, p. 1). Given this requirement, Canadian nursing programs must now formally demonstrate the integration of IPE in their curricula.

Nursing schools have had a myriad of experiences—positive and negative—in the effort to embed IPE within programs. The objective of this paper is to i) review the literature to discern how and to what extent IPE is supported by nursing programs; ii) share important themes; iii) consider areas for further study; and iv) reflect on the role of continuing education in supporting interprofessional learning and practice.

### **IPE and Nursing Curricula Since 2012**

The principal theme identified in a review of IPE and nursing in Canada was that interprofessional education is occurring in classrooms and in clinical practice settings. These circumstances have been associated with positive outcomes including improved perceptions of other health professionals as team members. Benefits of the interprofessional learning process have also been identified. Several studies of IPE in Canadian nursing programs occurring prior to 2012 found similar results (Ateah et al., 2011; Basran et al., 2012; Bilodeau et al., 2010; Cooper, Macmillan, Beck, & Paterson, 2009; Dobson, et al., 2009; Graybeal, Long, Scalise-Smith, & Zeibig, 2010; Meffe, Moravac, & Espin, 2012; Salvatori, Berry, & Eva, 2007; Sommerfeldt, Barton, Stayko, Patterson, & Pimlott, 2011).

A community-based participatory study in Alberta involved a partnership between the University of Alberta and health care delivery agencies. A team of healthcare professionals, unit managers, faculty representatives, and a student involved in an interprofessional experience on a unit collaborated to implement an interprofessional clinical learning unit (Vanderzalm, Hall, McFarlane, Rutherford, & Patterson, 2013). Pre-implementation surveys were completed by 14 patient care team members, five students, and five faculty members from the following professions: nursing, medicine, occupational therapy, physical therapy, speech language pathology, recreation therapy, social work, nutrition, clinical psychology, audiology, and dentistry. Results indicated that interprofessional education was perceived as a positive way to improve communication and interaction with students, and that interprofessional teamwork was working well in the unit (Vanderzalm et al., 2013). Post-implementation focus groups involved 11 patient care team members, two students, and five faculty members. Six themes emerged from the focus groups: communication; informal interprofessional learning; role awareness; positive learning environment; and logistics and challenges (Vanderzalm et al., 2013). The support of leaders and managers was identified as extremely important. Because of the complexity of the roles of these leaders, the suggestion was made that another role should be developed such as an interprofessional coordinator (Vanderzalm et al., 2013).

Fortugno, Chandra, Espin, and Gucciardi (2013) examined an interprofessional placement in a Canadian urban secondary school where four students from nursing, early childhood education, child and youth care, and nutrition programs worked together to deliver “healthy living” modules. A focus group was conducted with the students from nursing, early childhood education, and nutrition; another focus group was conducted with two preceptors. Reflections were completed by the students on a weekly basis throughout the seven-month

placement. Two themes emerged from the findings: team functioning and a shift in perspectives which suggested a positive interprofessional experience in the school setting. The idea that interprofessional skills and experiences would enhance future participation in teams was also identified (Fortugno, Chandra, Espin, & Gucciardi, 2013).

Variety in learning strategies was also a theme. Interprofessional learning through simulation, modelling, and combined learning strategies was noted. These strategies have been associated with improved perceptions of professional from other backgrounds as team members.

A non-experimental, pre-test/post-test study at the University of Manitoba investigated the interprofessional knowledge, skills and attitudes of nursing, medical, and pharmacy students involved in a simulated nightshift (Joyal, Katz, Harder, & Dean, 2015). Forty-five students ( $n=12$  medicine,  $n=23$  nursing,  $n=10$  pharmacy) responded to the pre-event survey while 11 students ( $n=5$  medicine,  $n=6$  nursing) responded to the post-event survey. In the pre-event survey, students reported having a positive perception of interprofessional education and how it could improve patient care through teamwork and improved communication. In the post-event survey, students indicated that they valued the interprofessional simulation experience and had an improved understanding of the roles of other professions and the importance of each team member, as well as increased confidence about working as a team member (Joyal et al., 2015).

An exploratory descriptive ethnographic study investigated the experiences of nursing and pharmacy students who took part in three simulation learning activities over a six-hour period during their final year were investigated (Paul, Olson, Sadowski, Parker, & Alook, 2014). The focus of the study was to determine how the interprofessional simulation learning experience assisted the students in learning both discipline-specific and interprofessional skills

(Paul et al., 2014). Results indicated that the simulation experience was positive, increasing confidence, improving students' understanding of their professional roles and the roles of others, and leading to a valuing of interprofessional teamwork and relationshipbuilding (Paul et al., 2014).

Ruiz, Ezer, and Purden (2013) employed an exploratory case study design to investigate pedagogical strategies used in IPE as well as modelling of interprofessional behaviour by faculty over two years. They paid attention to a number of required learning activities for first-year students in medicine, nursing, occupational therapy, physiotherapy, and communication sciences at McGill University in Montréal, Québec. A total of 11 university IPE facilitators and 97 students from across the professions were video- and audio-taped in several learning situations. Findings confirmed that strategies such as creating a supportive learning environment, modelling interprofessional collaboration, and using open-ended questions improved interprofessional learning (Ruiz, Ezer, & Purden, 2013). Faculty development was identified as important to this type of teaching role although it is time-intensive and requires support (Ruiz et al., 2013).

## **Discussion**

Much of the highlighted research involving Canadian schools of nursing focused on the efficacy of IPE intervention itself. Efficacy was understood to include perceptual changes about other professionals, improvements in communication, and ideas and strategies about teamwork (Ateah et al., 2011; Bilodeau et al., 2010; Cooper et al., 2009; Fortugno et al., 2013; Joyal et al., 2015; Meffe et al., 2012; Paul et al., 2014; Salvatori et al., 2007; Sommerfeldt et al., 2011; Vanderzalm et al., 2013). These findings are consistent with several systematic reviews (Hammick, Freeth, Koppel, Reeves, & Barr, 2007; Lapkin, Levett-Jones, & Gilligan, 2013; Reeves et al., 2010; Reeves et al., 2012). Additionally, several of the reviewed studies were

based on one-time interventions or voluntary extracurricular activities (Ateah et al., 2011; Cooper et al., 2009; Fortugno et al., 2013; Joyal et al., 2015; Meffe et al., 2012; Paul et al., 2014; Salvatori et al., 2007).

Some of the studies examined the integration of IPE in clinical settings (Basran et al., 2012; Fortugno et al., 2013; Sommerfeldt et al., 2011; Vanderzalm et al., 2013). By contrast, two studies focused solely on classroom learning (Cooper et al., 2009; Dobson et al., 2009) while three others focused on the inclusion of IPE in both classroom and practice settings (Ateah et al., 2011; Meffe et al., 2012; Salvatori et al., 2007). Strategies identified as facilitators of interprofessional learning included patient care simulation activities (Joyal et al., 2015; Paul et al., 2014), modelling, and other supportive learning strategies (Ruiz et al., 2013). Factors reported to enhance IPE were faculty development, faculty champions, and administrative supports and resources (Basran et al., 2012; Bilodeau et al., 2010; Graybeal, Long, Scalise-Smith, & Zeibig, 2010; Ho et al., 2008; Ruiz et al., 2013; Sommerfeldt et al., 2011; Vanderzalm et al., 2013). The identified challenges included the time-intensive nature of IPE activities, difficulties with scheduling, and lack of professional identity in junior-year students (Basran et al., 2012; Bilodeau et al., 2010; Graybeal et al., 2010; Ho et al., 2008; Ruiz et al., 2013; Sommerfeldt et al., 2011; Vanderzalm et al., 2013). These findings are consistent with the findings of Reeves et al. (2012) and another recent literature review that explored the barriers to and enablers of sustaining IPE (Lawlis, Anson, & Greenfield, 2014). No studies indicated that IPE should not be included in health profession programs, despite the barriers and challenges, and no studies suggested that the inclusion of IPE in curricula makes no difference at all. There was a limited amount of research demonstrating the integration of IPE across all years of programs (Bilodeau et al., 2010; Ruiz et al., 2013).

## **IPE and Continuing Education**

Continuing interprofessional education occurs when members of two or more health and/or social care professions learn with, from, and about each other in practice settings after graduation/post licensure to improve collaboration and the quality of care (Reeves, 2009). The literature identifies two strategies for facilitating interprofessional learning: modelling of interprofessional behaviour and care by faculty, and faculty development with respect to IPE (Basran et al., 2012, Bilodeau et al., 2010, Graybeal et al., 2010, Ho et al., 2008, Ruiz et al., 2013, Sommerfeldt et al., 2011, Vanderzalm et al., 2013). These two findings point to the significance of continuing IPE occurring with health care professions in practice and with educators in the learning arena, be that a classroom, simulation laboratory, or clinical practice setting. Continuing interprofessional education for those involved in the education of nursing undergraduate students is crucial to the successful integration of interprofessional learning pre-licensure, and to the support of interprofessional learning in practice postlicensure. Reeves (2009) conducted an overview of continuing interprofessional education and identified faculty development as one of seven trends emerging in the past several years, thus confirming the importance of IPE faculty development in the last several years.

There is additional evidence that, for some health professions, limited interaction with other professions and lack of knowledge and experience with IPE reduces their support for IPE when it is involved in pre-licensure education in a practice setting (Sommerfeldt et al., 2011). These limitations directly affect how students perceive and learn about interprofessional interactions and practices in the clinical setting, since, as stated previously, modelling is an influence on student learning. Further, the process of continuing IPE necessitates that mutual respect and trust exist within the group and context involved (Legare et al., 2011). If teams of

health care professionals do not know how to work with each other due to a lack of knowledge about or respect for each other's professions, interprofessional learning will not be successfully demonstrated to students. This reality builds the case for ensuring that continuing IPE takes place in practice settings and that content includes material directly relevant to IPE. Such learning opportunities assist health professionals in becoming more knowledgeable about other professions and contribute to safe team-based practice and care. Finally, the development and delivery of interprofessional continuing education programs also require consideration of the varying learning needs of the health care professions involved (Zwarenstein & Reeves, 2006).

### **Final Thoughts**

Although IPE curriculum is being integrated within Canadian nursing programs in diverse ways, further programming and research are required. Among other things, this work needs to investigate the experiences of nursing faculty and program administrators in advancing IPE. The resources required to support IPE likewise requires particular consideration. In this way, strategies for integrating IPE within curricula and ways for overcoming barriers can be determined, thus enabling nursing programs to meet the IPE accreditation requirement more effectively.

At the same time, there is considerable work to do in the continuing education sector to ensure that the learning initiated at the undergraduate level is sustained and advanced when nursing graduates and graduates from other health programs begin practice. Moreover, it is important to recognize that practicing nurses experience teamwork and collaboration in ways that are similar to but also different from how nursing students experience it. Because of this, continuing educators are encouraged to work closely with nurses and other members of interprofessional care teams to ensure that IPE theory and practice are complementary and that

identified IPE gaps are addressed. Acknowledging that Canadian health systems are increasingly dependent on high functioning interprofessional teams, there is important work to be done by continuing educators including administrators, program planners, instructional designers, instructors, and others. With Canada's health care system experiencing the stressors of an aging population, the health impacts of globalization, escalating infrastructure costs, and shrinking budgets, now is a critical time for continuing education to support and advance interprofessional knowledge and practice in the health setting.

**Declaration of Interest**

The authors report no conflicts of interest. The authors alone are responsible for the writing of this article.

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**Chapter 4**  
**An Exploration of Interprofessional Education in**  
**Four Canadian Undergraduate Nursing Programs**

**Abstract**

In Canada, formal inclusion of interprofessional education (IPE) curricula within undergraduate nursing programs has occurred since 2012. While there is evidence that Canadian university nursing programs are working to achieve the integration of IPE throughout undergraduate curricula, a gap exists in what is known about IPE integration within Northern Ontario nursing programs, particularly from the perspectives of faculty members and program administrators. This multiple case study explored how four undergraduate university nursing programs in Northern Ontario have integrated IPE into their curricula, including the opportunities and challenges experienced by nursing faculty and program directors during this integration. Data collection occurred at each site between June 2016 and June 2017 and consisted of interviews with program directors ( $n=3$ ), focus groups ( $n=10$ ) and interviews ( $n=3$ ) with faculty members, review of available program documentation and websites, and on-site program observations. Thematic analysis was undertaken for each case and during the cross-case comparison stage. The cross-case synthesis resulted in the following themes: 1) varied understandings of IPE, 2) diverse IPE learning activities within curricula, 3) the requirement for support and resources for IPE and research, 4) student participation and leadership in IPE, and 5) limited IPE evaluation. Faculty development, IPE research, student involvement, and administrative support are required to maintain and sustain IPE.

*Keywords:* interprofessional education, nursing programs, multiple case study

## **An Exploration of Interprofessional Education in Four Canadian Undergraduate Nursing Programs**

### **Introduction**

Interprofessional education (IPE) “occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care” (Centre for the Advancement of Interprofessional Education, 2002). IPE in health care emerged over 30 years ago at an international level and has become more prevalent in education, research, policy, and regulatory activities of health care professionals in the past decade (Reeves, Tassone, Parker, Wagner, & Simmons, 2012). The formal inclusion of IPE activities in undergraduate nursing programs in Canada occurred more recently when the Canadian Association of Schools of Nursing (CASN) included IPE as part of the accreditation standards for nursing programs across Canada (CASN, 2012). The CASN provided Canadian undergraduate nursing programs with updated standard key elements in 2012, indicating that nursing students must develop the knowledge and skills required for interprofessional collaboration through IPE (CASN, 2012). Nursing programs must now demonstrate integration of IPE throughout the undergraduate curriculum.

### **Background**

Original peer-reviewed qualitative, quantitative, mixed methods, and quasi-experimental studies in which IPE curricula occur at national and international levels were included in this review. Several themes were observed in the literature about integration of IPE into undergraduate nursing curricula. As indicated in the following paragraphs, the efficacy of the IPE intervention on student learning about other professions, teamwork, and collaborative care was examined. In other studies, IPE in classroom and clinical practice settings and IPE learning

strategies were explored. The successes and challenges encountered integrating IPE curricula into programs were also frequent in the literature.

Much of the research focused on the efficacy of the IPE intervention, such as changes in how professions are viewed as team members, improvements in communication, learning how to work as part of a team, and ability to provide collaborative care (Joyal, Katz, Harder, & Dean, 2015; Paul, Olson, Sadowski, Parker, & Alook, 2014; Saylor, Vernoooy, Selekman, & Cowperthwait, 2016). As an example, a post-intervention study by Nasir, Goldie, Little, Banerjee, and Reeves (2017) evaluated a case-based clinical approach in a teaching hospital with 329 students who represented nursing, pharmacy, medicine, physician associate, physiotherapy, midwifery, occupational therapy, and speech and language therapy programs. The students found case-based learning in clinical sessions to be beneficial because they worked with actual patients and improved their knowledge of working within interprofessional teams. The students also indicated that they would change their future practice by learning about and working closely with such teams (Nasir, Goldie, Little, Banerjee, & Reeves, 2017). Several systematic and scoping reviews indicated similar findings (Hudson, Sanders, & Pepper, 2013; Lapkin, Levett-Jones, & Gilligan, 2013; Murdoch, Epp, & Vinek, 2017; Reeves et al., 2012).

In a variety of studies, the integration of IPE in clinical practice settings was examined (Morphet et al., 2014; Sick, Sheldon, Ajer, Wang, & Zhang, 2014; Vanderzalm, Hall, McFarlane, Rutherford, & Patterson, 2013). Luebbers, Dolansky, Vehovec, and Petty (2017) found that a community-based interprofessional learning activity involving first-year medical and nursing students resulted in improved communication, collaboration, conflict management, and team functioning, in addition to a better understanding of how roles and teamwork improve the care being provided (Luebbers et al., 2017).

Some studies focused solely on classroom learning, while others focused on the inclusion of IPE in both classroom and practice settings. Balogun, Rose, Thomas, Owen, and Brashers (2015) conducted a cross-sectional study with 254 students from medicine, nursing, and an unidentified program who were involved in interactive case-based workshops. Overall results indicated improved knowledge and demonstration of interprofessional teamwork skills (Balogun, Rose, Thomas, Owen, & Brashers, 2015). Ateah et al. (2011) found that students who had IPE experiences in classroom and clinical settings experienced significant improvements in their perceptions of other professionals as team members. There were very few articles about the integration of IPE throughout entire programs (Bilodeau et al., 2010; Cahn, 2014; Ruiz, Ezer, & Purden, 2013).

Patient care simulation activities were often identified as valuable IPE learning strategies. Saxell, Harris, and Elarar (2009) used a cross-sectional study design to evaluate two simulation experiences involving medical, midwifery, and nursing students (n= 54, n=340). The study revealed an increase in both clinical and interprofessional knowledge. An integrative review of the literature focused on how IPE has been presented to undergraduate nursing students demonstrated that acute care simulation was one of the most frequent strategies utilized (Hudson et al., 2013). Student-led clinics are another strategy for IPE used in undergraduate nursing education (Ambrose et al., 2015; Kent, Drysdale, Martin, & Keating, 2014; Sick et al., 2014).

Factors associated with the success of IPE integration include the following: administrative resource support, a dedicated coordinator role, presence of faculty champions, and cooperation of IPE facilitators in organizing and scheduling IPE activities (Cahn, 2014; Ruiz et al., 2013; Vanderzalm et al., 2013). A phenomenological study by Graybeal, Long, Scalise-Smith, and Zeibig (2010) explored what makes IPE programs successful and how institutions

contribute to IPE success. Participants were administrators representing 10 institutions of higher learning including six from the United States and four from Canada. IPE success was dependent on the level of investment by administrators (mainly, the dean) and faculty (Graybeal, Long, Scalise-Smith, & Zeibig, 2010).

