

UNDERSTANDING INTERPROFESSIONAL EDUCATION:  
A MULTIPLE-CASE STUDY OF  
STUDENTS, FACULTY, AND ADMINISTRATORS

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## ABSTRACT

Katherine Henkin

### UNDERSTANDING INTERPROFESSIONAL EDUCATION: A MULTIPLE-CASE STUDY OF STUDENTS, FACULTY, AND ADMINISTRATORS

Although interprofessional education (IPE) opportunities can help prepare students for future practice and patient-centered care, many health professions students in the country are not educated in an environment with opportunities to learn with, from, or about students from other health professions. With upcoming curricular changes at the Indiana University School of Medicine (IUSM) and the Indiana University School of Nursing (IUSN), IPE remains at the forefront of these changes in both schools. To date, few studies have explored student, faculty, and administrators' conceptualizations of IPE prior to formal implementation. Additionally, previous studies have not compared IPE conceptualizations across these groups. This multiple-case study explores and compares how groups of stakeholders from the IUSM (Indianapolis) and the IUSN (Indianapolis) conceptualize IPE. Data collection included the examination of discipline-specific public documents and one-on-one interviews (N=25) with pre-licensure students, clinical faculty, and administrators from each school. Coding and extraction of themes transpired through within-case and cross-case analysis and data supported the following findings: the 'business of medicine' may prevent IPE from becoming a priority in education; stakeholders' conceptualizations of IPE are shaped through powerful experiences in education and practice; students desire more IPE opportunities at the institution;

stakeholders at the IUSN have a long-standing investment in IPE; and the institution requires a ‘culture shift’ in order to sustain IPE efforts. The findings suggest that IPE belongs in all education sectors and IPE efforts deserve reward and reimbursement. The findings also insinuate that leadership, roles, and team training education belong in IPE and IPE culture requires all individuals’ (e.g., student, faculty, administrators, patients) commitment. Importantly, the institution must continue IPE development, research, and dissemination. These findings can help shape curricula as time progresses, increase the likelihood of developing a successful new curriculum, and prompt ongoing reflection about IPE. This information can influence how institutions approach IPE and may lead to a more successful and informed IPE curriculum in the first years of implementation. And, hopefully what is learned through IPE will be translated into healthcare practice environments.

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## LIST OF ABBREVIATIONS

IOM: Institute of Medicine

IPE: Interprofessional Education

IPP: Interprofessional Practice

IU: Indiana University

IUSM: Indiana University School of Medicine

IUSN: Indiana University School of Nursing

WHO: World Health Organization

## **Chapter 1: Introduction**

### **Background and Problem Statement**

With the growing complexity of the healthcare system and patient care, it is essential that professionals from all types of healthcare fields join forces and work interprofessionally (Josiah Macy Jr. Foundation, 2010). Working interprofessionally involves working alongside others from different professions and collaborating with individuals of different skill sets to make shared, informed decisions. This can pose challenges for health professionals because interprofessional collaboration may not be taught in educational institutions (IOM, 2003) and the way health professionals practice tends to be a direct reflection of how they were educated (Wakefield, Cooke, & Boggis, 2003).

Unfortunately, discrepancy exists between health professions education and professional practice; education in the health professions has not paralleled changes that have transpired in practice (Interprofessional Education Collaborative Expert Panel, 2011; Josiah Macy Jr. Foundation, 2010). Beyond the educational arena, it is often assumed and expected that professionals know how to effectively communicate and collaborate in healthcare teams. However, in the United States, most undergraduate health professions schools do not provide opportunities in their curriculum for students to communicate with students from other professions, let alone collaborate or make decisions with students from other professions. Although debate exists about when to introduce interprofessional education (IPE) into curriculum, many scholars maintain that health professions students (e.g., students in medicine, nursing, physical therapy, pharmacy, occupational therapy, dentistry) should begin working together early in their

undergraduate health professions education in order to better prepare them for future practice and interprofessional decision-making (Leaviss, 2000; McPherson, Headrick & Moss, 2001; Tunstall-Pedoe, Rink, & Hilton, 2003; Wakefield et al., 2003). The lack of interprofessional opportunities in health professions education can be problematic and may make the transition from health professions student to healthcare professional one that is amass with struggles.

Although most health professions students are not educated interprofessionally, one of the most reassuring aspects of this reality is that healthcare education is, indeed, attempting to accommodate for changes seen in practice (Interprofessional Education Collaborative Expert Panel, 2011). With proactive efforts in curricular reform, IPE has been placed on the curricular map and a widely recognized definition has been established. The World Health Organization (WHO) offers the following: “Interprofessional education occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes” (2010, p. 7). Interprofessional education prepares students in the health professions for a more effective future interprofessional practice (Le, Spencer, & Whelan, 2008). The goal of IPE is threefold: for students to learn skills, knowledge, and attitudes; for students to carry these attributes into practice to promote more effective collaboration; and to improve the safety and quality of patient care (Reeves, 2009).

An inaugural objective of IPE was to decrease strained relationships of healthcare professionals that ultimately impair patient care and outcomes (Anderson, Thorpe, & Hammick, 2011; Ryan & McKenna, 1994). Although IPE can span all healthcare professions, the fields of nursing and medicine hold a distinct place in the IPE landscape.

Physicians and nurses remain two of the chief components of the healthcare team, and collaboration among these professionals is necessary (Nadolski et al., 2006). Not only do nurses and physicians work very closely with one another and have a unique relationship (Stein, 1968; Sweet & Norman, 1995), they also make up the largest proportion of healthcare providers (as cited in Manojlovich & DeCicco, 2007). Despite the inevitable interactions of nurses and physicians in the workplace, traditional medical and nursing school educational curricula do not provide opportunities to develop or nurture this unique and close relationship. Larson (1999) argued that a malfunctioning interprofessional relationship between a nurse and physician can be harmful to patients and is not only unfavorable, but also unethical.

A functioning interprofessional relationship can stem from IPE. Interprofessional education can reduce hierarchies, break down misperceptions, construct professional identities, and highlight what others can offer to the team (Olenick, Ryan Allen, & Smego, 2010). What is learned through IPE can translate to practice, and it is largely recognized that the landscape of nurse-physician collaboration is one that can affect the outcomes for, not only nurses and physicians, but also for patients and healthcare organizations (Larson, 1999; Patronis Jones, 1994). Interprofessional collaboration is linked to improved patient outcomes (Baggs et al., 1999; Boyle & Kochinda, 2004; Henneman, Dracup, Ganz, Molayeme, & Cooper, 2001; Schmalenberg et al., 2005), decreased healthcare costs, decreased patient length of stay, decreased patient mortality, increased nurse autonomy, nurse job satisfaction (Rosenstein, 2002), and increased nurse perceptions of high-quality care (Schmalenberg et al., 2005). While the advantages of an IPE curriculum are clear, challenges exist. The literature notes that the major issues in

IPE relate to scheduling (Blue, Zoller, Stratton, Elam, & Gilbert, 2010) and “rigid curriculum, turf battles and lack of perceived value” (Curran, Deacon, & Fleet, 2005, p. 76), but perhaps the most significant challenges of implementing an IPE curriculum are attitudinal (Anderson et al., 2011; Gilbert, 2005). Nurses and physicians have a long history of occasional discord in their professional environments; therefore educating nursing and medical students, faculty, and administrators about the underpinnings of IPE and assuring them of its value may be the biggest challenge to overcome (Gilbert, 2005). In addition, several factors play a critical role in successful IPE implementation. These factors include administrator and faculty support, collaboration with other health professions programs, an IPE curriculum team, faculty compensation and acknowledgement for participating in IPE, and assessment tools for IPE evaluation (Buring et al., 2009). Another key challenge relates to the time and effort required to establish evaluation and measurement tools for IPE (Illingworth & Chelvanayagam, 2007). Despite these challenges, many argue IPE should no longer be considered the ideal in health professions education, but rather a realistic, practical, and achievable way to establish trust and collaboration among professionals (Gilbert, 2005; McPherson et al., 2001; WHO, 2010).

Along with the growing recognition of the benefits and challenges of IPE and shifts in curricula, some organizations and accrediting bodies encourage or require health professions schools to include interprofessional opportunities in their curricula. Both national and international organizations such as the Institute of Medicine (IOM) and the WHO have championed efforts to include IPE in healthcare education (IOM, 2001; IOM, 2003; WHO, 1988; WHO, 2010). In addition, organizations from individual health

professions, such as the Association for American Medical Colleges (AAMC, 2011) and the American Association of Colleges of Nursing (AACN, 2008) stand behind IPE.

Despite IPE's position at the forefront of national and international healthcare education dialogue, health professions students are still predominantly educated separately (e.g., nursing students are taught in isolation from medical students) (Barnsteiner et al., 2007; Buring et al., 2009; Fagin, 1992; Heuer, Geisler, Kamienski, Langevin, O'Sullivan Maillet, 2010; Margalit et al., 2009; Oandasan & Reeves, 2005b; Rafter et al., 2006; Sargeant, 2009; Walrath et al., 2006) and little is taught about how health professionals can and should work together effectively (Josiah Macy Jr. Foundation, 2010). Over the last 30 years, IPE has gained momentum, but implementation has been slow and few schools have a formal IPE curriculum (Thompson & Tilden, 2009; Blue, Zoller, Stratton, Elam, & Gilbert, 2010) or a commitment to IPE (Bennett, 2011).

Although an IPE curriculum may help prepare undergraduate health professions students for patient-centered collaborative practice (WHO, 2010), implementation remains complex and takes careful and strategic planning (Davenport, Spath, & Blauvelt, 2009; Oandasan & Reeves, 2005b). Implementation of IPE requires "joint responsibility across a number of jurisdictions..." (Gilbert, 2005, p. 32) and students, faculty, and administrators can be major powerhouses or stakeholders during curricular development and reform (Bland et al., 2000). Students, faculty, and administrators' understanding of the concept of IPE can influence not only the way students are educated but also the development and improvement of curriculum and the way healthcare is practiced. Their input in the curricular process is essential.



The Indiana University School of Medicine (IUSM) and the Indiana University School of Nursing (IUSN) are actively engaged in curricular reform and continue to collaborate on the implementation of IPE curricula. However, at this stage, IPE is not fully integrated across the educational culture at these schools and little formal IPE curriculum exists that includes collaboration between students at the IUSM (Indianapolis) and the IUSN (Indianapolis). At this pre-IPE implementation phase of curricular reform, students,' faculty, and administrators' understanding of IPE are important to guide Indiana University's (IU) IPE curricular efforts. Whether these stakeholders' perceptions are shared or not can influence the organization (Malloy et al., 2009) and the implementation of IPE at IU. One way to measure the impact of IPE is to look at changes in attitudes and perceptions (Oandasan & Reeves, 2005b); however, these changes cannot be detected without first knowing stakeholders' baseline understanding of IPE. In the future, stakeholders' baseline understanding of IPE can help measure ongoing, and perhaps evolving changes in perceptions and, ultimately, the impact of IPE curricula.

### **Study Purpose and Central Questions**

The purpose of this multiple-case study is twofold. First, the researcher explored and described how groups of students, faculty, and administrators at the IUSM (Indianapolis) and the IUSN (Indianapolis) understand the concept of IPE. This research occurs at a crossroads in health professions education—curricular reform is transpiring, but little formal IPE curriculum involving both schools exists; hence the participants' understanding of IPE was elicited prior to implementation of a formal IPE curriculum involving both schools. Second, the researcher compared participants' understanding of IPE within and across the groups. For this research, IPE is defined as “when students

from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes” (WHO, 2010, p. 7).

The following research question guides this study:

How do students, faculty, and administrators at the IUSM (Indianapolis) and IUSN (Indianapolis) conceptualize and understand IPE?

In addition, the following sub-questions help direct this study:

- a. How do these individuals define and describe IPE?
- b. How are these groups’ understandings of IPE shaped?
- c. How do the groups’ perspectives of IPE differ or align?

### **Study Significance**

This research is significant, especially at IU, because the nursing and medical schools are in the midst of curricular reform. Stakeholders (students, faculty, and administrators) hold a place of power in curricular reform and their perceptions can help drive and guide curricular changes. Discovering how stakeholders understand IPE can mold and craft curricula as time progresses, increase the likelihood of developing a successful new curriculum, and prompt ongoing conversations, thought, and reflection about IPE. If stakeholders’ background knowledge and perceptions of IPE are known, a premise for IPE can be established and educational institutions such as IU can build upon this foundation. This information can influence how institutions approach health professions education and can apply to IPE initiatives at other IU campuses. In turn, this may lead to a more successful and informed IPE curriculum in the first years of implementation. And, hopefully what is learned through IPE will be translated into healthcare practice environments.

## **Definitions and Key Terms**

Many different definitions and interpretations of IPE exist in the literature (Olenick et al., 2010). This research employs the WHO's nationally and internationally accepted definition of IPE: "Interprofessional education occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes" (WHO, 2010, p. 7). Beyond the definition, Olenick et al. (2010) indicated that IPE includes certain attributes such as interactional learning experiences that are experiential, sharing of knowledge and principles, a patient-centered philosophy, and a "nonhierarchical" attitude (p. 77).