The main challenges of IPE integration noted in the literature were lack of faculty knowledge of IPE, lack of IPE resources (human and space), the time intensive nature of IPE activities, and difficulties with scheduling (Cahn, 2014; Ho et al., 2008; Kent et al., 2014; Ruiz et al., 2013; Vanderzalm et al., 2013). Similarly, Lapkin, Levett-Jones and Gilligan (2012) conducted a cross-sectional survey to determine the scope and extent of IPE in nursing, pharmacy, and medicine programs and found that the main barriers to IPE integration were scheduling, lack of teaching and learning resources, and funding limitations. Sommerfeldt et al. (2011) found that the lack of clinician experience with IPE negatively affected the uptake of IPE within clinical placements. The need for funding was also cited as a challenge in successfully integrating IPE (Cahn, 2014; Graybeal et al., 2010; Ho et al., 2008; Kent et al., 2014).

IPE is evident in nursing curricula in a variety of ways as demonstrated by the literature. However, many of the cited studies were one-time interventions or involved voluntary extracurricular activities that did not include all the students in specified nursing programs (Ambrose et al., 2015; Ateah et al., 2011; Joyal et al., 2015; Kent et al.; Morphet et al., 2014; Nasir et al., 2017; Paul et al., 2014; Saylor et al., 2016). One study revealed that the majority of IPE activities were mandatory in universities in Australia and New Zealand (Lapkin, Levett-Jones, & Gilligan, 2012). Despite the various barriers and challenges identified, no studies known to the author suggest that IPE should be excluded from health profession programs.

## **Research Questions**

Northern Ontario universities serve expansive geographic areas that include rural and, in some cases, remote communities where students from various professions have the opportunity to participate in clinical practice experiences as team members and practice interprofessional care. What is not as clear is how these same students learn about interprofessionalism in their programs. Because nurses are often part of interprofessional teams and recognizing the CASN requirement that IPE exist within undergraduate nursing programs, the following questions were explored in this study:

1. How are four Northern Ontario undergraduate university nursing programs integrating IPE into their curricula?
2. What are the opportunities and challenges experienced by Northern Ontario undergraduate university nursing faculty and program administrators in integrating IPE into their curricula?

## **Theoretical and Conceptual Frameworks**

Normalization Process Theory (May et al., 2009) was selected as an appropriate framework for examining the integration of IPE into nursing curricula. A main premise of the theory is that, in order to understand how a new practice is integrated, the actions of those who are involved with the practice must be assessed in relation to it. This thinking provides rationale for examining the ideas and actions experienced by those who deliver IPE within their respective nursing programs; that is, faculty members and directors. Normalization Process Theory is also relevant to the implementation, embedding, and integration of a new practice (May et al., 2009). The term implementation refers to the social organization involved in putting a new practice into place through action; embedding refers to the processes that occur to incorporate or not to

incorporate a new practice; and integration describes the processes that sustain a new practice within an organization's social matrices (May et al., 2009). In particular, the theory postulates the following: 1) practices become routinely embedded (normalized) as the result of individual and collective action; 2) the work of enacting a practice is promoted or inhibited through the generative mechanisms of coherence, cognitive participation, collective action, and reflexive monitoring; and 3) the production and reproduction of a practice requires continuous investment by individuals in action to continue to carry it forward (May et al., 2009). May (2013) describes agents as individuals or groups occurring within a social environment who interact, share information, and form intentions and commitments which are expressed and lead to action. Coherence is about how agents make sense and meaning of a complex intervention. Cognitive participation occurs when agents endorse and participate in the complex intervention, thus framing how others can become involved. Collective action occurs when skills and resources are used by agents to carry out a complex intervention and influence how others are to perform. Reflexive monitoring involves the agents evaluating the intervention by gathering data and using the information to modify social relations and actions. The term *complex intervention* denotes that, when an intervention or new practice is introduced, it is never simple, and often involves a variety of factors which affect how one thinks, acts, and organizes within the social structure (May, 2013).

Within this study, the agents were faculty members, directors, students, and others involved in the social environment of the programs and the larger context of the organizational structure. The integration of IPE within an undergraduate nursing program is the complex intervention. This theory will assist in framing the findings according to its main concepts and generative mechanisms.

## Methods

**Methodology: Multiple case study design.** Qualitative methodology was chosen to explore the research questions and enable detailed articulation of experiences related to IPE in undergraduate nursing programs. From among various qualitative options, multiple case study design was selected since it affords the researcher the opportunity to explore similarities and differences within and across cases (Baxter & Jack, 2008; Creswell, 2013, Yin, 2014). In this instance, the cases were undergraduate nursing programs in Northern Ontario. Multiple data collecting strategies including interviews, focus groups, review of program documents and websites, and on-site program observations were used to identify IPE-based content and delivery strategies in each undergraduate nursing program (Yin, 2014). Faculty members participated in focus groups at their respective universities to enable in-depth discussions about IPE within the program. This strategy enhanced the dataset by providing a social context which facilitated descriptions beyond individual accounts and experiences of IPE (Brinkmann & Kvale, 2015).

**Data collection.** The research took place at the locations of four undergraduate nursing programs in three Northern Ontario universities in Sudbury, North Bay, and Thunder Bay, Ontario from June 2016 to June 2017. In each instance, students apply to the university to be admitted to the nursing program. Undergraduate nursing programs to which students apply to a community college for admission and undergraduate university nursing programs of less than four years duration were excluded. Two of the nursing programs, while offered by the same institution, were different in language and structure. At this university, one program was offered in English and the other in French. The programs include different courses and sequencing of content, with overall programmatic goals of each of them leading to an undergraduate nursing degree.

A combined letter of invitation and consent form describing the study was sent as an email attachment to the administrative support staff at the involved School of Nursing. This individual then forwarded the email to the program director and faculty members. The email script and letter were translated into French for the program offered in French.

The researcher's strategies of individual interviews, focus groups, institutional and program website reviews, document collection, and on-site program observations were guided by the first section of the "Interprofessional Education Assessment and Planning Instrument for Academic Institutions" (Association for Prevention Teaching and Research, 2009). This instrument was selected because it was developed to assist programs and institutions in the assessment of IPE within curriculum in order to plan future IPE goals (Greer & Clay, 2010). Semi-structured interview questions were created using the instrument domains as a guide. Each question included a section for the provision of relevant documentation. Additional questions addressing the second research question about the opportunities and challenges of integrating IPE within curriculum were also included. In total, as shown in Table 1, 13 interview questions were used to guide the program director interviews and faculty focus groups. The questions were pilot-tested with a faculty member in another professional program prior to their use in the study.

Table 1

*Data Collection Guide/Open-Ended Questions*

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1. To what extent is IPE occurring in courses in your undergraduate program, and what are the professions involved?
  2. How is IPE occurring in clinical experiences (hospital, clinics, community) in the program, and what are the professions involved?
  3. How is IPE occurring in community projects or service learning in your program, and what are the professions involved?
  4. How is IPE occurring in each year of the program?
  5. Have any of the IPE experiences/activities been assessed or evaluated and if so, by whom?
  6. Is IPE occurring as a voluntary extra-curricular activity in the program? If so, please describe the activity and explain who the professions involved are.
  7. Can you describe the level of student participation in the program? Is it mandatory or voluntary?
  8. Are there staff and resources dedicated to IPE within the program? If so, can you describe their role?
  9. Does the university support IPE in its strategic plan and in other ways?
  10. How are faculty members involved in IPE experiences, and do they receive release time for IPE?
  11. Are there incentives for faculty who participate in student IPE experiences? If so, what are they?
  12. Overall, what are the challenges of integrating IPE in the program?
  13. Are there IPE opportunities that are being explored? If so, what are they?
-

Two to three days were spent at each institution conducting the interviews, collecting program and course descriptions, reviewing the university's strategic plan, reviewing the program's website for evidence of IPE in undergraduate program strategic planning, and documenting on-site observations. Program directors ( $n=3$ ) were interviewed in their offices for up to 1.5 hours per program (one director oversees two programs within the same institution). Faculty members ( $n=10$ ) from each program participated in focus groups ( $n=4$ ) at locations separate from the nursing department for approximately 1.5 hours. Both full- and part-time faculty members who taught in different years of the program participated. One focus group member from each of three program sites was unable to participate in the focus group interview due to unforeseen circumstances. Because these individuals still wished to participate, they were given the opportunity to be interviewed after the focus group had occurred ( $n=3$ ). Another faculty member from one of the programs consented to the focus group but did not attend and did not request an interview. Table 2 outlines the characteristics of the program directors and participating faculty members in relation to their programs. This information highlights how some program directors hold administrative roles and do not teach, while others do teach in the program, thus giving them an awareness of IPE integration that is not solely administrative. Sometimes the director's role is differentiated by not being part of a university faculty association or union. Although the request in the letter of invitation was that two faculty members per program year participate, faculty in the involved schools often teach in more than one year of the program. This circumstance resulted in focus group participant numbers being smaller than originally conceptualized.

Table 2

*Characteristics of Directors and Faculty*

	<b>Director (*n=3)</b>	<b>Focus Group Members (n=13)</b>
<b>Gender:</b>		
<b>Male</b>		2
<b>Female</b>	3	11
<b>Member of faculty association/union</b>	Yes = 2 No = 1	Yes = 12 No = 1
<b>Teach in undergraduate program</b>	Yes = 1 No = 2	Yes = 13
<b>Year of program taught:</b>		
<b>Year 1</b>		5
<b>Year 2</b>		2
<b>Year 3</b>		9
<b>Year 4</b>	1	4
<b>Simulation lab</b>		2

\*(one director oversees two programs)

Respondent validation occurred by returning verbatim transcripts of the interviews and focus group discussions to participants for review. Participants checked the accuracy of their data. Researcher bias due to her previous involvement in IPE activities was explored through reflective journaling during the data collection and analysis phases of the study (Cresswell, 2013). These reflections were shared and discussed with the co-authors.

**Data analysis.** Thematic analysis of data from interviews, focus groups, documents, websites, and on- site program observations was completed for each of the four programs (Braun & Clarke, 2012). Coding was done manually and enabled the researcher to immerse herself in the data, check for accuracy, and practice validation. For each program, the data were compiled in chart format to facilitate review of information and generation of final codes. Focus group

participants were assigned numbers corresponding to the participant's program, e.g., FG1M1.

This strategy assisted in identification of quotations.

Categorical aggregation was used to establish final themes for each program which were then compiled in another chart with corresponding evidence (Creswell, 2013). The codes and themes for each program were reviewed at different points in the analysis phase, as were the recordings to ensure accurate representation of findings. Codes and themes were regularly discussed and reviewed with the co-authors. Finally, cross-case analysis was conducted. Codes and themes were compared, and five final themes emerged (Yin, 2014). Direct interpretation of single instances took place to ensure that unique IPE experiences within a case could be included in the findings (Creswell, 2013).

**Ethical considerations.** Ethics review occurred at Laurentian University, Nipissing University and Lakehead University. Research Ethics Boards from all institutions approved the study. The interviews and focus groups involving the two Laurentian University undergraduate programs involved a bilingual facilitator obtained through a consulting company to prevent any perceived bias in the data collection process, ensure anonymity, and accommodate program language preferences. This was important as I am a member of this particular School of Nursing and also know the faculty members of both programs.

## **Findings**

The cross-case synthesis described above resulted in five main themes: 1) varied understandings of IPE, 2) diverse IPE learning activities within curricula, 3) support and resources for IPE and research, 4) student participation and leadership in IPE, and 5) limited IPE evaluation. Participants from one program identified a lack of accessibility to other health

professionals as a resource issue for IPE. The five themes are described below with relevant supporting data.

**Varied understandings of IPE.** Conceptually, IPE was understood in different ways which led to varied interpretations of its implementation. This theme emerged across all data sources and was prominent in the interviews with faculty members. One faculty member made this comment:

I don't know enough about IPE. I haven't myself had much exposure to it or practice with it or training or development in that, so it would be a real slow, hard learning thing I think, you know? For me it's like that lack of knowledge, you know that almost ignorance about what exactly it is and why it's important (FG1M2).

Given little experience and understanding of IPE, implementation of IPE was difficult to embed and integrate within a program.

Some participants demonstrated a particular understanding of IPE and reported being involved in diverse implementation practices, as one faculty member stated:

I think like once you hear the definition of IPE – I mean, I first thought of IPE, oh, that thing at the medical school, but when I really thought of IPE more broadly, there's a lot going on that we don't – we don't sit down and map our IPE experiences and resources, so it's – a lot of things are taken for granted, but it's actually going on in small pockets all over the place (FG4M2).

The participants further acknowledged varied interpretations of IPE and the need for more knowledge which would improve their understanding of IPE:

Everyone has a different view of what IPE is. There are several definitions that are in the research, it is to learn together from one another, not just to learn. Another thing would be research, to really start pushing the research at home (FG3M1).

### **Diverse IPE learning activities within curricula.**

IPE occurs in a variety of ways in the reviewed curricula. These ways include learning activities occurring in classrooms and clinical practice as well as activities involving both formats. Simulation laboratory activities were reported as a popular means of IPE since case scenarios include students from different health professions working together. Such activities occur to varying degrees in all years of the programs. Similarly, integration of IPE learning objectives into courses has also occurred. In addition to mandatory learning activities, various voluntary IPE learning experiences in which not all students are involved or have the opportunity to participate were reported. In short, there is evidence of both IPE exposure and experience within the studied curricula; these words were used frequently by the participants during the interviews. The term *exposure* was used frequently when the participants described students working alongside other health professionals and in relation to guest speakers in the classroom setting. The term *experience* was used to describe IPE learning occurring mainly in simulation labs and clinical practice where students work collaboratively with other health professions students.

With respect to how IPE is threaded within curricula including the actual learning environment, a program director stated the following: “It’s just threaded through our learning outcome that’s really looking at relationships” (D1).

A faculty member further indicated that: “Students are taught different cases by simulation, different clinical situations that may involve other health professionals” (FG3M4).

Both the mandatory and voluntary nature of IPE activities was described by participants. With respect to IPE occurring in laboratories, a faculty member commented on the mandatory nature of participation in IPE activities: “All students have to attend those labs... those are mandatory” (FG1M3). By comparison, a director spoke about the voluntary nature of IPE simulation activities: “For the simulation, it is voluntary for the students so they can participate if they want...” (D3, D4).

The idea of differentiation between IPE exposure and experience arose several times during the interviews. One faculty member reported:

I keep reading this IPE acronym and I keep thinking okay, so interprofessional education, but in my mind, I keep thinking interprofessional exposure. So, they are going to be exposed to these things but are they engaged in formal or organized education, learning with, from and about each other? No, not really (FG1M2).

Another faculty member commented on how students may be both exposed and immersed in IPE learning within their program: “They are exposed in some areas and immersed in other scenarios with community partners with a variety of professions....” (FG2M1).

**The requirement for support and resources for IPE and research.** Participants emphasized the importance of support and resources for successful IPE integration.

Administrative support in recognizing IPE as integral to the education of health professionals was evident at the institutional level. Research support for IPE was also recognized as important in assisting faculty understanding and incorporating IPE within curricula. Workload allocation for IPE was inconsistent while space and scheduling challenges presented as resource issues. While some faculty provide IPE related activities, this work is on a voluntary basis or for a small credit allocation. Also, while positions dedicated to simulation have been created to lead IPE

learning, such learning requires the use of a particular venue and often voluntary participation by students and faculty. In one case, a lack of access to other health professions was identified. This is a fundamental problem for IPE.

Administrative support by the institution beyond the program level was demonstrated through the presence of IPE language in strategic plans. IPE was often cited by administrators, and was discussed frequently by program directors:

IPE has been identified by our institution and our program as required to be fully threaded and integrated..... Yeah, so they have strong IPE, you know, ideals... every third word is about how interprofessional education is going to be integrated (D2).

Although administrative support was identified in principle and on paper, various resources required for successful IPE integration were lacking. The participants emphasized that the lack of human resources available for IPE needs to be addressed. A leadership role focused on IPE integration within curricula was recommended as a means of organizing IPE opportunities and advocating for resources:

It would be really nice to, in the future, see workload allocation... or whoever is on that committee having a .5 sort of like from an advocacy perspective for how we can get IPE organized better, having .... say a .5 for being the IPE lead and then having a stand-in item on the agenda, the faculty meetings, whatever for an update on IPE stuff (FG1M1).

A faculty member felt that such a role could also provide support for IPE teaching and research:

I just think if they set up or even hired someone that has some experience in IPE to come to faculty council and say.... 'we'd like to help to work with you guys on how you can bring this together for teaching and for research' (FG1M2).

The scheduling of IPE learning activities and the need spaces for these activities were commonly cited as issues by faculty members involved in IPE learning activities. A faculty member from one program emphasized the following: “The schedule logistics, funding, location... I would say that place is really important, funding, human support” (FG3M1). Another faculty member stated that “for any formal approach there’d have to be dedicated- like places- so IPE needs a place to occur” (FG4M1).

On-site observations of programs further revealed a lack of adequate learning spaces required to house IPE activities, although, for some programs, new IPE learning spaces were being planned.

As noted earlier, the challenge of access to other health professionals was experienced by one program. These other professions were regarded to be necessary resources for IPE integration into the curriculum by the participants. One faculty member gave the following reason for this general lack of health professionals in the north: “Because in the north, where universities are smaller, and they would have a smaller mix of disciplines ....” (FG2M1). During one of the focus groups, this idea was further discussed by two faculty members:

It does not occur in each of the four years as much as it should, and as much as some people think it does (FG2M1). I think there are two reasons that it happens. One is that we don’t really have access to all the people that you would normally- like if we were a larger institution, there would be different professions accessible to us.... (FG2M2).

The above circumstance relates to the unique geographic characteristics of Northern Ontario and impacts access to a variety of health professions students in order to facilitate IPE. At the same time, the participant representing the program did indicate that it has partnered successfully with other available healthcare program students to implement IPE within the curriculum.