In addition to defining and describing IPE, it is also important to elucidate what IPE is not. Interprofessional education is not a passive pedagogy. It does not involve students seated in a lecture hall together without interacting, nor is it a faculty member from another profession talking to a group of learners without incorporating an interactive piece (Buring et al., 2009). Moreover, interprofessional does not equal 'multidisciplinary' or 'interdisciplinary' because these terms do not highlight the sharing process between and across disciplines that must be present with IPE. MacIntosh and McCormack (2001) clarified the difference between the prefixes multi- and inter-; 'multi-' refers to partners working individually toward a goal whereas 'inter-' infers that partners from different disciplines work together towards a shared goal. One can think of the concept as an orchestra. Interprofessional education is not the sum of each individual's contribution to the process, but rather each member of the orchestra (or team) is an integral part of the whole, and everyone must work together to produce a masterful overture (as cited in Olenick et al., 2009).

## **Organization of Dissertation**

Chapter 2 describes the theoretical framework used to guide this research, a more in-depth history of IPE, and literature that focuses on IPE perceptions, attitudes, and experiences. Following the literature review, Chapter 3 outlines the methods for this study. Chapter 4 presents the findings from interviews with students, clinical faculty, and administrators. Finally, Chapter 5 analyzes the findings, offers implications of the study, and presents suggestions for future research.

## **Chapter 2: Literature Review**

This research explores and compares how students, faculty, and administrators from the IUSM (Indianapolis) and the IUSN (Indianapolis) understand IPE. In this review, the researcher outlines the theories and literature guiding this study. First, this chapter provides the theoretical framework that serves as a sound backdrop for the research. Second, the researcher revisits the history, development, and trends in IPE to give a background perspective of IPE and its progression through the years. Finally, this review recapitulates and critiques the pertinent literature on faculty, administrators, and students' attitudes, experiences, and perceptions of IPE because these studies help inform the research questions and provide the groundwork for this study.

### **Theoretical Framework and Learning Theory**

Early publications within the field of IPE are largely atheoretical (Clark, 2006); however, within the last decade, theories and frameworks have surfaced in IPE literature (Hean et al., 2009). When developing IPE curricula and theories that relate to curriculum development, the individual, the organization and institution, and the socio-cultural and political levels are important considerations (Oandasan & Reeves, 2005b). D'Amour and Oandasan (2005) developed a framework that not only captures these elements, but also stresses the relationships between each one of them. This theoretical framework focuses on the recently developed concept of *interprofessionalism* and serves as the theoretical framework for this study. In addition to the aforementioned theoretical framework, this study uses social constructivism and socio-cultural learning to guide the understanding of how participants learn and build knowledge from their surrounding environment.

As a result of research completed for Health Canada (Oandasan et al., 2004), D'Amour and Oandasan (2004; 2005) developed an emerging framework in the field of IPE called "Interprofessional Education for Collaborative Patient-centred Practice: An Evolving Framework" that highlights the concept of *interprofessionalism*. Not only is *interprofessionalism* a new concept in the field of IPE, it is also the first term and notion that explicitly emphasizes the interconnectedness of IPE and interprofessional practice (IPP) and the factors that influence them. For the purposes of this study, the researcher embraces D'Amour and Oandasan's definition of interprofessionalism that states, "Interprofessionalism concerns the processes and determinants that influence interprofessional education initiatives as well as determinants and processes inherent to interprofessional collaboration. Interprofessionalism also involves analysis of the linkages between these two spheres of activity" (2005, p. 8).

In this framework there are two interrelated concepts represented by circles, one for IPE, which this research focuses on, and the other for interprofessional collaborative practice (see Figure 1). In the IPE circle, the learner and educators reside at the center and are reciprocally connected via bi-directional arrows. The key element to the IPE circle is that the bi-directional arrows portray that learners' and educators' understanding of IPE and IPP is shared, formulated, and refined through learner-educator interactions (D'Amour & Oandasan, 2005). The learners and educators are also connected to micro, meso, and macro factors that impact the learner's capability to provide collaborative patient-centered practice. The micro (teaching) factor focuses on the context of the learning environment, how collaboration is taught, faculty development in IPE, and faculty perceptions about collaboration. The meso (institutional) factor includes

leadership and administrative processes influential in accelerating IPE efforts. The macro (systemic) factor includes the larger bodies that influence the meso and micro factors such as accreditation and regulatory bodies, the institution, and federal and state government legislature and policy (D'Amour & Oandasan, 2005). Research and evaluation are positioned at the foundation of this framework. Arrows connecting research to the IPE and interprofessional collaborative practice circles illustrate the feedback nature of the framework and that not only does research guide IPE and interprofessional collaborative practice, but IPE and interprofessional collaborative practice inform research. In summary, this framework is important for this research because it specifies that learners, educators, and administration are critical elements of *interprofessionalism* and are strongly interconnected and influential in the development and implementation of IPE (D'Amour & Oandasan, 2005). These specifics are the impetus behind including students, faculty, and administrators in this research.

In addition to the framework on *interprofessionalism*, social constructivism is often a theory linked to curriculum development and IPE (Hean et al., 2009). This theory serves as a guide for understanding the process of learning through an individual's interactions with the environment (Hean et al., 2012). Although social constructivism remains relevant and applicable to IPE, some argue that it only focuses on the individual (micro) level rather than focusing on the system and socio-cultural (macro) level (Hean et al., 2009). However, socio-cultural learning, a branch of social constructivism, transcends the individual and emphasizes the social and organizational aspects of IPE (Hean et al., 2009). In socio-cultural learning, Vygotsky (1978) introduced the following concept of the zone of proximal development (ZPD): "The ZPD is the difference between what a

student can learn alone and what they can learn with the assistance of an external other” such as the organization or community, a student from another profession, or an IPE facilitator (Hean et al., 2009, p. 256). This notion closely relates to the idea of scaffolding, where students build on previous knowledge and complete more complex tasks with the help of others in the environment (D’Eon, 2005). Once knowledge and skills are acquired, the ‘scaffolding’ can be removed and the learner becomes more independent (Lewis, 2011). Social constructivism and socio-cultural learning is reflected in the definition of IPE. The idea that IPE requires students to learn about, from, and with each other (WHO, 2010) necessitates that the learner interact with other learners and the environment (Hean et al., 2009). This theory asserts that participants’ understanding of IPE is important to describe because it provides the initial ‘scaffolding’ of which learners can build upon as they progress through an IPE curriculum. In addition, social constructivism stresses that interactions with the environment and surrounding people help construct reality; these interactions are the basis of IPE.

### **History, Development, and Trends in IPE**

Much of the current IPE literature is descriptive and narrative, however it contributes to the understanding of the origins and development of IPE. With the progression of time, IPE has grown, and the literature is a testament to how IPE began, how it has evolved, and what the future holds.

Although IPE remains a trendy topic in today’s healthcare education, it is not a new initiative (Bennett, 2011). Several countries, including Canada, Australia, Nordic countries, and the United Kingdom (UK), have been trailblazers in IPE (Wilhelmsson, Ponzer, Dahlgren, Timpka, & Faresjo, 2011). Interprofessional education stemmed from



concerns about care quality, patient safety (Olenick et al., 2010), and strained relationships between healthcare providers (Anderson et al., 2011; Ryan & McKenna, 1994). One of the earliest references of collaboration in the health fields can be traced to the 1940's when the U.S. was in the midst of war (Baldwin, 1996). At that time, collaboration was based on a need, the urgency to work together to deliver care at home and on the warfront. This period marked the beginning of a broader delivery of care and education. Other early accounts of IPE occurred during the 1960's in the UK (Barr, 2010; Le et al., 2008), where greater emphasis was placed on primary care practice and teamwork among health professionals.

Throughout the 1960's, the nurse-physician relationship was at the forefront of healthcare dialogue. In a historical narrative piece, Stein (1967) described how the nurse-physician relationship could be equated to a game. Stein described this 'game' as equilibrium between nurses and physicians. The nurse gave care suggestions to the physician without sounding like she was making a recommendation, and the physician asked for care suggestions from the nurse without blatantly stating this. If the rules of the game were not abided by, unsatisfactory care ensued. During this time, the hierarchy in healthcare was palpable (Patronis Jones, 1994) and in an effort to reduce the tensions associated with the nurse-physician relationship, two organizations, the American Nurses Association and the American Medical Association, formed the National Joint Practice Commission (Fagin, 1992). However, after 10 years of working together to improve the nurse/physician dynamic, an increase in the nurses' roles and compensation caused the American Medical Association to back out of the National Joint Practice Commission (Fagin, 1992).

Shortly after the creation of the National Joint Practice Commission, the Institute of Medicine (IOM) organized its first national conference that emphasized education of students in healthcare fields (IOM, 1972). At this conference, leaders in healthcare professions discussed the need for team-based and interdisciplinary education. Although the term IPE was not used at this time, these health professions leaders were ultimately discussing the fundamentals of IPE.

As time progressed, more national and international organizations began advocating for IPE. Following the IOM, committee members at a WHO international conference on primary healthcare recommended that training of healthcare professionals, specifically nurses and physicians, should center on more community and primary care-based education (WHO, 1978). This recommendation echoes the aforementioned attention to primary care practice in the UK during the 1960's (Barr, 2010). Ten years after the WHO international conference, a publication on multiprofessional education underlined how multiprofessional education should be a chief component of health professions education because it prepares health professions students to meet needs of the healthcare community (WHO, 1988). Throughout the 1980's, IPE became more nationally and internationally recognized. At this time, scholarly research on IPE surfaced and the Journal of Interprofessional Care published its inaugural issue (Buring et al., 2009). The establishment of the Center for the Advancement of Interprofessional Education (CAIPE) in 1987 also encouraged the advancement of IPE efforts in the UK and elsewhere (CAIPE, 2012).

In the 1990's, Blickensderfer (1996) wrote that tensions across professions persisted and stemmed from conflicts in roles, communication, and goals, as well as

differences in education and pay. The nurse-physician relationship remained a ‘game’ despite the improvements in health professions education and the advancements in collaborative practice. Twenty years after Stein’s initial paper, Stein, Watts, and Howell (1990) reevaluated the nurse-physician game and noted that it was still alive, but consisted of different dynamics. The authors stated that the nurse no longer willingly participated in the game, but rather advocated for more equal nurse-physician relationships (Stein, Watts, & Howell, 1990).

At this point in history, IPE had been considered, explored, and developed; the health professions were catching on. Barr (2010) discussed these changes:

The turn of the century was a watershed. Interprofessional education was no longer marginal; it was entering the mainstream of professional education. No longer confined to post-experience studies; it was being embedded in pre-registration programmes. No longer dealing in penny numbers; it was catering for student intakes counted in thousands. No longer bottom-up; it was top-down.... No longer passing fashion; it was here to stay. (p. 297)

In a landmark report by IOM, *Crossing the Quality Chasm: A New Health System for the 21<sup>st</sup> Century*, one of the suggestions for revamping the health system was to improve health professions education by providing more opportunities for interprofessional interactions (IOM, 2001). To revisit the recommendations from this report, the IOM held a summit dedicated to discussions about IPE. In 2003, individuals at the *Health Professions Education: A Bridge to Equality* summit developed five core competencies for health professions. These competencies underlined the importance of quality of care, communication, team-based care, patient-centered care, and evidence-based practice (IOM, 2003). Eight years later, six of the Interprofessional Education Collaborative (IPEC) organizations—the American Association of Colleges of Nursing, the American

Association of Colleges of Osteopathic Medicine, the Association of American Medical Colleges, the American Association of Colleges of Pharmacy, the American Dental Education Association, and the Association of Schools of Public Health—joined together to form an expert panel to discuss IPE and collaborative practice (Interprofessional Education Collaborative Expert Panel, 2011). Leaders from this expert panel created the *Core Competencies for Interprofessional Collaborative Practice*. This landmark document outlines four competency domains, each with several sub-competencies that transform into specific learning objectives and incorporate into a curriculum. The four competency domains, Values/Ethics for Interprofessional Practice, Roles/Responsibilities, Interprofessional Communication, and Teams and Teamwork are meant to stimulate conversations on IPE, synchronize IPE efforts around the country, and guide the establishment and dissemination of IPE curricula (Interprofessional Education Collaborative Expert Panel, 2011). These competency domains serve as a catalyst for health professions and organizations to take action with IPE.

Today, accreditation and professional organizations remain active about including IPE into guidelines and standards. Accreditation and professional organizations for pharmacy, nursing, dentistry, medicine, physical therapy, and allied health mention collaboration and teamwork within their standards. Furthermore, both the Accreditation Council for Pharmacy Education (ACPE) and the American Association of Colleges of Nurses (AACN) specifically state guidelines and essentials for IPE (ACPE, 2011; AACN, 2008). One of the AACN's nine essentials for baccalaureate education, the "Interprofessional Communication and Collaboration for Improving Patient Health Outcomes" is dedicated to IPE and states that baccalaureate programs must prepare

students for communicating, collaborating, negotiating, working as a team member, understanding roles of nurses and other professions, and advocating for patients in the care setting (AACN, 2008). Although medicine does specify guidelines for IPE, the Liaison Committee on Medical Education (LCME) suggests that students communicate and interact with students from other professions during medical education, but faculty are responsible for setting standards regarding IPE (LCME, 2012).