**Student participation and leadership in IPE.** Nursing students were reported to be involved in IPE learning activities on a voluntary basis. Such activities included simulation and student-led activities such as clinics. Participation in voluntary simulation experiences demonstrated an interest by some students in learning with, from, and about the other health professionals accessible to them. With respect to IPE in simulation, one faculty member shared that it “is very attractive to the student population, they really like the hands on, they like to learn. For those, I see a lot of them, before participating” (FG3M1).

The student-led clinics happen at different points in the programs and, according to one faculty member, are evolving:

The students come together and they take the lead on making that happen. So, it’s something that our program is invited to be involved in, but it’s definitely not something that we can take any credit for. I think the student-led clinic, the principle looks like a nice opportunity. I don’t know what’s going on with it but if they can find a way to get it off the ground (FG1M2).

**Limited IPE evaluation.** Some evaluation of IPE learning has occurred in the programs in a variety of ways. Most of these evaluations were student evaluations which were part of course evaluations; some were related to the clinical practice setting. One faculty member described a student assignment: “It’s a scholarly paper...they have to look up the topic, they have to talk about the experience of being in the IPE experience, and then they have to reflect on it” (FG2M2).

Simulation laboratory IPE initiatives have also had some preliminary evaluation. A program director shared the following: “We are evaluating what we have done. These are pilot projects; we’re exploring to see if there are things we could do differently” (D3, 4).

Documents such as accreditation reports and program assessments for IPE provided evidence of evaluation of the programs and progress with IPE integration. Despite limited evaluation work, activities to improve IPE learning within programs were reported.

## **Discussion**

The findings of this study provide insight into how four undergraduate nursing programs in Northern Ontario have integrated IPE into their curricula. Importantly, these findings are grounded in the perspectives of faculty members and program directors. Review of websites and documents and observations of program settings add to this picture of what has been occurring across the programs. The opportunities and challenges experienced by faculty and program directors in integrating IPE within their curricula are made apparent by application of the generative mechanisms of Normalization Process Theory.

Normalization Process Theory proposes that practices become embedded as the result of individual and collective action such as the participants' varied understandings of IPE. Cognitive participation and collective action by agents occur despite the variations in coherence or understanding of IPE. As agents, the faculty and directors in this study provided evidence of working and partnering with other health professionals to implement IPE learning activities into various formats and to diverse skill levels.

The generative mechanisms, namely, coherence, cognitive participation, and collective action, were demonstrated in the participants' articulation of the supports and resources needed for IPE. These IPE agents were also able to make sense of what it entails to support IPE. This new level of coherence involves the cognitive participation of the agents and ensures that other agents are made aware of how they can become involved in providing resources and supporting IPE efforts. The collective action of implementing IPE within the curricula is occurring to some

extent with the existing resources. While the agents recognize the limitations and barriers to their work, they do what they can and hope that resources will be provided to make their efforts attainable. The need for human resources to lead IPE activities within nursing programs was consistently raised. Some agents have taken on leadership roles in their programs and are using available resources to provide IPE experiences for students. These agents may not be provided much or anything by way of remuneration. They instead do this work because of their dedication and interest in IPE.

As agents, nursing students may demonstrate varying levels of coherence, cognitive participation, and collective action regarding IPE. In this study, various levels of coherence were evident given the variety of student year levels involved in IPE initiatives. Some students had an interest in IPE without really being aware of what it was, while others who had had some IPE experience through simulation laboratories desired more IPE experience. Student-led initiatives required the support and guidance of faculty as well as the agency of institutions. This phenomenon was evident by the cognitive participation of the students who were able to frame how these IPE agents could be involved in their endeavours. Frequently, invitations to attend student-led discussions or planning sessions for clinics were sent to faculty, students, administrators, and community partners. Collective action was apparent across the various stages of the student-led initiatives and the students' involvement in voluntary IPE activities such as simulation and research conferences. Students used the skills and resources appropriate to their level of nursing education to participate in IPE learning activities and worked together to encourage others to take part. Regarding faculty involvement, it appears that faculty who had an interest in IPE were the ones assisting, guiding, and supporting the students in their endeavours.

These faculty members demonstrated a comfort level with IPE and a continued interest in developing their personal knowledge and experiences with IPE.

Coherence, cognitive participation and collective action were also evident through reflexive monitoring, principally in relation to student learning. Reflexive monitoring of the integration of IPE into the program occurred to a limited extent through data gathered from various reports and some piloted IPE activities. Administrators, program directors, and faculty members were the main agents involved in accreditation and institutional assessment reports with respect to the evaluation of IPE.

In accordance with Normalization Process Theory, there were various levels of IPE implementation occurring in the various programs, despite the varied understandings of IPE. Since generative mechanisms are not linear but interrelated, it is not unusual that IPE was occurring within the curricula despite variations in coherence. The types of IPE learning activities were likely influenced by these various interpretations of IPE.

The varied understandings of IPE suggest a need for faculty development regarding IPE. In the literature, faculty knowledge of IPE is identified as a barrier to successful IPE integration (Bilodeau et al., 2010; Cahn, 2014; Graybeal et al., 2010; Ho et al., 2008; Kent et al., 2014; Lapkin et al., 2012; Ruiz et al., 2013; Sommerfeldt et al., 2011; Vanderzalm et al., 2013). In their work, Lawlis, Anson, and Greenfield (2014) found that faculty development programs are instrumental to facilitating IPE. In this study and others found in the literature, faculty indicated their need for a better understanding of IPE through faculty development and support for IPE research. Ho et al. (2008) have found that, when IPE research funding is provided within academia, interest and commitment to IPE activities are heightened. In summary, the varied understandings of IPE have likely contributed to the ways IPE was being implemented and

evaluated in the four programs under study. IPE evaluation across programs is also an area that requires development. This work could involve exploration of evaluation strategies within the IPE literature and selection of an evaluation strategy when planning IPE curricula (Coffey & Anyinam, 2015). There are several frameworks and strategies for the integration and evaluation of IPE in the literature that provide methods to assess, plan, implement, and evaluate IPE curricula (Cranford & Bates, 2015; Pardue, 2015; Sterrett, Hawkins, Hertweck & Schreiber, 2015).

IPE through simulation and student-led initiatives is happening within the programs. Simulation is the strategy that faculty discussed most frequently. The prevalence of IPE through simulation as a learning strategy has been noted in a systematic review of IPE in nursing by Rutherford-Hemming and Lioce (2018). Student-led clinics were also identified at various stages of development across the four nursing programs. Haggarty and Dalcin (2014) and Ng and Hu (2017) emphasized the role of student-run clinics as an emerging trend for IPE in Canada.

The voluntary nature of IPE activities including simulation laboratories and student-led initiatives was discussed by the study participants at some length. Although attempts are being made to integrate IPE within curricula, voluntary activities including regular occurrences and pilot projects are the primary instances of IPE. At the same time, there are some mandatory IPE initiatives integrated into courses through course objectives. All of this is in line with a review of IPE education in Canada which found that many of the IPE activities reflected in the literature were voluntary and occurred principally in clinical practice settings (Grant et al., 2016).

The idea of IPE exposure was prominent in the comments of the participants with some mention of immersion in an IPE clinical experience. There were many instances where participants indicated that the IPE learning activity was more of an exposure and not a full

experience. The University of Toronto's *Framework for the Development of Interprofessional Education Values and Core Competencies* outlines the movement from IPE exposure (introduction), to immersion (development), to competence (entry to practice) (Nelson, Tassone, & Hodges, 2014). Use of this IPE framework ensures that the three core competencies of values and ethics, communication, and collaboration are achieved along a continuum. Using this framework as a reference point, most of the IPE activities discussed in the findings of this study fall within the exposure phase.

The space, time/scheduling, and human resources required for IPE were emphasized as main challenges to its integration. Where such supports and resources were present, the participants commented on how successful the integration of IPE learning activities was. These findings are consistent with those of Reeves et al. (2012), and those from a literature review exploring barriers and enablers of sustaining IPE (Lawlis, Anson & Greenfield, 2014). Dedicated spaces for IP enhance cohesion and the collaborative experience as a whole (Brewer, Flavell, & Jordon, 2017). The need for funding of IPE-related positions to lead and organize IPE activities within the curriculum was mentioned by participants. Rutherford-Hemming and Lioce (2018) have identified lack of funding for resources as a barrier to IPE.

The challenge of accessing students in other health professions programs for one particular program pertains to resources. In this case, the northern context and geographic location influenced the availability of specific types of health professions that could be learning with, from, and about each other. In one study, students from several other professions were brought to Northern Ontario from McMaster University to participate in IPE learning with students from other unspecified universities on placement at three sites in Northwestern Ontario (Salvatori et al., 2007). The idea of accessing rural and remote areas as part of the experience of

IPE integration is not new. Deutschlander, Suter, and Grymonpre (2013) found that IPE education in rural or underserved areas may influence recruitment of health professionals to these areas post graduation. The practice of bringing other health professions students into a specific geographic area might enhance IPE learning for nursing students within the program.

### **Limitations**

A possible limitation to this research pertains to the transferability of results due to the varied contexts of each program. Some of the findings are very specific to Northern Ontario and each program's institutional context. Dependability of the results may have been affected by the review of large amounts of data and interpretation of findings, even though attempts were made by the researcher to decrease potential bias. At the same time, the triangulation of data sources from the four separate programs contributes to the credibility of the findings. Lastly, the faculty who consented to be involved in the focus groups or who agreed were interviewed may have had an interest in IPE and/or have had IPE workload allocation, thus presenting a selection bias.

### **Conclusions and Implications**

The state of IPE in nursing programs in Northern Ontario described in this study has implications for educators, administrators, and institutions. Faculty development must occur to meet the needs of those enacting the integration of IPE. Such faculty development includes a review of IPE competencies, IPE research, and the many frameworks that now exist for nursing programs in relation to the planning, implementation, and evaluation of IPE within curricula. The Centre for the Advancement of Interprofessional Education recently developed *Interprofessional Education Guidelines* for pre-licensure health professions and continuing professional education. These guidelines can assist with the development and assessment of IPE processes (Barr et al., 2017). Student-led initiatives need to be encouraged and supported by faculty and administration.

Additionally, administrators need to support faculty and ensure that resources are in place for IPE including research (Wilhelmsson et al., 2009). Finally, innovative IPE learning approaches and research are required to engage students from other health professions in rural and northern contexts to help broaden the scope of their learning. Additionally, partnerships can be initiated and established within these settings for IPE opportunities. This way, students across a variety of professional programs beyond the geographic boundaries of the northern context can learn from and with each other.

### **Declaration of Interest**

The primary investigator is an Assistant Faculty member in the Laurentian University School of Nursing BScN program. The authors report no conflicts of interest.

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## Chapter 5

### **Interprofessional Education in Four Canadian Undergraduate Nursing Programs: An Examination of the Supporting Data**

#### **Abstract**

Canadian nursing programs are required to provide Interprofessional Education (IPE) since formal inclusion in the undergraduate curricula in 2012. This multiple case study explored how four undergraduate university nursing programs in Northern Ontario integrated IPE into their curricula, and how they dealt with the opportunities and challenges of meeting the new IPE requirements. Data collected and analyzed in the study were: interviews with program directors, focus groups and interviews with faculty members, program documentation and information on websites, and on-site program observations. This paper extends the findings of this study and the themes identified in it. These themes were as follows: 1) varied understandings of IPE, 2) diverse IPE learning activities within curricula, 3) the requirement for support and resources for IPE and research, 4) student participation and leadership in IPE, and 5) limited IPE evaluation (Donato, Lightfoot, MacEwan, & Carter, 2019). In this paper, the themes are explored in further depth through extensive consideration of documentation provided by the involved universities. These resources complement the data derived through interviews and focus groups with faculty and directors. Exploration of these data is a valuable means of illuminating any congruencies and dissonances found in the director and faculty data.

*Keywords:* interprofessional education, nursing programs, interprofessional learning, multiple case study

## **Interprofessional Education in Four Canadian Undergraduate Nursing Programs: An Examination of the Supporting Data**

### **Introduction**

According to the Centre for Advancement of Interprofessional Education, interprofessional education (IPE) “occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care” (2002). The integration of interprofessional education (IPE) into nursing curricula has formally occurred in nursing programs across Canada since the Canadian Association of Schools of Nursing (CASN) included IPE as part of their accreditation standards in 2012 (CASN, 2012). There is evidence throughout the literature that undergraduate university nursing programs across Canada have been demonstrating that they are striving to meet IPE requirements in their programs (Fortugno, Chandra, Espin, & Gucciardi, 2013; Joyal, Katz, Harder, & Dean, 2015; Paul, Olson, Sadowski, Parker, & Alook, 2014; Ruiz, Ezer, & Purden, 2013; Vanderzalm, Hall, McFarlane, Rutherford, & Patterson, 2013). In particular, the literature describes IPE in classroom, laboratory, and clinical practice settings as voluntary and mandatory learning activities within the nursing curricula. Several international studies also report integration of IPE into nursing curricula using similar approaches (Balogun, Rose, Thomas, Owen, & Brashers, 2015; Luebbbers, Dolansky, Vehovec, & Petty, 2017; Nasir, Goldie, Little, Banerjee, & Reeves, 2017; Saylor, Vernoooy, Selekmán, & Cowperthwait, 2016). Despite these findings, there is still a paucity of research on IPE activity in Canadian undergraduate nursing programs in Northern Ontario.

A qualitative multiple case study in which the integration of IPE into the curricula of four nursing programs in Northern Ontario was explored identified the following themes: 1) varied understandings of IPE, 2) diverse IPE learning activities within curricula, 3) the requirement for support and resources for IPE and research, 4) student participation and leadership in IPE, and 5)

limited IPE evaluation (Donato, Lightfoot, MacEwan, & Carter, 2019). This article described overall study results, upon which the study data for this examination of supporting evidence will be based. These themes emerged from analysis of each program-case and during the cross-case comparison stage. Director and faculty data, combined with program documentation, website data, and on-site observations contributed to the identification of the themes. Yin (2014) noted that several sources of data may be used to provide evidence for case study research. The use of multiple sources of data is especially important in multiple case study research since each source of data contributes to the development of a more complete understanding of the cases and cross-case synthesis findings (Baxter & Jack, 2008). The large amount of data collected provides fertile ground for further examination of themes and relationships across the data sources. Based on these ideas, the intent of this paper is to explore the study findings in relation to the program documentation, website data, and on-site observations. Exploration of these data sources will also illuminate any congruencies and dissonances in comparison with the director and faculty data.

## **Methods**

This study utilized a multiple case study design to explore how four undergraduate university nursing programs in Northern Ontario are integrating IPE into their curricula, including the opportunities and challenges experienced by nursing faculty and program directors during this integration. Each undergraduate nursing program was considered to be a case (Baxter & Jack, 2008; Creswell, 2013). Multiple data-collecting strategies were used including interviews, focus groups, review of program documents and websites, and on-site program observations in order to identify the IPE content as well as delivery strategies in each undergraduate nursing program (Yin, 2014).

## **Data Collection**

The research took place at four undergraduate nursing program locations in Northern Ontario universities located in Sudbury, North Bay, and Thunder Bay. Data collection occurred between June 2016 and June 2017. The first section of the “Interprofessional Education Assessment and Planning Instrument for Academic Institutions” was used to create a semi-structured interview and data collection guide (Association for Prevention Teaching and Research, 2009). Each question in the data collection guide included a request for supporting evidence (as shown in Table 1). Data collection consisted of interviews with program directors ( $n=3$ ); focus groups ( $n=10$ ) and interviews ( $n=3$ ) with faculty members; review of available program documentation, and information found on websites; and on-site program observations.

Table 3

*Data Collection Guide/Supporting Evidence*


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To what extent is IPE occurring in courses in your undergraduate program and what are the professions involved? **Documentation:** request program description, course outlines and other relevant material if available.

How is IPE occurring in clinical experiences (hospital, clinics, community) in the program, and what are the professions involved? **Documentation:** request any clinical learning objectives or descriptions.

How is IPE occurring in community projects or service learning in your program, and what are the professions involved? **Documentation:** request learning objectives or course descriptions.

Have any of the IPE experiences/activities been assessed or evaluated and if so, by whom? **Documentation:** request access to evaluation documents if available.

Is IPE occurring as a voluntary extra-curricular activity in the program? If so, please describe the activity and explain who the professions involved are. **Documentation:** request description of the activity if available.

Are there staff and resources dedicated to IPE within the program? If so, can you describe their role? **Documentation:** request role description if available.

Does the university support IPE in its strategic plan and in other ways? **Documentation:** request access to university and program strategic plans or observe on website.

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Curricula-related program documentation, website information, and on-site observations of the four programs are the focus of this examination of supporting data in relation to the overall themes. Program documentation included strategic plans, accreditation reports, a Faculty of Health level interprofessional needs assessment, a Faculty of Health presentation about IPE initiatives, learning evaluation documents, student newsletters, course descriptions, and the terms of reference for an interprofessional committee. Website information include strategic plans at the organizational, faculty, and program level; interprofessional student group websites; program goals; course descriptions; and student handbooks. On-site program observations were made

during the time spent at each institution through guided tours of learning spaces and simulation laboratories.

### **Data Analysis**

A thematic analysis was conducted by the primary investigator using data from interviews, focus groups, documents, websites, and on-site program observations. First, an analysis was completed for each program in order to identify themes using the process described by Braun and Clarke (2012). Data from documents, websites, and on-site program observations were organized into a chart for each program, and each source was labelled for identification. These data sources were then compared with the focus group and interview data. Next, categorical aggregation, as recommended by Creswell (2013), was used to establish themes for each program. The themes were then compiled in a chart with corresponding evidence from all data sources. Finally, a cross-case analysis was conducted, and final themes were generated based on all data from the individual case studies as described by Yin (2014). Data sources were assigned specific identifiers followed by numbers corresponding with each program for identification purposes (e.g., Director-D1, Focus Group Member-FG2, Document-Doc1, Website-W3, and On-site Observation-O2).

### **Ethical Considerations**

This research received ethics approval from Laurentian University, Nipissing University, and Lakehead University. Since the principle investigator is part of the nursing faculty at Laurentian University, the interviews and focus groups at the two Laurentian University undergraduate programs were conducted by a bilingual (English and French) facilitator hired through a consulting company. This step was taken in order to prevent any perceived bias in the

data collection process, to ensure anonymity, and to accommodate program language preferences.

## **Results**

The overall themes were based on program documentation, website data, and on-site observations in conjunction with the director and faculty data. They are reported in a manuscript that is presently being prepared for publication (Donato et al., 2019). The findings discussed in the following section expand on this previous work and focus on the program documentation, website data, and on-site observations. They are presented in relation to the director and faculty data within the five overall themes previously identified.

**Varied understandings of IPE.** As a concept, IPE has been interpreted in a variety of ways, which affects how it is implemented in the programs. The theme of varied understandings of IPE is supported by all sources of data. Both directors and faculty members expressed varying degrees of understanding of the concept of IPE. The supporting data sources including strategic plans, information on websites, and course outlines also demonstrated varied understanding. This idea was apparent in the interchangeable terminology used to describe IPE including the terms, *multidisciplinary*, *interdisciplinary*, and *collaborative learning*.

In one interview, a faculty member made the following statement: “To be honest, I find it confusing, I don’t really know, like...I guess what IPE is...” (FG2M4). Adding to this idea of different understandings, a director indicated that “it is really to have the same definition of interprofessional, because sometimes administration puts students of different disciplines in the same class and it is an interprofessional course” (D3, 4). Without a precise definition and common understanding among faculty and administrators, IPE may be occurring in various ways that do not meet the definition of IPE.

Varied terminology was used to describe IPE in the relevant documentation and most institutional, faculty, and program websites had no language regarding IPE, particularly in terms of definitions or explanations of the term. For example, the strategic plan of one of the universities referred to themselves as "... a leader in inter-professional health education and research" (W3, 4-1) without including a definition of "inter-professional" or elaborating on the meaning of this statement. Another institution used the term "multidisciplinary" or "collaborative learning" in their strategic plan as posted on its website (W1-1). Another nursing program website used the term "interdisciplinary" (W4-1). IPE terminology was used in one institution's program goals: "To work collaboratively with the client and others- interprofessionally and intraprofessionally, to address and respond to emerging health needs" (Doc4-1). Only one faculty-level website had a section outlining IPE in language reflecting the Centre for Advancement of Interprofessional Education (2002) definition: "The Faculty ... is committed to the ongoing advancement of interprofessional education (IPE) and interprofessional collaboration" (IPC) (W1-3). This same website also quoted the Centre for Advancement of Interprofessional Education (CAIPE) definition of IPE (W1-3), which was quoted in the opening sentence of this paper.

Course outlines also used a variety of terms and statements in relation to IPE such as "students will develop awareness of .... The role of the nurse in a multidisciplinary team" (W1-4). At this same university, there was a cross-listed elective course in one program which demonstrated IPE language titled: "Interprofessional Education and Wellness" (W1-4).

These findings as they pertain to diverse understandings of IPE align with the literature. A review of IPE in the Canadian nursing literature has demonstrated inconsistencies in the conceptualization of IPE (Grant et al., 2016). In all the documents examined in the review, IPE

was defined in only one document pertaining to one program. Coffey and Anyinam (2015) emphasized how defining IPE is crucial to understanding exactly what IPE entails. This lack of clarity in defining IPE has likely led to the varied understandings and lack of knowledge of IPE. This, in turn, affects how IPE is envisioned and enacted in the programs by faculty members and speaks to the need for faculty development.

**Diverse IPE learning activities within curricula.** A variety of IPE learning activities was evident in all data sources. IPE was threaded throughout the learning outcomes within courses and through each year of the programs to varying degrees, and included both mandatory and voluntary learning activities. The majority of IPE learning activities involved simulations with other health professions students. The variety of IPE learning activities was demonstrated in accreditation documents, evaluation documents, course outlines, website information, and through observations of simulation laboratory spaces.

IPE has been integrated into some parts of the curricula. One director stated the following: “We’ve tried, I would say, over the past probably 10-12 years to have.... more genuine IPE opportunities. It’s just threaded through our learning outcome that’s really looking at relationships” (D1). A faculty member from another program described the work of a nursing program committee to ensure the integration of IPE into the curriculum: “The common learning outcomes were designed by the curriculum committee” (FG2M1).

In one program, an accreditation report provided evidence of the progress made relative to IPE. According to this report, the nursing program met the following objectives:

- demonstrates how concepts and content of IPE and IPC are threaded throughout the curriculum;
- demonstrates voluntary nursing student activities in partnership with the medical school;

- demonstrates voluntary simulation IPE activities ,
- students in third year are exposed to a variety of professions and students have a chance of working with some of them in clinical settings;
- fourth-year students work collaboratively in their consolidation experience; and
- several new initiatives are occurring with IPE in the program and plans for these in the coming years (Doc4-2).

The voluntary nature of many IPE learning activities was evident in this research. According to one director “one of the challenges we have... is to encourage participation in activities in a less voluntary and a more mandatory way” (D3, 4). While mandatory IPE ensures that all students gain the knowledge required by the program, voluntary IPE experiences typically include only students with an interest in IPE. For example, one institution offers a cross-listed elective IPE learning experience. The course description indicates that “students from different professions come together to work in a collaborative student-driven learning environment to explore the benefits and challenges of interprofessional teamwork to simulate a real world interprofessional environment” (W1-4). Student-led clinics are another example of voluntary activities for students. At one institution, students interested in IPE formed an organization that led to the student-led clinic. This group of students described themselves on their student organizational website as “a group of students from a variety of health disciplines ... who seek to promote interprofessional education and practice” (W1-5).

One of the documents analyzed was a presentation on interprofessional education initiatives which focused on simulation activities in collaboration with the simulation laboratory at a partnering hospital (Doc3, 4-2). These simulation activities included medical, nursing, speech pathology, Indigenous social work, and social work students (Doc3, 4-2). Simulation

involving some IPE also occurred in laboratories in the different programs, and appeared to be the most common venue for IPE. All programs showcased state-of-the-art laboratories (O1, O2, O3-1, O4-1).

The reliance on voluntary IPE learning activities is consistent with the literature which describes the voluntary nature of IPE learning activities in nursing programs (Grant et al., 2016; Nasir et al., 2017; Saylor et al., 2016). The use of simulation for IPE as a popular learning activity in nursing programs is also prevalent in the literature (Hudson, Sanders, & Pepper, 2013; Rutherford-Hemming, & Lioce, 2018; Saxell, Harris, & Elarar, 2009). Further exploration of these voluntary and simulation-based learning activities is required to determine their success in meeting IPE requirements, which may assist faculty in the development of more mandatory IPE learning within programs.

**The requirement for support and resources for IPE and research.** The requirement for support and resources for IPE and research was noted by directors and faculty and was supported by documents, websites, and observations. The main barriers were a lack of human resources for IPE, difficulty in scheduling IPE learning activities, and inadequate learning spaces for IPE given the sizes of the participating student groups. All of the programs in this study indicated the need for additional human resources for IPE since this work generally occurs on top of regular faculty workloads. As such, inconsistent workload allocations for IPE were noted as barriers for all programs. The observed barriers were consistent with findings in the literature on the challenges of integrating IPE into curricula (Cahn, 2014; Ruiz et al., 2013; Vanderzalm et al., 2013). Despite these challenges, administrative support in encouraging IPE integration within curricula was evident in the interview, focus group, and supporting data.

With respect to workload, a director stated how “we don’t have anybody who has course release to be looking at IPE opportunities across the curriculum. You know, I think that that’s a direct result of having a .... Scarcity of resources” (D1). Fewer staff, more part-time faculty, smaller budgets, and increases in students were discussed within the context of resources. A faculty member said there was “no staff associated ...staff or faculty release time... I personally get one hour per week ...for IPE” (FG2M1). Although one program employed a laboratory facilitator who worked mainly on IPE within simulation, there was no evidence in the documents or on the websites that specified a dedicated faculty member for IPE curricula. However, one institution had a specific IPE committee which guided the development and integration of IPE into curricula. The terms of reference for this committee described a standing committee at the faculty level. The mandate of this committee is to act in an advisory capacity to senior leadership at the university through the dean “on matters, policies and planning related to advancing IPE and IPC” (Doc1-2). This committee may also influence administrators to provide increased support and resources for IPE within the program. These terms of reference and accreditation documents in another program revealed some leadership of IPE initiatives involving faculty. In summary, there was no evidence of faculty or staff dedicated to IPE.

Despite the lack of resources identified by faculty and directors, administrative support was evident in strategic plans (W3, 4-1; W1-3). In addition, a needs assessment of IPE conducted at one institution in 2012 describes an evaluation of IPE within the faculty and related programs. This needs assessment occurred because of the new IPE requirements in professional health education that emerged during the same time period. One of the recommendations of this needs assessment report was to “allocate resources to support and develop IPE/IPC initiatives, activities, courses, community partnerships, faculty development programs, assessments,

evaluations and research” (Doc1-3). Another recommendation was “pending the availability of resources, dedicate at least one FTE (individual or shared) 76-100% to IPE/IPC; and determine the organizational structure and staffing required to support IPE/IPC” (Doc1-3). These recommendations are incongruent with what faculty and directors reported almost five years later, as the need for support and resources was identified as an issue.

IPE requires careful scheduling often between two or more programs as well as venues, to ensure that all health professions students are able to participate. As such, scheduling issues were reported with respect to planning IPE activities. One faculty member emphasized that “scheduling challenges have been the biggest barrier” (FG2M1). The previously mentioned needs assessment report recommended that the program “find and allocate common time, structures and processes specific to IPE/IPC (interprofessional care) planning” (Doc1-3). Significantly, the recommendation was made in 2012, and faculty members and directors were still voicing their concerns about scheduling issues almost five years after the report was completed.

Although all sites had state of the art laboratories, the size of each lab was perceived to be inadequate for large numbers of students learning and working in interprofessional teams. According to one director “another big issue is space... we did not have a big enough room” (D3, 4). The needs assessment report recommended that the university “create and develop IPE/IPC spaces i.e., website, simulation areas, resource directory etc.” (Doc 1-3). As part of this study, the labs at each program site were observed and confirmed to be too small to accommodate the numbers of students reported to be participating in IPE activities (O1, O2, O3-1, and O4-1).

Although a lack of human resources, difficulties with scheduling, and a lack of space were cited as issues, the supporting data sources acknowledged these challenges and some made recommendations to address them. Several of these data sources were created with the involvement of administrators beyond the program level, thus suggesting institutional involvement and support for IPE. Although these challenges were addressed in the documents, there was no evidence at the time of the interviews that the recommendations had been acted upon.

**Student participation and leadership in IPE.** Student participation and leadership in IPE occurred mainly through voluntary simulation experiences and student-led clinics. All data sources provided evidence of student participation and leadership, with the student-led clinic being the dominant activity. Students across the programs participated in voluntary simulation events and student-led activities. Faculty reported that some students were interested in IPE when it was paired with simulation learning in the laboratory and students from other health professions. One faculty member stated the following: “Yes we sometimes have activities that aren’t always mandatory, only occasionally, where we organize practice clinics with our students, with the medical school” (FG3M4).

Students also participated in the organization of student-led clinics that would eventually take place in community settings. A director shared that “...the students are currently looking at the possibility of opening a clinic, a student-led clinic downtown... Often it comes from the students because they also see this need” (D3, 4). One of the reviewed documents was a business plan for a student-led clinic which demonstrated the intentions and motivations of a group of students from various professional programs (Doc3, 4-1). An interprofessional group of students from another institution developed a website for their interprofessional student association (W1-

5). This website described student initiatives such as a simulation series in the fall and winter sessions, a speaker series in the fall and winter, a simulation challenge in February, and IPE week in January (W1-5). The literature supports the idea of student-led clinics as appropriate venues for IPE (Ambrose, Baker, Mahal, MicFlikier, & Holmqvist, 2015; Kent, Drysdale, Martin, & Keating, 2014; Ng & Hu, 2017).

**Limited IPE evaluation.** Limited IPE evaluation was the final theme supported by all sources of data. There was limited evidence of evaluation in accreditation reports, IPE assessment reports, and course outlines. Evaluations of IPE were done at the student, faculty, and program levels, but mostly at the student level as part of their learning assessments. These evaluations of IPE activities are sometimes completed by the educators, some entail overall program assessments, and some are formal assessments of student learning. With respect to evaluations completed by faculty after IPE activities have taken place, one faculty member stated the following:

When I did the simulation experience, there was a – an evaluation form, I believe, that we filled out, to talk about the experience. And feedback that was gathered afterwards, in like a focus group type of scenario, they had all the professions who were all the kind of leaders of the teams, or whatever, present. So that was one method of evaluation (FG4M2).

Overall program and faculty level evaluations were documented in accreditation and IPE assessment reports. One accreditation report mentioned an IPE evaluation which demonstrated the “progress made ensuring interprofessional education and interprofessional collaboration in relation to curriculum revisions, with a view to ensuring that components of some IPE be present with different partners” (Doc4-2).

The needs assessment report for one institution was the most complete form of evaluation of IPE at a faculty level. This report included the nursing program and related health professions (Doc1-3) and was created to guide the development of IPE in the faculty and related programs. This report also made recommendations on the evaluation of IPE within their faculty and programs. Some of these recommendations included the following:

Determine the methods to measure student progress in the areas of attitudes, knowledge and skills; develop a sustainable approach to implement and maintain IPE/IPC; answer the question, “What is the best approach?” (i.e., courses, extracurricular events, community-based events); and develop and utilize methods and processes for ongoing curriculum evaluation and monitoring of program outcomes (Doc1-3).

Student evaluation in the performance of IPE learning activities was also evident. A faculty member explained that “in the course evaluation forms there are objectives that can render account on the performance of a student in the interprofessional team whether in a community or hospital setting” (FG3M4). One website demonstrated that student learning was also evaluated through meeting the learning outcomes of courses via assignments (W1-4).

The literature confirms the idea of limited evaluation of IPE programs. Thannhauser et al. (2010) found that evaluation of IPE in health professions programs has been limited to studying the outcomes of IPE focused on the interprofessional team experience or student experience of IPE activities. In the case of this study, there is a need for the nursing programs to review how IPE is evaluated within their curricula and to explore strategies which may assist in developing more comprehensive IPE evaluation.

## Discussion

The findings of this multiple case study were supported by a variety of data sources and presented as five themes: 1) varied understandings of IPE, 2) diverse IPE learning activities within curricula, 3) the requirement for support and resources for IPE and research, 4) student participation and leadership in IPE, and 5) limited IPE evaluation. Program documentation, website information, and on-site observations are congruent with the interview and focus group findings. Some dissonance occurred between recommendations found in the documentation which, at the time of the study, had not been actualized.

Many data sources were used in this study to gain an understanding of how IPE was being implemented within each program and the barriers faced within and across programs. The use of interviews in this study allowed for the in-depth individual perspectives from participants, while the focus groups facilitated the dialogue from various perspectives in a collective manner, bringing all participants' views into play to generate knowledge related to IPE (Gill, Stewart, Treasure, & Chadwick, 2008). The use of supplementary data further established relationships among the data sources and confirmed congruencies in the findings. Stjelja (2013) emphasized that in case study research no one type of data was superior to another and that each one complements the other. The use of documentation, website information, and on-site observations provided valuable insights that enhanced knowledge derived from the interviews and focus groups. This triangulation of data sources from the four separate programs contributes to the credibility of the findings.

One area in which incongruence presented was a needs assessment report involving one of the programs. Several recommendations to facilitate the integration of IPE were made in the report. The faculty members and director from the involved program shared that several of these

recommendations had not yet been implemented. These included providing adequate human resources, appropriate scheduling, and spaces for IPE. The faculty members' account may or may not be accurate, given their limitations of administrative knowledge. It is well known that policies and process play a key role in effecting change in academic institutions, and implementation of recommendations may take more time than in other settings (Clark, 2011). It is possible that not all documents were available at the time of the data collection, which could have limited the data available. These documents may have been at different levels of institutional processes and may have quite likely been confidential.

Assessment, planning, and evaluation of IPE activities require further development within each of the programs studied. Bigbee, Rainwater, and Butani (2016) proposed an interprofessional needs assessment for both faculty and administrators as a first step in the planning of IPE faculty development activities. This approach could assist nursing programs in determining gaps in knowledge for faculty and administrators, and possibly assist them in working together to address the issue of resources for faculty development. Frantz and Rhoda (2017) described three core concerns to implementing IPE: 1) the need for a theoretical framework, 2) the shifting from concept to operationalization through planning student learning and organizing faculty, and 3) the establishment of a critical mass through faculty development. There is also a need for nursing programs to evaluate IPE more consistently within the curricula. Recent literature has demonstrated the emergence of evaluation frameworks to assist programs with the assessment of IPE in curricula (Karuguti, Phillips, & Barr, 2017; Pardue, 2015).

## **Conclusions**

The findings of this multiple case study demonstrate how multiple data sources contributed to the generation of five key themes related to the integration of IPE within the

curricula of four undergraduate nursing programs in Northern Ontario, Canada. The themes relate directly to the activities of integrating IPE within curricula and involve faculty, administrators, and students at different levels and to varying degrees in the assessment, planning, implementation, and evaluation of IPE learning. Although it is evident that some IPE is occurring in the four nursing programs, continued assessment, planning, and more in-depth evaluation are required to address issues of faculty development, human resources, the scheduling of IPE learning, and inadequate space.

### **Declaration of Interest**

The primary investigator is an Assistant Faculty member in the Laurentian University School of Nursing BScN program. The authors report no conflicts of interest.