Although IPE is more commonly found in Canada and the UK (Olenick et al., 2010), accreditation standards and recommendations from professional organizations in the U.S. have led to the emergence of more IPE curricula. Schools such as the University of Minnesota, University of Colorado, Johns Hopkins University, and others actively integrated IPE into curricula via formal and informal programming, courses, projects, and activities (Josiah Macy Jr. Foundation, 2010).

The University of Minnesota has more than a 35-year history of IPE and is a model institution for IPE. Interprofessional education programming emphasizing teamwork and collaboration has been a constituent of the school since 1970. In 1970, students founded the Center for Health Interprofessional Programs (CHIP) in order to promote student and faculty interactions and collaboration (CHIP, 2012). In 2006, the Center for Interprofessional Education (CIPE) was created and currently upholds an IPE curriculum for health professions students (CIPE, 2012) that orients them to IPE and provides opportunities for students to take courses on IPE and practice with individuals from other fields in authentic settings (1Health, 2012).

The University of Colorado's Realizing Educational Advancement for Collaborative Health (REACH) program focuses on improving patient care through IPE

(REACH, 2012). Modeled after Thomas Jefferson University's program, students from different disciplines pair with a Health Mentor (i.e., a person who has a chronic illness or disability). Using a patient-centered approach, the student team and the Health Mentor work together on patient goals while also learning about teamwork, roles, and communication.

In the early 2000's, 12 U.S. teaching hospitals, such as Johns Hopkins University Hospital and the University of Minnesota Health System, participated in a large quality improvement program, Achieving Competence Today (ACT), designed to encourage learners from nursing, medicine, pharmacy, healthcare administration, and physical therapy to consider ways to improve the hospital and healthcare system (Barnsteiner et al., 2007; Ladden et al., 2006). Two follow up programs, Achieving Competency Today II (ACT II) and ACT III, were designed as interprofessional quality improvement programs. Within these programs, students learned about the healthcare system, financing, and the organization of the hospital, and then applied their knowledge by completing a quality improvement project at the end of four weeks. Yedidia and Gillespie (2007) published a final report on the ACT program that states that interprofessional collaboration was essential for quality improvement in hospitals. Learners also voiced that through the ACT program, they established trust among other professionals and recognized the limitations of patient care under one discipline.

More than 70 years since the first discussions regarding interprofessional work and collaboration, IPE remains a distinctive topic in healthcare literature. The incorporation of IPE into some schools' health professions education has led to research

on IPE programs, curricula, and experiences. The following section reviews the relevant literature related to attitudes, perceptions, and experiences with IPE.

### **Understanding of IPE in the Health Fields**

Although much of the literature on IPE is editorial, few research-based studies exist that provide specifics regarding perceptions, attitudes, and experiences related to IPE. This body of literature can be grouped into two sections. The first section encompasses Faculty and Administrators' Understanding of IPE, and the second segment entails Students' Understanding of IPE. These studies link to this research; however, with the exception of a few studies (Bennett et al., 2011; Horsburgh, Lamdin & Williamson, 2001; Rafter et al., 2006), most do not capture the faculty, administrator, or student perceptions prior to IPE implementation. Most of these studies assess attitudes, perceptions or experiences related to an IPE intervention (such as Dillon, Noble, & Kaplan, 2009) or to a pre-existing IPE curriculum woven through academic years (such as Curran, Sharpe, Flynn, & Button, 2010).

**Faculty and administrators' understanding of IPE.** While much of the literature on non-student perceptions of IPE relates to faculty, there are few articles on administrators' understanding of IPE. Some of the studies on faculty may include administrators, but the articles remain unclear. The literature on faculty understanding of IPE can be grouped into two categories, perceived challenges associated with IPE and benefits and possibilities accompanying IPE. This section reveals faculty and administrators' views on the challenges and potential benefits of IPE.

Faculty and administrators' perceived challenges with IPE center on implementation and personal perceptions. One of the biggest challenges reported with

IPE implementation is logistics. Through a survey distributed to administrators, Curran and colleagues discovered that of those who responded, nearly one-half strongly agreed that scheduling was a barrier to IPE implementation and one-third strongly agreed that classroom sizes created a potential obstacle (Curran, Deacon, & Fleet, 2005). Through interviews with administrators from dentistry, medicine, nursing, pharmacy, public health, and social work, Rafter et al. (2006), like Curran et al. (2005), found that the biggest challenge to implementing IPE related to timing and scheduling. The administrators also mentioned that different schools resided in different locations, which makes it difficult to assemble interprofessional groups of students together. Interprofessional education can create financial strains as well, especially with lack of support from administrators and faculty (Rafter et al., 2006). Logistics related to accreditation can also complicate IPE implementation. In another qualitative study that collected data via interviews and post-interview workshops, Bennett et al. (2011) discovered that faculty considered accreditation challenges as a pertinent issue because each profession requires different standards that need to be adhered to.

Along with logistical challenges, attitudinal and personal barriers may impede successful implementation of IPE programs or curricula. Some faculty may feel reluctant or unsure about facilitating IPE because of its unique challenges. Bennett et al. (2011) learned that because of unwilling or hesitant faculty, executive leadership was necessary to get schools to participate in IPE. Other studies echo this issue regarding reluctant faculty. Margalit et al. (2009) researched faculty and student perceptions of an 'IPE day.' One faculty member from this cohort voiced initial hesitance about facilitating IPE because s/he felt unprepared. Forte and Fowler (2009) discovered through focus groups



that staff had difficulty creating educational cases that involved multiple professions. They found they had to adjust his/her teaching because they were no longer teaching a uni-professional group, but rather an interprofessional group of students. In a case study, Lindqvist and Reeves (2007) explored facilitators' IPE perceptions through a focus group interview (n=13) and/or a follow-up interview (n=6). These focus groups revealed that most faculty members felt uncertain about facilitating in the interprofessional learning program because they were unaware of how to perform facilitator duties. They found it difficult to recognize whether they should intervene in the students' conversations or let them continue (Lindqvist & Reeves, 2007). In addition to faculty hesitance, faculty felt that students were unconvinced about the need for interprofessional learning (Lindqvist & Reeves, 2007).

Despite the barriers and challenges associated with IPE, faculty and administrators have reported benefits with regard to IPE's potential for the future. Faculty and administrators reported that IPE affords them the opportunity to communicate with other professionals, expands topics of learning, and engages students. To combat the initial hesitance and uncertainty that can parallel IPE, faculty felt it was necessary to have an orientation prior to an IPE intervention (Lindqvist & Reeves, 2007; Margalit et al., 2009). Lindqvist and Reeves discovered that facilitators for interprofessional cases also felt it was important to organize debriefing sessions for facilitators to gain foundational knowledge about interprofessional learning, talk about IPE experiences, and develop relationships with other facilitators. Like the facilitators in the Lindqvist and Reeves (2007) study, the faculty from Bennett et al.'s (2001) study mentioned that IPE affords them opportunities to openly communicate with other colleagues. Faculty from Forte and

Fowler's (2009) research spoke of the IPE experience in a similar way. Faculty mentioned that they felt more aware of other professional groups and more comfortable talking with others from different professions (Forte & Fowler, 2009). Along with networking and learning about other professionals, IPE presents the opportunity to engage in new or revised learning topics and modalities. Interprofessional education offers an opportunity to integrate new technology into teaching, merge healthcare teaching topics, and generate additional clinical sites and assignments (Bennett et al., 2011). Administrators stated that specific healthcare teaching topics such as communication, professionalism, and ethics may be best suited for IPE (Rafter et al., 2006).