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## **Chapter 6**

### **Conclusion**

#### **Summary and Synthesis of Research and Articles**

This multiple case study explored how four undergraduate university nursing programs in Northern Ontario integrated IPE in their curricula and the associated opportunities and challenges. Data collection was comprised of individual interviews with program directors, focus groups with faculty members, review of available program documentation and websites, and on-site observations. Thematic analysis was carried out for each case, and cross-case analysis identified the following cross-case synthesis themes: 1) varied understandings of IPE, 2) diverse IPE learning activities within curricula, 3) the requirement for support and resources for IPE and research, 4) student participation and leadership in IPE, and 5) limited IPE evaluation. The challenge of access to students in other health professions programs for one particular program was distinct in the discussion of resources required for IPE. The northern context and geographic location influenced the availability of specific types of health professions that could be learning with, from and about each other.

This thesis was comprised of four main articles, two based on literature on the involvement of IPE in interprofessional care, and two based on the results of this study. The first article (Chapter 2), a briefing note discussing the importance of interprofessional collaboration in health care in rural and northern settings, concluded that interprofessional collaboration among health professionals plays an important role in meeting health care needs in rural and northern settings. However, attempts to ensure that interprofessional care occurs in these settings have resulted in varied health care delivery across communities. Some of this is due to the availability and variety of health professionals within these communities, as well as other barriers to

interprofessional care identified in the literature, such as: lack of faculty knowledge of IPE, lack of IPE resources, the time intensive nature of IPE activities, and difficulty with scheduling (Basran et al., 2012; Cahn, 2014; Lapkin et al., 2012; Takahashi et al., 2010; Vanderzalm et al., 2013). Based on these results, a strategy to address the successful implementation of interprofessional care is to include interprofessional education as part of undergraduate professional education through collaboration with other professions, as well as provide ongoing resources and supports for models of interprofessional care in rural and northern settings.

The second article (Chapter 3) was a review of Canadian literature about what was occurring with IPE integration into nursing curricula. Both faculty and health professionals involved in student learning did not feel comfortable or knowledgeable enough about IPE (Sommerfeldt et al., 2011). These limitations could directly affect how students perceive and learn about interprofessional interactions and practices in the clinical setting. The literature identified two strategies for facilitating interprofessional learning: modelling of interprofessional behaviour and care by faculty while working as a team member demonstrating successful communication and relationships, and increased faculty development with respect to IPE (Basran et al., 2012, Bilodeau et al., 2010, Graybeal et al., 2010, Ho et al., 2008, Ruiz et al., 2013, Sommerfeldt et al., 2011, Vanderzalm et al., 2013). These two findings emphasize the significance of continuing interprofessional education as professional development for health care professions in practice and with educators in various settings. Continuing interprofessional education occurs when members of two or more health and/or social care professions learn with, from, and about each other in practice settings after graduation/post licensure to improve collaboration and the quality of care (Reeves, 2009). Continuing IPE must occur in practice settings with practicing health professionals and content should include material directly relevant

to IPE. Such learning opportunities assist both educators and health professionals in becoming more knowledgeable about other professions and contribute to safe team-based practice and care, which in turn, positively influence student IPE learning

The third article (Chapter 4) presents the results of this research study as a cross-case synthesis. The cross-case synthesis described above resulted in five main themes: 1) varied understandings of IPE, 2) diverse IPE learning activities within curricula, 3) the requirement for support and resources for IPE and research, 4) student participation and leadership in IPE, and 5) limited IPE evaluation. Participants from one program identified a lack of accessibility to other health professionals as a resource issue for IPE. Faculty development must occur to meet the needs of those enacting the integration of IPE. Such faculty development includes a review of IPE competencies, IPE research, and the many frameworks that now exist for nursing programs in relation to the planning, implementation, and evaluation of IPE within curricula. Student-led initiatives need to be encouraged and supported by faculty and administration. Additionally, administrators need to support faculty by providing the required resources for IPE and IPE research (Wilhelmsson et al., 2009). Finally, innovative IPE learning and research approaches such as utilizing online and virtual communication technologies could dissolve geographic barriers and facilitate the engagement of students from other health professions in rural and northern contexts.

The fourth article (Chapter 5) discusses the results of this research with an emphasis on the supporting data, and how these data sources demonstrate congruencies and dissonances with the interview and focus group data. The findings of this multiple case study: 1) varied understandings of IPE, 2) diverse IPE learning activities within curricula, 3) the requirement for support and resources for IPE and research, 4) student participation and leadership in IPE, and 5)

limited IPE evaluation were supported by a variety of data sources. Documentation, website information, and on-site observations have been demonstrated to be congruent with the interview and focus group findings. Some dissonance occurred pertaining to specific documentation recommendations on implementing IPE (e.g., the requirement of putting resources into place for IPE) and what faculty reported four years after the report was completed (e.g., still a general lack of resources to support IPE). Educators, administrators, and students are involved at different levels and to varying degrees in the assessment, planning, implementation, and evaluation of IPE learning. Although it is evident that some IPE is occurring in undergraduate nursing programs at various levels, continued assessment, planning, and more in-depth evaluation are required to address faculty development, human resources issues, the challenges of scheduling IPE learning, and inadequate space.

### **Discussion of Overall Study Results**

The findings of this study provide insight into how four undergraduate nursing programs in Northern Ontario have integrated IPE into their curricula. Importantly, these findings are grounded in the perspectives of faculty members and program directors. Review of websites, documents, and observations of program settings add to this picture of what has been occurring across the programs. The opportunities and challenges experienced by faculty and program directors in integrating IPE within their curricula are made apparent by application of the generative mechanisms of Normalization Process Theory.

Normalization Process Theory proposes that practices become embedded as the result of individual and collective action such as the participants' varied understandings of IPE. Cognitive participation and collective action by agents occur despite the variations in coherence or understanding of IPE. As agents, the faculty and directors in this study provided evidence of

working and partnering with other health professionals and students to implement IPE learning activities into various formats and to diverse skill levels.

The generative mechanisms, namely, coherence, cognitive participation, and collective action, were demonstrated in the participants' articulation of the supports and resources needed for IPE. These IPE agents were also able to make sense of what it entails to support IPE. This new level of coherence involves the cognitive participation of the agents and ensures that other agents are made aware of how they can become involved in providing resources and supporting IPE efforts. The collective action of implementing IPE within the curricula is occurring to some extent with the existing resources. While the agents recognize the limitations and barriers to their work, they do what they can to ensure that resources will be provided to make their efforts attainable. The need for human resources to lead IPE activities within nursing programs was consistently raised. Some agents have taken on leadership roles in their programs and are using available resources to provide IPE experiences for students. These agents may not be provided much or anything by way of remuneration. They instead do this work because of their dedication and interest in IPE within the context of the CASN requirement for IPE in undergraduate nursing programs.

As agents, nursing students may demonstrate varying levels of coherence, cognitive participation, and collective action regarding IPE. In this study, various levels of coherence were evident given the variety of student year levels involved in IPE initiatives. Some students had an interest in IPE without really being aware of what it was, while others who had some IPE experience through simulation laboratories desired more IPE experience. Student-led initiatives required the support and guidance of faculty as well as the agency or institutions. This phenomenon was evident by the cognitive participation of the students who were able to frame

how these IPE agents could be involved in their endeavours. Frequently, invitations to attend student-led discussions or planning sessions for clinics were sent to faculty, students, administrators, and community partners. Collective action was apparent across the various stages of the student-led initiatives and the students' involvement in voluntary IPE activities such as simulation and research conferences. Students used the skills and resources appropriate to their level of nursing education to participate in IPE learning activities and worked together to encourage others to take part. Regarding faculty involvement, it appears that faculty who had an interest in IPE were the ones assisting, guiding, and supporting the students in their endeavours. These faculty members demonstrated a comfort level with IPE and a continued interest in developing their personal knowledge and experiences with IPE.

Coherence, cognitive participation and collective action were also evident through reflexive monitoring, principally in relation to student learning. Reflexive monitoring of the integration of IPE into the program occurred to a limited extent through data gathered from various reports and some piloted IPE activities. Administrators, program directors, and faculty members were the main agents involved in accreditation and institutional assessment reports with respect to the evaluation of IPE.

In accordance with Normalization Process Theory, there were various levels of IPE implementation occurring in the nursing programs, despite the varied understandings of IPE. Since generative mechanisms are not linear but interrelated, it is not unusual that IPE was occurring within the curricula despite variations in coherence. The types of IPE learning activities were likely influenced by these various interpretations of IPE.

It can be concluded that the generative mechanisms of Normalization Process Theory which are coherence, cognitive participation, collective action and reflexive monitoring,

influence the integration of IPE into the curricula by either promoting or inhibiting it. Although these mechanisms have been illustrated throughout the findings as operative within and across nursing program curricula, it is difficult to say according to the theory as to whether integration has actually occurred. This is quite likely due to the level of support and resources including human, fiscal, space, and time that are required for IPE activities and research. Availability of these types of resources often result from the underlying organizational and political barriers for IPE funding, such as competition for positions and overall program resources. May et al. (2009) indicated that integration refers to the processes that sustain a new practice, which is not fully apparent within the findings of this research. More appropriately, there is implementation of IPE occurring, which entails putting a new practice into place. There is also some embedding of IPE- which includes the processes that occur to incorporate a new practice (May et al., 2009). In relation to the *Interprofessional Education Process and Outcomes* framework (D'Amour & Oandasan, 2005), the findings demonstrate how the institutional factors (leadership and resources, and administrative processes), and teaching factors (learning context, and faculty development) interact to influence the uptake of IPE. Simplistically, each of these factors acted as catalysts to successful IPE, whereas the lack of support in these areas created barriers.

The varied understandings of IPE found within the research study indicates that faculty members may not be equipped with adequate knowledge of IPE to provide appropriate learning experiences for students. The literature has demonstrated that when continuing IPE occurs among health professions faculty, positive changes result with respect to the knowledge of, attitudes toward, and overall valuing of IPE. Anderson, Cox, and Thorpe (2009) found that a Master's level two-day course preparing nursing and other health professions educators to develop and facilitate IPE student learning resulted in overall increased faculty knowledge and

valuing of IPE. A longitudinal comparative study by Moyce, Bigbee, and Keenan (2017) which included 22 physicians, nurses, scientists, and physician assistants who completed a nine-month faculty development program also found that there were positive changes in participants' attitudes toward interprofessional teamwork and education. In addition, Lawlis, Anson & Greenfield (2014) demonstrated that faculty development programs specific to IPE enhance IPE integration, while Ho et al. (2008) found that IPE research funding increased interest and commitment to IPE activities. Strategies to inform IPE activities in educational practice based on research could play an important role in faculty development and subsequently, the implementation of IPE in nursing programs.

IPE through simulation and student-led initiatives is happening within the nursing programs mainly in laboratory settings. Simulation is the strategy that faculty discussed most frequently. The prevalence of IPE through simulation as a learning strategy has been noted in a systematic review of IPE in nursing by Rutherford-Hemming and Lioce (2018). Student-led clinics were also identified at various stages of development across the four nursing programs. Haggarty and Dalcin (2014) and Ng and Hu (2017) emphasized the role of student-run clinics as an emerging trend for IPE in Canada. The benefits of student-run clinics include increased clinical knowledge, improved communication, knowledge of the roles of other disciplines and how to work with them, increased knowledge about the community, and valuing the experience of working with actual patients (Ambrose et al., 2015; Holmqvist et al., 2012).

The voluntary nature of IPE activities including simulation laboratories and student-led initiatives was discussed by the study participants at some length. Although attempts are being made to integrate IPE within curricula, regularly occurring voluntary activities and pilot projects are the primary instances of IPE. At the same time, there are some mandatory IPE initiatives

integrated into courses, as some course objectives indicate that IPE is occurring in classes, laboratory, and clinical placements. All of this is consistent with a review of IPE education in Canada which found that many of the IPE activities reflected in the literature were voluntary and occurred principally in clinical practice settings (Grant et al., 2016).

The idea of IPE exposure was prominent in the comments of the participants with some mention of immersion in an IPE clinical experience. There were many instances where participants indicated that the IPE learning activity was more of an exposure and not a full experience. The University of Toronto's *Framework for the Development of Interprofessional Education Values and Core Competencies* outlines the movement from IPE exposure (introduction), to immersion (development), to competence (entry to practice) (Nelson, Tassone, & Hodges, 2014). Use of this IPE framework ensures that the three core competencies of values and ethics, communication, and collaboration are achieved along a continuum. Using this framework as a reference point, most of the IPE activities discussed in the findings of this study fall within the exposure phase.

The lack of adequate learning spaces, time required and scheduling skill to facilitate the inclusion of a variety of health professions in IPE, and lack of human resources such as a dedicated faculty for IPE were emphasized as main challenges to its integration. Where such supports and resources were present, the participants commented on how successful the integration of IPE learning activities was. These findings are consistent with those of Reeves et al. (2012) and those from a literature review exploring barriers and enablers of sustaining IPE (Lawlis, Anson & Greenfield, 2014). Dedicated spaces for IP enhance cohesion and the collaborative experience as a whole (Brewer, Flavell, & Jordon, 2017). The need for funding of IPE-related positions to lead and organize IPE activities within the curriculum was mentioned by

participants. Rutherford-Hemming and Lioce (2018) have identified lack of funding for resources as a barrier to IPE.

The challenge of accessing students in other health professions programs for one particular program pertains to resources. In this case, the northern context and geographic location influenced the availability of specific types of health professions that could be learning with, from, and about each other. In one study, students from several other professions travelled to Northern Ontario from McMaster University to participate in IPE learning with students from other unspecified universities on placement at three sites in Northwestern Ontario (Salvatori et al., 2007). The idea of accessing rural and remote areas as part of the experience of IPE integration is not new. Deutschlander, Suter, and Grymonpre (2013) found that IPE education in rural or underserved areas may influence recruitment of health professionals to these areas post graduation. The practice of bringing other health professions students into a specific geographic area might enhance IPE learning for nursing students within the program.

IPE opportunities exist within northern and rural contexts in nursing programs but require further development and innovation to better incorporate students from across professional programs. To aid in this development, undergraduate nursing programs must prepare nursing students by integrating rural nursing content as well as IPE. Bushy and Winters (2013) emphasized that nursing educators and researchers must present and discuss rural nursing with an interprofessional practice perspective. With respect to IPE innovation, Craig, Phillips, and Hall (2016) described an interprofessional learning model where student teams were placed in six rural areas in Australia, and partnered with a community organization to work on relevant community projects. This was undertaken because of the rural health professions workforce shortage, which limited interprofessional learning experiences for students in rural settings

(Craig, Phillips, & Hall, 2016). The use of online technology has been accepted as beneficial by both faculty and students to mitigate IPE learning in areas where geography poses limitations to the number and variety of health professions students available (Bennett et al., 2011; McKenna et al., 2014). Therefore, another way to facilitate IPE student learning in rural and northern areas is to increase the number of health professions students involved through the use of online learning technology. This would allow students to learn together despite the geographic distances between them. This may also present new opportunities for IPE in northern, rural, and remote settings which could involve other health professionals in these settings from programs beyond the geographical area through the use of educational technology.

A variety of data sources were used in this study to gain a better understanding of how IPE was being implemented within each program and the barriers faced within and across programs. The use of interviews in this study allowed for the in-depth individual perspectives from participants, while the focus groups facilitated the dialogue from various perspectives in a collective manner, bringing all participants' views into play to generate knowledge related to IPE (Gill, Stewart, Treasure, & Chadwick, 2008). The use of supplementary data further established the relationships among all of the data sources and confirmed the congruencies in the findings. Stjelja (2013) emphasized that in case study research no one type of data is superior to another and that each one is complementary when multiple sources of data are used. The use of documentation, website information, and on-site observations provided valuable information that enhanced knowledge gained from the interviews and focus groups. Hence, the triangulation of data sources from the four separate programs contributes to the credibility of the findings.

One area where there appeared to be incongruence pertained to the IPE needs assessment report involving one of the programs, which provided several recommendations to facilitate the

integration of IPE. The faculty members and director from the related program provided information indicating that several of these recommendations had not been achieved, such as ensuring adequate human resources, appropriate scheduling, and spaces for IPE. The faculty members' account may or may not be accurate, as there might have been information that was not known to them at the time with respect to the planning and implementation of some of these recommendations. It is well known that policies and process play a key role in effecting change in academic institutions, and implementation of recommendations may take more time than in other settings (Clark, 2011). It was possible that not all documents were available at the time the data collection took place, which could have limited the data available. These documents may have been at different levels of institutional processes and may have quite likely been confidential.

### **Study Strengths and Limitations**

As stated previously, the advantage of a multiple case study design is that it enables the researcher to analyze various sources of data within and across settings making the results more reliable (Baxter & Jack, 2008). Individual interviews with program directors allowed for the perspectives of those directly involved in managing the nursing programs as well as for the perspectives of the faculty involved in the program delivery. The use of faculty focus groups enhanced the dataset by providing a social context which facilitated descriptions beyond individual accounts and experiences of IPE (Brinkmann & Kvale, 2015). Supplemental data sources and on-site observations also enhanced the data collected in interviews and focus groups. The integration of these data sources assisted to verify the IPE activities that were actually occurring in the nursing programs. I also hired a bilingual facilitator to conduct the interviews at Laurentian University to prevent any perceived bias in the data collection process. As the

principal researcher and a faculty member of the Laurentian University School of Nursing, in addition to requiring someone who could work in French, I saw the bilingual facilitator as a way of bringing some objectivity and distance to the data collection, which could have been affected by my insider identity with the School. The use of a bilingual facilitator ensured anonymity and also accommodated program language preferences, as there is a French-language and an English-language nursing program at this institution. Faculty and director reaction and participation may have been different by having this external facilitator in comparison to me as a facilitator.