Lastly, IPE can change the learning environment to one that is more student-centered and team-focused. Facilitators from Lindqvist & Reeves' (2007) research noticed how students practiced more as a team as the IPE case evolved. Similarly, after the 'IPE day,' faculty from Margalit et al.'s (2009) study agreed that students appeared more engaged and interactive with one another and worked well as a team.

Although the literature on faculty and administrators' understanding of IPE gives an overview of their experiences, views, and perceptions, this body of literature is missing a few key components. Some of the literature lumps the perceptions of faculty from different professions into one and is not explicit about which fields the faculty or administrators come from, or if by including faculty, they are also including administrators. The researcher found no research that differentiates faculty and administrators' understanding of IPE based on profession. In addition, most of the

literature explores experiences with a currently existing IPE unit or curricula rather than faculty and administrators' understanding of IPE prior to IPE implementation.

**Students' understanding of IPE.** Most of the research on IPE in the health professions relates to students. The literature can be grouped into student perspectives of shared learning and collaboration and differences and similarities in these views. With few exceptions (see Coster et al., 2008; Pollard, Miers, Gilchrist, & Sayers, 2006), student perceptions and experiences with IPE tend to be positive, and their attitudes toward shared learning increase over time. The research on student perceptions of IPE includes studies where data collection occurred before an IPE intervention (Horsburgh et al., 2001) or after (Wilhelmsson et al., 2011). Additionally, two of these studies utilize a pre/post test model (Dillon et al., 2009; Margalit et al., 2009), while a few are longitudinal in nature (Coster et al., 2008; Curran et al., 2010; Earland, Gilchrist, McFarland, & Harrison, 2011; Pollard et al., 2006). Most of the research on students' attitudes and perceptions of IPE utilize quantitative methods (Coster et al., 2008; Curran, Sharpe, Forristall, & Flynn, 2008; Curran, Sharpe, Flynn, & Button, 2010; Dillon et al., 2009; Horsburgh et al., 2001; Pollard et al., 2006; Wilhelmsson et al., 2011).

When assessing attitudes, perceptions, experiences, or readiness for interprofessional education, many quantitative tools have been utilized. However, in a comprehensive literature review on quantitative evaluations of IPE, Thannhauser, Russell-Mayhew, and Scott (2010) noted that most quantitative evaluation tools for IPE lack information needed for future studies and are not rooted in theory. The Readiness for Interprofessional Learning Scale (RIPLS) (Parsell & Bligh, 1999) is a 19-question reliable and validated tool that remains one of the most utilized and recognized in IPE

research. The RIPLS questionnaire developed by Parsell and Bligh (1999) assesses a student's readiness for shared learning. Each RIPLS question falls into one of three categories: Collaboration and Teamwork, Professional Identity, and Roles and Responsibilities. Since the inception of the RIPLS questionnaire, several scholars modified the tool to make it more appropriate for the participants sampled (for example, Curran et al., 2008; Margalit et al., 2009), and it has been administered to many health professions students.

Similar to the literature on faculty, most of the literature on students reports positive perceptions and experiences with IPE and shared learning. In a longitudinal study assessing shared learning and attitudes about teamwork, Curran et al. (2010) administered a 15-question modified version of the RIPLS tool to nursing, medical, social work, and pharmacy students throughout an IPE curriculum. Although the RIPLS scores did not increase significantly over time, with the exception of social work students, each profession's mean RIPLS score was higher at the end of a three-year period, indicating students' positive attitudes towards IPE over the duration of the study. These findings support Curran et al.'s (2008) findings from a preceding study in that students generally reported positive perceptions of IPE. Students from pharmacy, medicine, nursing, dentistry, allied health, and public health who participated took a modified version of the RIPLS tool (McFayden et al., 2005) prior to and after an 'IPE day' and had similar reactions to the curriculum (Margalit et al., 2009). With the exception of a couple of items on the RIPLS survey, most students reported positive attitudes about IPE prior to the IPE day, and most students conveyed increased positive attitudes following the IPE day. Horsburgh and colleagues (2001) administered the RIPLS tool to medical, nursing,

and pharmacy students (N=180) prior to their exposure to IPE. Similar to Curran et al. (2008), Curran et al. (2010), Horsburgh et al. (2001), and Margalit et al.'s (2009) findings, the students reported positive attitudes about teamwork and collaboration and shared learning.

Branching away from the RIPLS questionnaire, Earland et al. (2011) took a quantitative and qualitative approach to studying dietetics students' experiences and perceptions of three IPE modules. Students from dietetics, physiotherapy, occupational therapy, nursing, and midwifery participated in the IPE modules over their four-year academic careers. A questionnaire designed to assess students' thoughts of the IPE module revealed that students generally felt more satisfied with the IPE module as time progressed. Although this questionnaire was not the RIPLS tool, the findings in Earland et al.'s study parallel other studies in that the students had positive views of IPE (Curran et al., 2008; Horsburgh et al., 2001) and their views were more positive as they progressed through an IPE activity or module (Margalit et al., 2009). In addition to the questionnaire, a focus group with six dietetics students revealed that the IPE modules allowed students to consider their roles and the role of other health professionals and enabled students to feel more comfortable talking with other professionals.

Despite most studies reporting positive views of IPE over time, Coster et al. (2008) and Pollard et al. (2006) found the opposite. In Coster et al.'s (2008) study, nursing, midwifery, dentistry, medical, physiotherapy, pharmacy, dietetics, and occupational therapy students were administered the RIPLS tool over a four-year period. Although the RIPLS scores for the last year were relatively high (range: 66.71–78.16 on a 95 point scale), all mean RIPLS scores were lower at the end of the fourth year.

Additionally, with the exception of nursing, dietetics, and pharmacy, the overall change in students RIPLS scores were *significantly* lower at the end of the four-year period than the initial scores in year one (Coster et al., 2008). Like Coster et al., Pollard et al. (2006) conducted a longitudinal study with health professions students who participated in an IPE curriculum. Students completed questionnaires at four points in their academic careers. Pollard and colleagues learned that the students' perceptions of IPE and interprofessional interactions became more negative over time. The authors from these studies stated that the findings might be attributed to the longitudinal nature of the study (Coster et al., 2008) or the high amount of enthusiasm students have for IPE upon entry into their academic careers (Pollard et al., 2006).