The challenges and limitations of this study pertain to various aspects of the data collection and analysis processes. The request for faculty participants for focus groups may have resulted in selection bias and attracted those who were already interested and invested in IPE, which may have resulted in ascertainment bias. IPE champions exist across programs despite lack of resources and there was a sense that IPE champions were those that participated. This may have skewed the study results by not having a representative sample involved. However, those who volunteered for the focus group may have enhanced the study, as they were the ones able to provide the information being requested more readily. The numbers of faculty who participated in focus groups could have been more representative of the years of the programs. However, it was noted that all years of each program were represented by faculty who taught courses in several years of the corresponding program. Gill, Stewart, Treasure, and Chadwick (2008) indicated that the optimum size for a focus group is six to eight participants, but that focus groups can work successfully with a minimum of three participants. Despite the small sizes of the focus groups ( $n=10$ ) and interviews ( $n=3$ ) with faculty members in this study, rich discussion occurred which provided insight into the faculty members' understanding of IPE and how it was being integrated into the curricula.

Although data in the form of documentation was accessed for review, not all IPE activities may have been formally documented, and some documents were not provided or were not readily available. In addition, the semantics or words used to describe IPE varied within and across programs and institutions, sometimes posing challenges in identifying and determining experiences and understanding of IPE. Some faculty referred to interdisciplinary learning while they were actually speaking about interprofessional learning and vice-versa. This could have been due to the type and availability of health and other related professions involved in some of the programs. In a review of IPE in Canadian nursing literature Grant et al. (2016) also found there were inconsistencies in the conceptualisation of IPE and a variety of terms used interchangeably to describe IPE. The translation of interview transcripts may have also affected the accuracy of interviews as the nature of wording or ideas may have had different meanings in the language that the interview took place.

Some of the findings were very specific to Northern Ontario which was the primary focus of the study, and other findings were related to each program's institutional context. A limitation of this research may be perceived as the transferability of results due to the varying contexts of each program. Dependability of the results may have been affected by the review of large amounts of data and interpretation of findings, even though attempts were made by the researcher to decrease potential bias including hiring a bilingual facilitator to do the interviews and focus groups in two of the cases. In the cases where I completed the interviews and focus groups, participants may have altered their responses in the direction they perceived was desired by myself as principal investigator, possibly causing an obsequiousness bias. In these cases, open-ended probing questions were used to decrease this possible effect. The triangulation of data sources across the four programs contributed to the credibility of the findings. It must also

be mentioned that the element of reciprocity may have resulted in a social desirability bias, whereby the provision of a report to programs for their own information and use could have influenced the faculty members and administrators to participate. Also, it would have been beneficial to have observed actual IPE activities as they were carried out at each of the program sites. However, due to the difficulty in scheduling these as on-site observations and due to my likewise being an educator teaching within a nursing program, this was not possible. Finally, although the process of reflexivity was undertaken by the researcher, the involvement and interest of the researcher in IPE activities may have further influenced the interpretation of the data.

### **Implications and Suggestions for Future Study**

IPE has been occurring as part of curriculum in pre-licensure nursing undergraduate programs across Canada and globally for several years. The recent impetus for formally including IPE curriculum as part of health professionals' education is a positive step forward in enhancing collaboration within health teams, which in turn may improve patient outcomes. Fook (2003) argues that the acceptance of one profession's interpretation of an idea enables and gives power to that group to "control how the idea is enacted" (p. 37). IPE is occurring in a variety of ways in the curricula of the nursing programs studied, and is being enacted by students, faculty, and administrators.

The state of IPE in Northern Ontario as described has implications for educators, administrators, and institutions in this part of Ontario and possibly across Canada. Faculty development must occur to meet the needs of those enacting the integration of IPE. This includes a review of the competencies, the IPE research, and the exploration of the many frameworks that now exist for nursing programs to guide the planning, implementation, and evaluation of IPE in

the curricula. The Centre for the Advancement of Interprofessional Education recently developed *Interprofessional Education Guidelines* for pre-licensure health professions and for continuing professional education which can further assist in these processes (Barr, et al., 2017). Bigbee, Rainwater, and Butani (2016) proposed an interprofessional needs assessment for both faculty and administrators as a first step toward planning IPE faculty development activities. This approach could assist nursing programs to determine the gaps in knowledge for faculty and administrators, and possibly have them work together to plan and address any required resources for faculty development. Speakman and Arenson (2015) argued that IPE needs to be integrated as a natural part of health professions education to fully prepare health professionals for practice. Their study also demonstrated that although there is an effort toward integration of IPE into the curricula, it is a more complex process that involves addressing the challenges of resources, knowledge, and context (Speakman & Arenson, 2015).

Frantz and Rhoda (2017) emphasize three core concerns to implementing IPE: 1) the need for a theoretical framework, 2) the shifting from concept to operationalization through planning student learning and organizing faculty, and 3) the establishment of a critical mass through faculty development. The use of curricular frameworks has been demonstrated to assist in the planning and evaluation of IPE within health professions programs (Cranford & Bates, 2015; Karuguti, Phillips, & Barr, 2017; King et al., 2017; Pardue, 2015; Sterrett, Hawkins, Hertweck & Schreiber, 2015). However, frameworks must not be used superficially, meaning that they must take into account the complexities of the roles of different professions as fluid and evolving. This requires educators to ensure IPE is incorporated into learning activities beyond simple course objectives by involving more advanced scenarios that demonstrate this complexity (Lingard, 2016).

Student involvement needs to be encouraged and supported by faculty and administration in the development of student-led initiatives in IPE learning through the provision of resources (e.g., providing adequate learning spaces; reducing scheduling conflicts) and by ensuring students receive some credit or clinical practice hours toward their course work. Administrators need to support faculty and work together to ensure resources are in place for IPE (Breitbach et al., 2013), recognizing that faculty are integral to successful IPE integration (Wilhelmsson et al., 2009). Additionally, innovative IPE learning approaches and research involving technology are required to engage students from other health professions together in rural and northern contexts. Simultaneously, partnerships can be initiated and established within rural and northern settings for IPE opportunities that include students across a variety of professional programs beyond geographic boundaries.

Future and longitudinal research with respect to the research findings is required to advance IPE in the northern context. Firstly, a multiple case study of the remaining nursing programs that exist at the colleges in collaboration with Northern Ontario universities should be completed to determine whether there are any similarities across the themes found in this study. These nursing programs are ones in which students apply to the college to register for the undergraduate program. Secondly, individual case studies or other types of qualitative exploration of the findings with respect to research and IPE opportunities within the northern context need to be performed. This was an area that required further probing and discussion and one that the program directors and faculty were eager to continue to speak about in more detail. This could be facilitated by observing a faculty and student cohort participating in an IPE activity over a longer period of time. Thirdly, it would be interesting to perform individual case studies of the student-led initiatives in these programs. This work would provide a better

understanding of the students' perspectives regarding the challenges and success and support required for their initiatives. A qualitative follow-up study with the participating nursing programs would also be beneficial to determine any changes or new developments with IPE integration. Finally, a comparative study of Northern Ontario nursing programs and other Ontario nursing programs with respect to IPE implementation could highlight similarities, differences and potential best practices with respect to IPE.

In addition, although there are several government and professional documents that indicate IPE improves patient outcomes, which has been the underlying impetus for the increase in IPE activities occurring over the last several years, there is actually limited research on the effectiveness of IPE (Reeves et al., 2010; Reeves et al., 2012; Rutherford-Hemming & Lioce, 2018; Zwarenstein, Goldman, & Reeves, 2009). Bennett et al. (2011), in a study including faculty from nursing, speech pathology, medical education, rural health, and psychiatry, found that faculty commitment to the integration of IPE within curricula may be limited due to the lack of 'hard evidence' with respect to IPE improving patient outcomes. Therefore, further research must also be done to establish the outcomes of IPE in professional programs with respect to student success post graduation in providing collaborative patient care.

### **Knowledge Translation**

Strategies to inform IPE activities in educational practice based on research could play an important role in faculty development and subsequently, uptake of IPE in nursing programs. Thus, knowledge translation and exchange (KTE) may facilitate faculty development with respect to IPE within the northern context. *Knowledge translation* as defined by Canadian Institutes of Health Research (2017) is "a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge to improve the health of

Canadians, provide more effective health services and products, and strengthen the health care system” (Knowledge translation, para. 1). *Knowledge exchange* is an element of knowledge translation and is defined by the Canadian Foundation for Healthcare Improvement (2018) as follows:

Collaborative problem-solving between researchers and decision-makers that happens through linkage and exchange. Effective knowledge exchange involves interaction between decision-makers and researchers and results in mutual learning through the process of planning, producing, disseminating, and applying existing or new research in decision-making (Glossary of knowledge exchange terms, para. 1).

Plans to disseminate this research study to each program and stakeholders such as nurses and nurse managers in both the acute care and community practice settings of Northern Ontario are underway. The analyzed results of each individual case will be provided to the programs in reciprocity for their participation in the form of individual program reports as well as a one-page summary for all participants. The final report and cross-case synthesis will be sent to each program director. Final study results may be used as part of accreditation or other reports, enabling each undergraduate nursing program to evaluate IPE within their curriculum and to potentially refine what is currently being done. As well, this may assist the programs to pursue IPE opportunities identified in each program report. In addition, the results may be used to provide evidence for resources required to ensure that IPE is occurring in the curricula and that there is continued administrator support. National and international conferences on interprofessional care and education and qualitative research are venues being explored for the sharing of this research.

Finally, the professional development of faculty members especially in the northern context may be increased by sharing the findings of this study. KTE strategies are significant to informing interprofessional education in Northern Ontario. However, faculty from these nursing programs must become more knowledgeable and involved in order to develop the skills required for IPE and its integration into the curricula. Some faculty across sites are champions of interprofessional education, and literature suggests that barriers to a research agenda and effective KTE may be overcome by having leaders as champions, adequate infrastructure and resources, and innovative faculty development strategies (Legare, et al., 2011). Faculty champions are those who demonstrate a comfort level and interest with IPE and are often assisting, guiding, and supporting other faculty and students in their endeavours. Ideally, these champions will assist in “spreading the word” on IPE and that the findings of this research will serve to facilitate such discussions.

### **Conclusions**

The findings of this multiple case study provide insight into how four nursing programs are integrating IPE into the curriculum, exploring the perspectives of both faculty members and program directors. The review of websites, documents, and observations of program settings added to the overall picture of what was occurring across programs. The opportunities and challenges experienced by faculty and program directors in integrating IPE in their curricula were identified and examined through application of the generative mechanisms of Normalization Process Theory.

The state of IPE in nursing programs in Northern Ontario described in this study has implications for educators, administrators, and institutions. Faculty development must occur to meet the needs of those enacting the integration of IPE. Such faculty development includes a

review of IPE competencies, IPE research, and the many frameworks that now exist for nursing programs in relation to the planning, implementation, and evaluation of IPE within curricula. The Centre for the Advancement of Interprofessional Education recently developed *Interprofessional Education Guidelines* for pre-licensure health professions and continuing professional education (Barr et al., 2017). These guidelines can assist with the development and assessment of IPE processes. Student-led initiatives need to be encouraged and supported by faculty and administration. Additionally, administrators need to support faculty and ensure that resources are in place for IPE activities including research. Finally, innovative IPE learning approaches, including the use of technology to facilitate collaboration and further research, are required to engage students from other health professions in rural and northern contexts in order to broaden the scope of their learning. Additionally, partnerships can be initiated and established within these settings for IPE opportunities. This way, students across a variety of professional programs beyond the geographic boundaries of the northern context can learn from and with each other.

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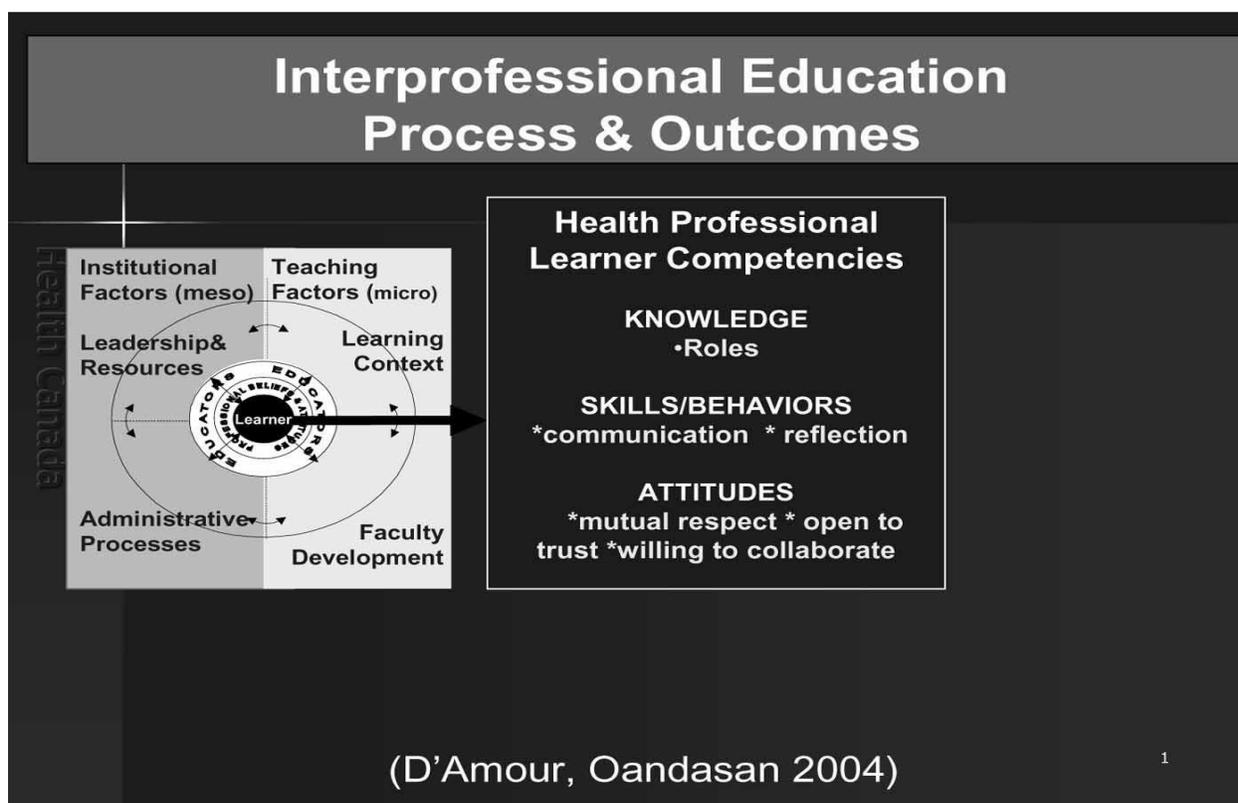
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*Appendix A*

**Conceptual Framework**



*Appendix B***Interprofessional Education Assessment and Planning Instrument for  
Academic Institutions**

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**Interprofessional Education with an Emphasis on Prevention**

ASSOCIATION FOR PREVENTION TEACHING AND RESEARCH

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this instrument are those of the author(s) and do not necessarily represent the views of the

Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services or the Association for Prevention Teaching and Research.

**APTR gratefully acknowledges the efforts of project consultants Annette G. Greer, PhD, MSN, RN and Maria C. Clay, PhD and the APTR members who volunteered their time to create this instrument.**

### **Background**

This instrument, containing two parts, was designed, tested, and is now being made available to any academic institution wishing to evaluate interprofessional education with an emphasis on prevention. The first part measures interprofessional education. The second part measures prevention education. The combination of both sections should provide an institutional assessment of Interprofessional Education with an emphasis on prevention.

This instrument was designed to do the following: 1) assist institutions in gauging where they are in development of Interprofessional Prevention Education and 2) assist institutions wishing to further advance Interprofessional Education with an emphasis on prevention.

### **The Self-Assessment**

The self-assessment instrument is organized into five domains that are derived from the interprofessional prevention education literature. Each domain is associated with specific items and response options. A completed instrument will provide a profile of an

institution's status with the implementation of interprofessional education with an emphasis on prevention.

The five domains are:

- I. Educational Venues
- II. Educational Evaluation
- III. Programmatic Participation
- IV. Institutional Support
- V. Faculty Incentive

### **Definitions**

The following terms used in this self-assessment are particularly important for consistency in interpretation:

#### **Interprofessional Education (IPE):**

Members or students of two or more professions associated with health or social care, engaged in learning with, from, and about each other. It is an initiative to secure interprofessional learning and promote gains through interprofessional collaboration in professional practice (CAPIE, 1997).

#### **Multi-professional Education (MPE):**

Members or students of two or more professions associated with health or social care, learning alongside one another; parallel learning, rather than interactive learning.

#### **Uni-professional Education:**

Members or students of a single profession learning together interactively or in parallel. Freeth et al. (2005).

#### **Course:**

An educational experience for approved academic credit.

**Shared course:**

A cross-listed or co-listed course attended by multiple disciplines.

**Shared placement:**

Multiple disciplines co-located at a clinical or community placement site which may or may not include integrated learning opportunities.

**Educational venue:**

A workshop, a module, symposium, an orientation, or program.

**Educational materials:**

Printed materials, electronic materials (CD, DVD, Podcast).

**Primary prevention:**

An approach used to the origin of disease or health alteration to decrease the numbers of new cases. [Adapted from: Commission on Chronic Illness (1957)]

**Secondary prevention:**

An approach used after the disease or health alteration has been recognized, (before it causes suffering and disability) which seeks to lower the rate of established cases.

[Adapted from: Commission on Chronic Illness (1957)]

**Tertiary prevention:**

An approach used after suffering or disability has been experienced from a diseased state or health alteration, in order to prevent further deterioration. [Adapted from:

Commission on Chronic Illness (1957)]

**Clinical Rotation:**

An experiential learning activity located in clinical settings such as hospitals, clinics,

community agencies, or via home visits.

**Parallel Learning:**

Similar to parallel practice in which students from different disciplines contribute to patient care but with minimal communication among them; parallel learning exists when there are similar educational activities but minimal cross-disciplinary student contacts.