In addition to the research on student perceptions and experiences with IPE, some of the literature notes differences and similarities among professions in regards to IPE. Overall, medical students had lower average RIPLS scores (Coster et al., 2008; Curran et al., 2008) and lower scores on collaboration (Dillon et al., 2009). Although Coster et al. (2008) were not looking at specific differences in RIPLS scores between professions, nursing students reported higher average RIPLS scores than medical students at year one and year four (year two and three data not shown). Similar to Coster et al., Curran et al. (2008) found that the mean RIPLS score for medical students was significantly lower than for nursing students. In addition, the medical students' average scores were significantly lower than pharmacy and social work students' scores. In the follow up study, Curran et al. (2010), discovered that medical students had significantly lower attitudes about IPE than students in the other professions. This finding echoes the previous study's outcomes. Curran and colleagues (2008) also administered a tool to

assess attitudes towards interprofessional healthcare teams. Despite significant differences among professions in regard to shared learning, nursing and medical students did not report significant differences in their attitudes towards interprofessional teamwork (Curran et al., 2008). When asked about roles and responsibilities, significant differences among medical, nursing, and pharmacy students existed (Horsburgh et al., 2001). Medical students, more than nursing and pharmacy students, reported that the role of the nurse and pharmacist was to be an assistant to the doctor. Additionally, more medical students than nursing and pharmacy students were unsure of their future role as a professional and believed that they had to learn more than other health professional students (Horsburgh et al., 2001).

Nursing students tend to have more positive attitudes of shared learning than medical students, but overall, it is safe to say that most students in the health professions fields studied report positive attitudes about IPE. Although widely used and validated, the RIPLS tool may not be able to capture factors such as a student's personality, attitudes, or willingness to work in a team (Wilhelmsson et al., 2011) or values and ethics that may be more suitable for qualitative methods. There is no doubt that the tool can guide approaches to IPE implementation and improvement, however, a need for more qualitative input from students regarding their understanding of IPE exists. Although some studies administered the RIPLS prior to implementation of an IPE curriculum, few studies focus on students' understanding of IPE prior to implementation.

### **Summary of the Literature Review**

To conclude, while the studies described in this literature review have connections with the current study, after reviewing and critiquing these articles, clearly, a critical gap

exists in the research that suggests routes for more extensive exploration. It is important to revisit some of these gaps in the literature, as they helped steer the current research and mold the research questions and method in this study.

In sum, most studies in this review had varying definitions or no guiding definition of IPE, which is a common problem in the field (Thannhauser et al., 2010). Many of these studies included stakeholders from various schools in the health professions; however, perceptions of faculty from different professions were grouped together, very few authors explicitly stated they were researching administrators' views of IPE, and administrators may or may not have been grouped with faculty. In addition, few of the studies in this literature review directly compared IPE perceptions, views, or experiences of groups of people in the health professions. The researcher did not find any studies that compared IPE perspectives for faculty from different professions. Additionally, the researcher did not find any studies that compared faculty experiences to student experiences. In particular, no studies employ a qualitative cross-case analysis of groups of people from different healthcare professions. Importantly, most of the studies gathered perceptions and experiences after an IPE implementation rather than researching how students, faculty, and administrators understand and conceptualize IPE prior to implementation. Although the IPE literature contains gaps, these gaps guided the chosen method for this research.

This study fills the gaps in the current literature by exploring and comparing how students, faculty, and administrators at the IUSM (Indianapolis) and the IUSN (Indianapolis) understand IPE at the pre-implementation phase. The following chapter presents the method for this study.



## Chapter 3: Method

### Study Design

A qualitative study design, with its emphasis on capturing the complex dimensions of phenomena, allows the researcher to fully explore how stakeholders (students, clinical faculty, and administrators) understand IPE. In order to capture and describe the diverse ways in which stakeholders at the IUSM and the IUSN conceptualize IPE, the researcher collected data through interviews and document analysis; reflected continuously on the data; focused on the participants' meaning-making in order to develop a comprehensive picture of their understanding of IPE; and analyzed and expanded upon the findings to illuminate their importance. This research did not explore how students, faculty, and administrators like or dislike IPE using scaled ratings; instead, it focused on what IPE "means" to these groups and how these groups come to understand or not understand it (Patton, 2002, p. 13).

This research utilized an embedded multiple-case study design (Yin, 2009). Embedded case studies employ "cases within a case" (Stake, 2008, p. 130) and increase the complexity of new understandings of the case or cases, highlight the intricacies within each case, and enrich analyses and conclusions (Yin, 2009). Case studies are appropriate when the research goal is to understand, expand experiences, and assure what is known (Stake, 1978). They are often used when researchers seek to answer "how" and "why" questions, when there is little control over the studied event, and when the focus is on a current issue (Yin, 2009). Case studies have been employed in a variety of disciplinary settings (Creswell, 2007), including medicine and nursing. A multiple-case study, often called a comparative case study, is a variation of the case study design that uses two or

more cases comprised of individuals, groups, programs, events, processes, or organizations (Yin, 2009). The major advantage of multiple-case studies is the increased likelihood of garnering diverse viewpoints and, therefore, more powerful inferences about the phenomenon (Merriam, 1998).

The researcher explored two primary cases bounded by time (3 months of data collection) and location (IU-Indianapolis campus) (Creswell, 2007) (see Figure 2). A group of individuals from the IUSM (Indianapolis) constituted the first primary case. The second primary case consisted of a group of individuals from the IUSN (Indianapolis). Each primary case included multiple embedded cases consisting of students, clinical faculty, and administrators that served as subunits of analysis (Yin, 2009).

### **Positionality and Researcher Stance**

My interest in IPE stems from personal experiences. I worked as an intensive care nurse after my undergraduate studies and recognize the importance of teamwork, shared decision-making, and collaboration among health professionals. Reflecting on my own experiences as a nurse made me realize that I needed more opportunities in my education to better prepare me for the complex and sometimes complicated relationships that exist among healthcare professionals in the patient care setting.

In addition to my personal experiences, I participated in two interprofessional working committees at IU that were instrumental in promoting IPE and driving forces behind planning IPE implementation. One of these committees was spearheaded by the IUSM and the other was directed by the IUSN. I also participated in a planning committee for a University of Toronto workshop on faculty development in IPE and attended their IPE workshop. The workshop centered on the IPEC Core Competencies for

Interprofessional Collaborative Practice and focused on faculty development in IPE, implementation strategies, and IPE evaluation (ehpic, 2012).