**Instructions for Scoring Instrument**

This self-assessment instrument is designed to be completed by a team that reflects diverse health science institutional constituencies or by a unit within that constituency. The focus of the assessment and planning can occur at the unit level or can occur at the institutional level. Regardless, the process would be the same. Each team member would independently score the instrument, and then share results with others on the team. As with focus, the instrument can be used for assessment and/or planning.

**To Be Used For Assessment**

Read each item carefully by looking across each row associated with the item. Mark the level in the column which best describes the status of interprofessional or prevention activities at the institution. An answer should be provided for all items; if there is no answer, mark "Unable to Assess". Please do not leave any items blank. Please note, an institution does not have to have a similar rating for each item. In fact, it is anticipated that an institution will have varying levels. Nevertheless, scoring each item gives a visual representation of where an institution is on the scale and assists leaders in

determining priority areas. It is recommended that the self-assessors designate a timeframe of an academic year, preferably the year prior to the assessment.

### To Use as A Planning Document

Repeat the process of reading across each row. Mark the level which best identifies the level that the institution wishes to achieve. Specific responses can be based on institutional strategic plans, institutional goals, accreditation requirements, or ideological educational philosophies. Again, it is not necessary that all items have similar ratings, as the institution may not desire advancement in all categories; nor does advancement have to occur simultaneously across every item to be successful. Instead, institutions may not opt to concentrate development in selected areas.

Items addressing interprofessional education (IPE) will be presented first followed by items addressing prevention.

ITEM	LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<b>IPE Course</b>	No course with interprofessional collaborative concepts.	Interprofessional collaborative concepts within a single discipline's course for learners within that discipline.	Interprofessional collaborative concepts within a single discipline's course for learners from multiple disciplines.	Interprofessional collaborative concepts within a shared course for learners from multiple disciplines (Example: Co-listed, cross-listed).	Interprofessional collaborative concepts within a course for learners from multiple disciplines which may or may not be taught by IPE faculty team

					(Example: Course that has its own IPE designation).
Choose the level that characterizes your unit: 0 1 2 3 4 unable to assess					
Choose the level that characterizes your institution as a whole: 0 1 2 3 4 unable to assess					

ITEM	LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<b>IPE Clinical Rotations</b>	No clinical rotations with interprofessional collaborative concepts.	Interprofessional collaborative concepts within a single discipline placement for learners without planned interaction/integration of other learners.	Interprofessional collaborative concepts coordinated by a single discipline placement for learners from multiple disciplines, using parallel learning.	Interprofessional collaborative concepts within shared placement for learners from multiple disciplines, using parallel learning.	Interprofessional collaborative concepts within a placement for learners from multiple disciplines, using interactive/integrated learning.
Choose the level that characterizes your unit: 0 1 2 3 4 unable to assess					
Choose the level that characterizes your institution as a whole: 0 1 2 3 4 unable to assess					

ITEM	LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<b>IPE Community Projects/ Service Learning</b>	No interprofessio nal collaborative community projects.	Interprofession al collaborative community projects within a single discipline's placement for single discipline learners.	Interprofession al collaborative community projects within single discipline placement for learners from multiple disciplines.	Interprofession al collaborative community projects within a shared placement for learners from multiple disciplines.	Interprofession al collaborative community shared projects within a shared placement for learners from multiple disciplines.
Choose the level that characterizes your unit: 0 1 2 3 4 unable to assess					
Choose the level that characterizes your institution as a whole: 0 1 2 3 4 unable to assess					

ITEM	LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<b>IPE Standardized Assessment or Evaluation</b>	No interprofes sional collaborati ve assessment t/evaluatio n.	Interprofessional collaborative assessment/eval uation within a single discipline conducted by a single discipline for their learners.	Interprofessiona l collaborative assessment/eva luation coordinated by a single discipline for multiple discipline learners.	Interprofessiona l collaborative assessment/eva luation within a shared placement for multiple discipline learners.	Interprofessiona l collaborative assessment/eva luation within a shared placement for multiple discipline learners that

					has its own IPE designation.
Choose the level that characterizes your unit: 0 1 2 3 4 unable to assess					
Choose the level that characterizes your institution as a whole: 0 1 2 3 4 unable to assess					

ITEM	LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<b>IPE Extra-Curricular Activities</b>	No interprofessional collaborative extra-curricular activities.	Interprofessional collaborative extra-curricular activities coordinated by a single discipline for single discipline learners.	Interprofessional collaborative extra-curricular activities coordinated by a single discipline for learners from multiple disciplines.	Interprofessional collaborative extra-curricular activities within a shared placement for learners from multiple disciplines.	Interprofessional collaborative extra-curricular activities within a shared placement for learners from multiple disciplines that has its own IPE designation.
Choose the level that characterizes your unit: 0 1 2 3 4 unable to assess					
Choose the level that characterizes your institution as a whole: 0 1 2 3 4 unable to assess					

ITEM	LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<b>Health professional Student/</b>	No health professional students/programs	1-25% of the health professional students/programs	26-50% of the health professional students/programs	51-75% of the health professional students/programs	76-100% of the health professional students/programs

<b>Program Participation</b>	participate in any level of IPE.	ms participate in some level of IPE.	ms participate in some level of IPE.	ms participate in some level of IPE.	ms participate in some level of IPE.
Choose the level that characterizes your unit: 0 1 2 3 4 unable to assess					
Choose the level that characterizes your institution as a whole: 0 1 2 3 4 unable to assess					
<b>ITEM</b>	<b>LEVEL 0</b>	<b>LEVEL 1</b>	<b>LEVEL 2</b>	<b>LEVEL 3</b>	<b>LEVEL 4</b>
<b>IPE Personnel Support</b>	No staff dedicated to IPE.	Staff assigned on at least a 1-25% FTE (individual or shared) with/without designated funds.	Staff assigned on at least a 26-50% FTE (individual or shared) with/without designated funds.	Staff assigned on at least a 51-75% FTE (individual or shared) with/without designated funds.	At least one FTE (individual or shared) 76-100% dedicated IPE staff with/without designated funding provided.
Choose the level that characterizes your unit: 0 1 2 3 4 unable to assess					
Choose the level that characterizes your institution as a whole: 0 1 2 3 4 unable to assess					
<b>ITEM</b>	<b>LEVEL 0</b>	<b>LEVEL 1</b>	<b>LEVEL 2</b>	<b>LEVEL 3</b>	<b>LEVEL 4</b>
<b>Institutional Policy support of IPE</b>	IPE or similar language does not appear in official or unofficial	IPE or similar language does not appear in official institutional documentation,	IPE or similar language does not appear in official institutional documentation,	IPE language appears in official institutional documents but is very	IPE language appears in official institutional documents and is tied to

	institutional documentation.	but does appear unofficially in institutional documentation. For example, email communications or convocation speeches.	but official IPE language documentation is being considered.	general and not specific to measure outcomes.	specific measurable outcomes.
Choose the level that characterizes your unit: 0 1 2 3 4 unable to assess					
Choose the level that characterizes your institution as a whole: 0 1 2 3 4 unable to assess					

ITEM	LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<b>IPE Faculty Members</b>	No faculty members participate in IPE	Faculty members participate in IPE based on an individual interest (not officially encouraged or discouraged).	Faculty members are encouraged to participate in IPE /team teaching (add-on responsibility).	Faculty members are given release time to collaborate on IPE/team teaching.	Faculty members' roles are substantially dedicated top IPE, some faculty are designated as core IPE teachers.
Choose the level that characterizes your unit: 0 1 2 3 4 unable to assess					

Choose the level that characterizes your institution as a whole: 0 1 2 3 4 unable to assess					
ITEM	LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
<b>Faculty IPE Incentives</b>	Participation in IPE makes promotion and tenure problematic.	Participation in IPE is not considered in promotion and tenure.	Participation in IPE is considered and viewed as neutral, with no effect on promotion and tenure.	Participation in IPE positively affects promotion and tenure decisions.	Participation in IPE advances promotion and tenure decisions as a priority focus.
Choose the level that characterizes your unit: 0 1 2 3 4 unable to assess					
Choose the level that characterizes your institution as a whole: 0 1 2 3 4 unable to assess					

## *Appendix C*

### **Interview Questions/Data Collection Guide**

Date of Interview:

Name of Interviewer:

Position of participant:

Are you a member of the university faculty association?

Are you involved in any teaching in the undergraduate program?

In what year (s)?

Interprofessional education (IPE) by definition “occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care” (Centre for Advancement of Interprofessional Education, 2002).

#### **Educational Venues**

1. To what extent is IPE occurring in courses in your undergraduate program and what are the professions involved?
2. How is IPE occurring in clinical experiences (hospital, clinics, community) in the program, and what are the professions involved?
3. How is IPE occurring in community projects or service learning in your program, and what are the professions involved?
4. How is IPE occurring in each year of the program?

#### **Educational Evaluation**

5. Have any of the IPE experiences/activities been assessed or evaluated and if so, by whom?

#### **Programmatic Participation**

6. Is IPE occurring as a voluntary extra-curricular activity in the program?  
If so, please describe the activity and explain who the professions involved are.

7. Can you describe the level of student participation in the program? Is it mandatory or voluntary?

### **Institutional Support**

8. Are there staff and resources dedicated to IPE within the program? If so, can you describe their role?
9. Does the university support IPE in its strategic plan and in other ways?

### **Faculty Incentives**

10. How are faculty members involved in IPE experiences, and do they receive release time for IPE?
11. Are there incentives for faculty who participate in student IPE experiences? If so, what are they?

### **Challenges and Opportunities**

12. Overall, what are the challenges of integrating IPE in the program?
13. Are there IPE opportunities that are being explored? If so, what are they?
14. Is there anything else you would like to add?
15. If there is something else you wish to share with me after this interview, please feel free to email me at [edonato@laurentian.ca](mailto:edonato@laurentian.ca) ([canadaccg@gmail.com](mailto:canadaccg@gmail.com) Laurentian Programs)

If you find that answering these questions has been distressing, you may contact Laurentian University's Health and Wellness program located in Health Services which provides Employee Assistance Information for off-campus counselling services. Phone: (705) 673-6546, or 675-1151, extension 1067.

If you find that answering these questions has been distressing, you can contact Nipissing University's Employee Assistance Program the EAP provides 24 hours per day services. The EAP number is 1-877-2345 EAP (327).

If you find the interview upsetting, you can access the Employee and Family Assistance Program which provides services to Lakehead University employees by an off-site team (Behavioural Sciences Centre). Phone number is (807) 623-7677 or toll-free (888) 423-5862 to speak with a counsellor or to arrange an appointment.

## Appendix D



### APPROVAL FOR CONDUCTING RESEARCH INVOLVING HUMAN SUBJECTS

Research Ethics Board – Laurentian University

This letter confirms that the research project identified below has successfully passed the ethics review by the Laurentian University Research Ethics Board (REB). Your ethics approval date, other milestone dates, and any special conditions for your project are indicated below.

TYPE OF APPROVAL / New / Modifications to project X / Time extension X

<b>Name of Principal Investigator and school/department</b>	Emily Donato, PHD Rural and Northern Health, supervisor, Nancy Lightfoot
<b>Title of Project</b>	Integrating Interprofessional Education in the Curricula: Opportunities and Challenges of Four Northern Ontario Undergraduate University Nursing Programs
<b>REB file number</b>	2015-11-09
<b>Date of original approval of project</b>	January 05, 2016
<b>Date of approval of project modifications or extension (if applicable)</b>	April 12, 2016 December 14 <sup>th</sup> , 2016
<b>Final/Interim report due on:</b> (You may request an extension)	December, 2017
<b>Conditions placed on project</b>	

During the course of your research, no deviations from, or changes to, the protocol, recruitment or consent forms may be initiated without prior written approval from the REB. If you wish to modify your research project, please refer to the Research Ethics website to complete the appropriate REB form.

All projects must submit a report to REB at least once per year. If involvement with human participants continues for longer than one year (e.g. you have not completed the objectives of the study and have not yet terminated contact with the participants, except for feedback of final results to participants), you must request an extension using the appropriate LU REB form. In all cases, please ensure that your research complies with Tri-Council Policy Statement (TCPS). Also please quote your REB file number on all future correspondence with the REB office.

Congratulations and best wishes in conducting your research.

Rosanna Langer, PHD, Chair, Laurentian University Research Ethics Board

*Appendix E*

Research Ethics Board  
t: (807) 343-8283  
research@lakeheadu.ca

March 18, 2016

**Principal Investigator:** Emily Donato  
**Co-Investigator:** Lorraine Carter, Leigh MacEwan, Nancy Lightfoot  
Laurentian University  
School of Nursing  
935 Ramsey Lake Road  
Sudbury ON Canada P3E 2C6

Dear Prof. Donato and research team:

**Re: REB Project #: 128 15-16 / Romeo File No: 1465032**  
**Granting Agency: N/A**  
**Granting Agency Project #: N/A**

On behalf of the Research Ethics Board, I am pleased to grant ethical approval to your research project titled, "Integrating Interprofessional Education in the Curricula: Opportunities and Challenges of Four Northern Ontario Undergraduate University Nursing Programs".

Ethics approval is valid until March 18, 2017. Please submit a Request for Renewal to the Office of Research Services via the Romeo Research Portal by February 18, 2017 if your research involving human participants will continue for longer than one year. A Final Report must be submitted promptly upon completion of the project. The Romeo Research Portal is available at:

[http://romeo.lakeheadu.ca/Romeo\\_Researcher/login.aspx](http://romeo.lakeheadu.ca/Romeo_Researcher/login.aspx)

During the course of the study, any modifications to the protocol or forms must not be initiated without prior written approval from the REB. You must promptly notify the REB of any adverse events that may occur.

Best wishes for a successful research project.

Sincerely,

A handwritten signature in cursive script, appearing to read "L. Chambers".

Dr. Lori Chambers  
Chair, Research Ethics Board

/scw

## Appendix F



February 3, 2016

Ms. Emily Donato  
532 Fairlane Drive  
Sudbury, ON

Dear Emily,

Re: **Protocol #16-01-011A - Integrating Interprofessional Education into the Curricula: Opportunities and Challenges of Four Northern Ontario Undergraduate University Nursing Programs** – Laurentian University #2015-11-09

It is our pleasure to advise you that the Research Ethics Board at Nipissing University has granted *institutional approval* for the research project as noted above to **December 31, 2016**.

If you require additional time or an extension or require changes to the project you are required to advise the Research Ethics Board at [ethics@nipissingu.ca](mailto:ethics@nipissingu.ca).

At any time during your research should any participant(s) suffer adversely you are required to advise the Research Ethics Board at Nipissing University, (705) 474-3450 ext. 4055 within 24 hours of the event.

We wish you all the success in the completion of your project.

Sincerely yours,

*Dana Murphy*

Dr. Dana R. Murphy, Chair  
Research Ethics Board

cc: Dr. Nancy Lightfoot, Supervisor, Laurentian University

## Appendix G



### Letter of Invitation to Participate/Consent

Dear Nursing Program Faculty Member,

As a PhD student, School of Rural and Northern Health, Laurentian University, I invite you to become a participant in my PhD research project, *Integrating Interprofessional Education in the Curricula: Opportunities and Challenges of Four Northern Ontario Undergraduate University Nursing Programs*. The purpose of the study is to explore how four Northern Ontario undergraduate university nursing programs are integrating interprofessional education (IPE) in their curricula, and to identify the opportunities and challenges experienced by Northern Ontario undergraduate university faculty and program directors in integrating IPE in their curricula.

There is limited knowledge on what is occurring with the integration of IPE in Northern Ontario university undergraduate nursing programs, especially from the perspectives of faculty members and program directors. Therefore, this research will aim to determine the experiences and perspectives of those who are involved in delivering these educational programs in the North using a multiple case study approach.

Data collection will occur during May 2017. Focus group interviews with faculty members and individual interviews with program directors will take place by this time, as well as review of program and course descriptions and objectives, and university and program strategic plans. Two faculty members teaching in each year of the program will be interviewed in a focus group format for approximately 1.5 hours. Due to my role as Assistant Professor in the School of Nursing, a bilingual research facilitator will collect the consent forms to ensure anonymity, and will be conducting the director interviews and faculty member focus groups. Rooms will be booked for focus groups outside of the nursing units. Incentives will be provided to all participants in the form of refreshments during the focus groups and 15 dollar Tim Horton gift certificates.

You will have a chance to validate your responses once they are transcribed, and can add or remove any data you wish. You do not have to provide any documents if you do not feel comfortable doing so, but can speak to them if you wish. There is a chance based on what you say that you or the institution may be identifiable, and anonymity cannot be guaranteed if you choose to speak outside the context of the research. Institutions will be identified in the final report only if permission is given to do so as requested in the consent. If you find that answering these questions has been distressing, you may contact Laurentian University's Health and Wellness program located in Health Services which provides Employee Assistance Information for off-campus counselling services. Phone: (705) 673-6546, or 675-1151, extension 1067.

As programs of nursing are constantly evolving, where curriculum is reviewed and revised according to accreditation and other institutional requirements, it is hoped that one of the benefits of this interview will be the sharing and articulation of ideas and experiences with

respect to IPE in undergraduate nursing programs. The preliminary findings will be shared with all participants via a presentation prior to finalizing the analysis. This will provide feedback which will further inform the analysis for the final report. Analysed results in the form of a one-page summary will be provided to programs in reciprocity for their participation as well as a specific program report upon request. These may be used by the program to evaluate IPE within the curriculum, refine what is currently being done, and to determine what may be required in the way of resources. The final report will be sent to each program Director, and is to be shared with the program faculty. Reports detailing the findings of the study will be generated for peer-reviewed journal publications and conference presentations.

If you are interested in participating in this research study, please return the following consent form within one month of receipt of this invitation.

Yours sincerely,

Emily Donato, RN, BScN, MEd, PhD Student  
Principal Investigator  
School of Rural and Northern Health  
705-675-1151 or 1-800-461-4030 ext. 3807, [edonato@laurentian.ca](mailto:edonato@laurentian.ca)

Co-investigators:

Nancy Lightfoot, PhD, Thesis Supervisor, Professor, School of Rural and Northern Health, Laurentian University  
Leigh MacEwan, PhD, Professor, School of Social Work, Laurentian University  
Lorraine Carter, PhD, Professor, Director, Centre for Continuing Education, McMaster University



## Consent Form

**Study Title:** Integrating Interprofessional Education in the Curricula: Opportunities and Challenges of Four Northern Ontario Undergraduate University Nursing Programs.

**Principal Investigator:**

Emily Donato, PhD Student, School of Rural and Northern Health, Laurentian University

**Co-investigators:**

Nancy Lightfoot, PhD, Thesis Supervisor, Professor, School of Rural and Northern Health, Laurentian University

Leigh MacEwan, PhD, Professor, School of Social Work, Laurentian University

Lorraine Carter, PhD, Professor, Director, Centre for Continuing Education, McMaster University

**Dear potential participant,**

The purpose of the study is to determine how Northern Ontario undergraduate university nursing programs are integrating interprofessional education (IPE) in their curricula, as well as the opportunities and challenges experienced by Northern Ontario undergraduate university faculty and administrators in integrating IPE in their curricula.

Data collection for the study will occur at your site and includes semi-structured individual (Program Directors) and focus group (faculty members) interviews, the collection of program and course descriptions and objectives, as well as review of the university and program strategic plans. After informed consent is obtained, a mutually agreeable date and location outside of the nursing unit will be finalized for the data collection visit to your site.

As a participant, you understand that:

- Participation is voluntary and that you can withdraw from the study at any time or take a break without consequence by notifying the principal investigator.
- You agree to be audio recorded during all interviews. The interview data will be audio recorded for subsequent verbatim transcription which will be returned to you by the research facilitator to validate the transcription, and to allow addition and/or removal of specified responses which you do not want included in the data.
- Hard copies of data, and electronic data stored on a password protected external hard drive will be locked in the principal investigator's work office in a locked cabinet in the School of Nursing at Laurentian University. Data will be stored securely for a minimum of 5 years. Only the principal investigator and the thesis supervisor will have access to information collected about the identity of participants.

- Names of interviewees will be kept confidential throughout the project and onward, and any identifiable information will not appear on any documents. However, there is a chance based on what you say that you or the institution may be identifiable.
- Anonymity cannot be guaranteed if participants choose to speak outside the context of the research. Institutions will be identified in the final report only if permission is given to do so as requested in consent.
- As a participant, you understand that you can decline to answer any question or withdraw from the interview at any time without consequence.

Once you have signed the consent form, please scan and return it to Gisele Guenard at [canadaccg@gmail.com](mailto:canadaccg@gmail.com) with subject line title: IPE Research, within one month of receipt of this letter.

If you have any questions or concerns about the study or about being a subject, you may contact the principal investigator, Emily Donato or her supervisor Dr. Nancy Lightfoot for further information:

Emily Donato, R.N., B.Sc.N., M.Ed.  
PhD Student  
School of Rural and Northern Health  
Laurentian University  
705-675-1151 or 1-800-461-4030 ext. 3807  
[edonato@laurentian.ca](mailto:edonato@laurentian.ca)

Nancy Lightfoot B.Sc., M.Sc., PhD,  
Thesis Supervisor and Professor,  
School of Rural and Northern Health,  
Laurentian University  
705-675-1151 or 1-800-461-4030 ext. 3972  
[nlightfoot@laurentian.ca](mailto:nlightfoot@laurentian.ca)

This research study has been reviewed and approved by the Laurentian University Research Ethics Board. For concerns or questions regarding the ethical conduct of the study, you may also contact the Laurentian University Research Ethics Officer, at [ethics@laurentian.ca](mailto:ethics@laurentian.ca) 1-800-461-4030 ext. 3213 or 2436.

I have reviewed the Letter of Invitation to Participate/Consent and agree to participate in this study.

Signature (Participant): \_\_\_\_\_ Date: \_\_\_\_\_

I agree to my institution's name being identified in this research study and any oral or written material resulting from this study. I understand that I can change my mind regarding this by emailing the principal investigator at any time during the study.

Signature (Participant): \_\_\_\_\_ Date: \_\_\_\_\_

## *Appendix H*

### **Cross-Case Themes**

Based on Interviews with Directors (D1, D2, D3, D4), and Focus Groups (FG1, FG2, FG3 & FG4) - 13 members altogether, Documents (Doc 1, Doc 2, Doc 3, Doc 4), Websites (W1, W2, W3, W4), and Observations (O1, O2, O3, O4)

#### **1. Varied understandings of IPE**

FG1M2 “I don't know enough about IPE. I haven't myself had much exposure to it or practice with it or training or development in that, so it would be a real slow, hard learning thing I think, you know? For me it's like that lack of knowledge, you know, that almost ignorance about what exactly it is and why it's important”.

FG2M4 “to be honest, I find it confusing, I don't really know, like...I guess what IPE is...”

D3,4 “It is really to have the same definition of interprofessional, because sometimes administration puts students of different disciplines in the same class and it is an interprofessional course”

FG3M1 “I think that the people who are here are passionate about helping interprofessional education in our courses and in activities and laboratories so you talk to people who are already convinced.”

FG3M3 “It is mostly with the experiences that you do, there is plenty of space to learn after the experiences that you are going to have.”

FG3M1 “Everyone has a different view of what IPE is. There are several definitions that are in the research, it is to learn together from one another, not just to learn. Another thing would be research, to really start pushing the research at home” -in context of what IPE is and is not.

FG4M2 “– there may be a limited view, or we may, you know, like I'm not sure if some of the things that I said are completely 100%”

FG4M2 “I think like once you hear the definition of IPE – I mean, I first thought of IPE, oh, that thing at NOSM, but when I really thought of IPE more broadly, there's a lot going on that we don't – we don't sit down and map our IPE experiences and resources, so it's – a lot of things are taken for granted, but it's actually going on in small pockets all over the place”.

Doc3, Doc1-3, Doc2-1, W2-1, W2-2, Doc3,4-2, Doc3-1, W3-2, W3,4-1, W3,4-2, W4-1

## 2. Diverse IPE learning activities within curricula

D1 “We’ve tried, I would say, over the past probably 10-12 years to have.... More genuine IPE opportunities”

D1 “it’s just threaded through our learning outcome that’s really looking at relationships”

FG1M3 “all students have to attend those labs.... those are mandatory”

FG1M3 “So first year to my knowledge, we start with that discussion of you know, our partners and the health care team and what the different roles are”

FG2M1 “the common learning outcomes were designed by the curriculum committee”

D3, D4 “for the simulation it is voluntary for the students so they can participate if they want...”

D3 “Since this is a major objective of the program, there will be in each course a sub-goal that is related to collaboration with other disciplines”

FG3M4 “In terms of clinical experiences, yes, the students in our program are called upon to work in multidisciplinary teams”

FG3M4 “students are taught different cases by simulation, different clinical situations that may involve other health professionals”

FG3M2 “in the labs we do a lot of interprofessional simulation”

FG3M1 “our courses and clinical experiences are linked together so the interprofessional experiences that we share with our students, there are always guidelines...”

FG4M1 “So in one of the third year core clinical courses, there’s an opportunity for a couple of students to participate through an IPE facilitator at NOSM, with medical students, and I believe dietician residents, and possibly physio and nursing”.

FG4M2 “I know that this year it’s formally in the syllabus, just because I’ve seen the new syllabi coming out. The third-year students who do IPE will get credited community hours for it”.

D2 “I don’t think they ever reach mastery by the end of their education, so I think that they get some good exposure in there....”

D2 “there is exposure throughout the years of interprofessional education from a theoretical perspective”

FG1M2 “I keep reading this IPE acronym and I keep thinking okay, so interprofessional education, but in my mind, I keep thinking interprofessional exposure. So, they are going to be

exposed to these things but are they engaged in formal or organized education, learning with, from and about each other? No, not really”.

FG2M4 “I would say sometimes the students do interact with the other multidisciplinary team members but I don’t think that there is actual formalised education that’s happening, it’s more of like, an observation that could be occurring”

FG3M4 “In simulation, or even in the classroom, in the laboratory or in our clinical courses or during classes to bring diverse professionals to present to our students to simply open up new horizons, to understand what other professions do, how it works, and how they might later in the work world, collaborate with others.”

FG2M1 “They are exposed in some areas and immersed in other scenarios with community partners with a variety of professions...so they are exposed to a number of different roles, as it relates to community and population health, um, and many of them also have exposure to public health infection control, occupational health”.

FG2M1 “So they get a - exposure to a lot of team within their own student group, and then we, um, we actually lead them through the teambuilding process and conflict resolution”.

FG2M3 “part of my course is clinical, so of course, students are exposed to various professions in the hospital”

D3 “in “sciences infirmières” exceeding the first year, so they are already in an environment where there are several disciplines, so they are already starting to work with other disciplines. But what I find is good with what we are doing is really knowing the roles of others and try to see how I can communicate with other disciplines”.

FG3M2 “For hospital placements, our students are always exposed to the other professionals, they work mostly in nursing; however, they are exposed to other disciplines, such as doctors and in community placements.

FG4M2 “I think that there were social workers involved, there was an activity member, like there were activity coordinators. So they did have some of that exposure, starting in first year”.

FG4M1 “they might have been in a setting where a social worker runs the place, and sort of like role-models other skills that are sort of good skills transfer across the professions”.

FG4M2 “Personally, if I have a topic that’s coming up in my class, that I am not familiar with, I’ll bring in another expert. That expert may be a nurse, they may be a social worker, they may be a peer counsellor. But I bring in the person who could speak to that subject matter in the best way possible. So that’s another way of utilising IPE, I think...”

D1 “The biggest challenge is how do we create consistent experiences for all students”

D3,4 “One of the challenges we have... is to encourage participation in activities in a less voluntary and a more mandatory way”

Doc1-1, Doc1-3, W1-3, W1-4, W1-5, W1-6, O1, W2-1, W2-2, Doc3-1, Doc3,4-2, W3-2, o3-1, Doc4-1, Doc4-2, W4-2

### **3. The Requirement for Support and Resources for IPE and Research**

D2 “IPE has been identified by our institution and our program as required to be fully threaded and integrated..... Yeah, so they have strong IPE, you know, ideals... every third word is about how interprofessional education is going to be integrated”

D3,4 “I can certainly share with you the objectives of the strategic plan. We have one for the school, which includes interprofessionalism...”

FG1M1 “And it sounds easy when we’re sitting in here, ‘Oh, you just make a phone call and make it happen’ but it doesn’t happen at all that way. Like it’s just so many challenges”

D2 “we’ve had a couple of faculty that have been assigned to the IPE Committee”

D2 “her workload might not be as heavy as someone else’s because she’s gonna take that part.... I am conscientious that it is extra time that she has to do, so I guess in that way you can say that there is support that’s given to faculty to do that”.

\*FG2M1 “it does not occur in each of the four years as much as it should, and as much as some people think it does”

\*FG2M2 “I think there’s two reasons that happens. One is that we don’t really have access to all the people that you would normally- like if we were a larger institution, there would be different professions accessible to us...”

FG2M1 “the interprofessional collaboration barriers are systemic, institutional, societal, you know...”

\*FG2M1 “because in the north, where universities are smaller, and they would have a smaller mix of disciplines ...”

FG2M1 “scheduling challenges have been the biggest barrier”

FG2M4 “Scheduling is going to be one, trying to fit the time– well for simulation anyway”

D3, D4 “It’s not always easy because we have schedules that are a little different”

FG3M2 “a big challenge is the availability of different programs, finding matches that integrates one into the other”

FG3M1 “The schedule logistics, funding, location... I would say that place is really important, funding, human support.”

FG4M1 “and I think there are also challenges with scheduling”

FG4M2 “there’s not nearly as much as there could be”

In response to main challenge:

FG4M1 “scheduling”

FG1M1 “It would be really nice to, in the future, see workload allocation... or whoever is on that committee having a .5 sort of like from an advocacy perspective for how we can get IPE organized better, having .... say a .5 for being the IPE lead and then having a stand-in item on the agenda, the faculty meetings, whatever for an update on IPE stuff”

FG1M3 “Our IPE activities have probably, you know, taken a hit priority wise because we’re short of faculty”

D2 “We’ve had .... faculty that have been assigned to the IPE committee.... workload might not be as heavy as someone else’s because .... going to take part in that”

FG2M1 “I wouldn’t say there’s a barrier to doing it. I just don’t think that it’s at a level of... there are other competing priorities”

FG2M1 “no staff associated ...staff or faculty release time... I personally get one hour per week ...for IPE”

FG2M1 “There have been faculty within the collaborative BScN that have been provided with two, three, and four hours per week, related to IPE. But there hasn’t been a mechanism to attach that to any particular responsibilities. So then that stopped. So if, um, if your workload allowed, you might be given – and you had an interest, or it was felt you were leading a group of students that ought to be exposed to interprofessional – there was from the institution, so from the director, or from the dean level, a desire to give faculty some hours, but it was – it wasn’t always, uh, possible for you to actually do anything with the hours, or there wasn’t a great evaluation mechanism to hold – like what did you do with those three hours”

FG1M2 “I just think if they set up or even hired someone that has some experience in IPE to come to faculty council and say....’We’d like to help to work with you guys on how you can bring this together for teaching and for research’

FG1M1 “I think a challenge is here is that nobody’s coordinating any IPE research the way that other universities are”.

D1 “So we don’t have anybody who has course release to be looking at IPE opportunities across the curriculum. You know, I think that that’s a direct result of having a .... Scarcity of resources”

D3,4 Simulation role created and is also an IPE role bringing together Faculty of Health and medical learners.

D3,4 “presently, the people who participate it is really on their own time. It is a dedication because people really believe in it...a reluctance to participate is that there is no credit recognition for individual professors”

D3,4 “So it’s to find a way to work efficiently at the budget level to really have an interprofessional approach...”

FG3M4 re: faculty “they are not paid separately and that would could be part of their academic duties”

FG3M2 “for the IPE participation that most professors and laboratory technicians involved it’s all on a voluntary basis. This is not mandatory for professors. This is not included in their workload”

D3,4 “Another big issue is space.... we did not have a big enough room”

FG4M1 “For any formal approach there’d have to be dedicated- like places- so IPE needs a place to occur”

FG4M1 “maybe they need a person dedicated to that, that pulls them all together”

In response to main challenges:

FG4M2 “workload”

FG4M2 “I think to really initiate it, and see it go forward, someone has to be passionate and willing to kind of do it off their own back, unfortunately to start, and then get the hype going, get that what do you call it ... get the buy-in”

Doc1-3, W1-3, W1-4, W1-5, W1-6, O1, O2-1, O2-3, O3-1, O4

**\* Access to other health professionals for IPE for one program- a resource**

#### **4. Student Participation and Leadership in IPE**

FG1M2 “the students come together and they take the lead on making that happen. So, it’s something that our program is invited to be involved in, but it’s definitely not something that we can take any credit for”.

FG1M2 “I think the student-led clinic, the principle looks like a nice opportunity. I don't know what's going on with it but if they can find a way to get it off the ground”

D3,4 “there is also a group of students that organize interprofessional activities....and they do activities and conferences that go beyond what is required within the program”

D3,4 “...the students are currently looking at the possibility of opening a clinic, student led clinic downtown... Often it comes from the students because they also see this need”

FG3M1 “That's the NOSM, orthophonie, gerontology, sciences infirmières, nursing, kinesiology students. It's a group of students who want to open a clinic together. It is in the beginning, but we hope that with NOSM we will be able to develop a place for them.”

FG3M4 “Yes we sometimes have activities that aren't always mandatory, only occasionally, where we organize practice clinics with our students, with the medical school. There are sometimes conferences where our students take part...”

FG3M1 “The simulation is very attractive to the student population they really like the hands on, they like to learn on the hours. For those I see a lot of maybe before participating.”

FG4M1 “IPE became something I think that the more keen students, especially the third-year level participated in.”

FG4M1 “It's usually the higher achieving students who are interested to make time and sign up.”

Doc1-1, W1-3, W1-5, W1-6, Doc3,4-1, Doc4-2

## **5. Limited IPE Evaluation**

FG2M1 “we've done something called a one-minute essay...basically it looks at what did you learn, what do you need more information about, and what are your questions going forward?”

FG2M2 “it's a scholarly paper...they have to look up the topic, they have to talk about the experience of being in the IPE experience, and then they have to reflect on it”

D3 “It is evaluated at each clinical experience. ... one of the objectives, that asks the student talks about how he would do this at the interprofessional level, it will be evaluated by the professor...”

D3,4 Regarding “the simulator educator, but it's really interprofessional... We are evaluating what we have done. These are pilot projects, were exploring to see if there are things we could do differently”

FG3M4 “In the course evaluation forms there are objectives that can render account on the performance of a student in the interprofessional team whether in a community or hospital setting”

FG3M1 “What we want to see is the experience, did it cause a change on their wanting to learn together, but.... Is it going to have an effect on when they will work together?”

FG4M2 “When I did the simulation experience, there was a – an evaluation form, I believe, that we filled out, to talk about the experience. And feedback that was gathered afterwards, in like a focus group type of scenario, they had all the professions who were all the kind of leaders of the teams, or whatever, present. So that was one method of evaluation”.

FG4M2 “they have the Northern – the NICHE conference every year. And I have participated in that as a presenter once. So that’s a way to also see how various IPE from an academic perspective are being evaluated, and then you can bring that into your own practice in some way or another”.

FG2M1 “there is one-at least one learning outcome that alludes to interprofessional. Although I don’t think the IPE term is there”

Doc2-1, W2-1,W2-2, Doc3,4-2, Doc4-2