In addition to my personal experiences that influenced this research, the foundation of the study design is based on my beliefs. I viewed this research through a social constructivist lens and worldview. This lens guided the methodological choices I made when approaching this study. First, social constructivism conveys that individuals construct meaning through experiences and interactions with the surrounding environment (Creswell, 2009; Patton, 2002; Stake, 1995). Hence, “multiple realities” exist and individuals may view a phenomenon in various ways (Denzin & Lincoln, 2008, p. 32). For this reason, I chose to elicit conceptualizations of IPE from a variety of individuals with different roles (i.e., students, clinical faculty, and administrators), and in different schools and departments because I believe individuals in each case and/or embedded case possess unique and equally important conceptualizations of IPE. This is one of the primary reasons I conducted a multiple-case study—to describe and compare the multiple ways IPE is understood and conceptualized for the groups in the two primary cases and embedded cases. Second, when conducting research through a social constructivist lens, the researcher tries to understand how views are shaped, asks open-ended questions, and seeks out the historical and cultural context of the situation (Creswell, 2007; 2009). This lens directed the choices I made in regard to the research questions, specifically the question concerning how participants’ understanding of IPE is shaped. It also supports the use of the open-ended questions I posed during the interviews. In addition, in order to better understand the cultural and historical background of individuals, I asked questions about participants’ experiences and the

context in which they have either heard about IPE or experienced IPE. Third, the social constructivist understands that personal experiences influence research (Creswell, 2009). For this reason, I am transparent about my experiences and personal interests that relate to this study and recognize that my background influences the interpretation and analysis of the data.

### **Recruitment and Sampling**

The researcher deliberately selected the site, schools, and participants. As previously mentioned, both the IUSM and the IUSN are undergoing curricular changes, and IPE remains at the forefront of these changes in both schools. Only data from students, clinical faculty, and administrators from the Indianapolis campus were collected because this site is unique in that it houses both a nursing and medical school. The researcher excluded individuals from satellite IU campuses because this would warrant an additional case, some of the outlying campuses do not house a nursing *and* medical school, and other campuses utilize different curricula.

The researcher began the selection process by pinpointing potential administrator participants after consulting with the dissertation committee and searching each school's websites to find individuals in executive leadership positions (e.g., deans and directors). In addition, the researcher held one-on-one conversations with a couple of administrators to explain the purpose of the study and ask about their interest in participation. The researcher also discussed potential faculty member participants with individuals from the dissertation committee. Members of the researcher's writing group also suggested faculty who could provide a unique perspective about IPE. In addition to administrators and clinical faculty, the researcher discussed the study's purpose with several medical and

nursing students in one-on-one conversations. To gain access to additional students, some of the already recruited administrators and faculty members served as “gatekeepers” for students (Creswell, 2007, p. 120), informing groups of students about this study and offering names of potential student participants.

Once the researcher identified several individuals, she chose to invite students at different levels (i.e., years 1-4 in the IUSM and semesters 3-8 in the IUSN), clinical faculty from a variety of departments and disciplines (i.e., IUSM: surgery, emergency medicine, internal medicine, surgery, and pediatrics; IUSN: adult health, environments for health, and family health), and administrators with assorted titles (titles withheld for anonymity of administrators). This type of purposeful sampling strategy, maximum variation sampling, necessitates that the researcher recruit individuals from different backgrounds and viewpoints (Creswell, 2007). Creswell (2007) states that maximum variation sampling is a preferred sampling strategy for case studies because it allows the researcher to obtain multiple perspectives.

The researcher invited 52 individuals to participate in this research through email or a one-on-one conversation. A recruitment email was sent to several IUSM and IUSN students, clinical faculty members, and administrators (see Appendix B). The recruitment email also served as a script for in-person recruitment conversations. If the researcher received no response from individuals after approximately two weeks, she resent the recruitment email. Thirty two individuals agreed to participate; however, four never responded to the researcher’s emails about scheduling an interview, two responded about scheduling after saturation was reached and interviews were completed, and one could not find time to schedule an interview.

Upon completion of each interview, the researcher asked all participants for names of additional individuals who might provide further insights regarding IPE. This type of purposeful sampling strategy, snowball sampling, helped the researcher locate individuals with rich information about IPE and also reach those she may have not accessed before. In keeping with the maximum variation sampling technique, the researcher also asked participants for names of individuals with different views and understandings of IPE than their own.

Because of snowball and maximum variation sampling, student, clinical faculty, and administrator recruitment and interviews occurred concurrently and continuously. This phase continued until data saturation was achieved. At this point, the researcher determined that interview information became sufficiently redundant and lacked conflicting data, indicating that no additional interviews were needed (Creswell, 2007).

### **Participants**

**Students.** The researcher included pre-licensure medical and nursing students (i.e., those without a license to practice independently) for this study because they are major stakeholders in the curriculum reform and development process (Bland et al., 2000), participate in IPE curricula, and are crucial to the overall success and sustainability of IPE. Students at both the pre-clinical and clinical phases of education participated. Students at different phases of education provide a more diverse view of IPE because they hold a broad spectrum of perspectives and, therefore, varying understandings of IPE. The four IUSM students consisted of individuals in their second (n=1), third (n=2), and fourth years (n=1). The five IUSN students consisted of individuals in their fourth (n=1), sixth (n=1), seventh (n=2), and eighth semesters (n=1).

**Clinical faculty and administrators.** The researcher included clinical faculty and administrators because their involvement remains key to IPE design and implementation. In addition, they play a vital role in the development and evaluation of IPE.

For this study, a clinical faculty member is one who directly oversees medical or nursing students during their clinical rotations. Clinical rotation environments include hospitals, clinics, or the simulation center. Only clinical faculty members, rather than basic science faculty members, were included in this research because clinical faculty may have greater exposure to IPP in the workplace, may have experienced IPE in the past, and work in a setting that employs multiple individuals from different health professions. The four IUSM clinical faculty members derived from the surgery, pediatrics, emergency medicine, and family medicine departments. The four IUSN clinical faculty members consisted of individuals from the department of adult health; however each individual oversees students in different clinical settings (e.g., critical care, medical surgical, simulation).

For the purpose of this study, administrators specifically refer to individuals in the IUSM and IUSN who hold executive leadership positions at each respective school (e.g., deans or directors). In addition to administrators' significant role in the IPE implementation process, they are included in this study because currently, a shortage of administrators support IPE, but top-level leadership remains crucial for successful IPE programs or curricula (Interprofessional Education Collaborative Expert Panel, 2011). To protect the identity of the administrators, their administrative duties remain private; however, their administrative roles varied widely across each school.

## Setting

**Indiana University School of Medicine.** The IUSM is the second largest medical school in the United States, with nine regional campuses and approximately 1300 students. Of these 1300 total students, approximately 875 study at the Indianapolis campus (Indiana University School of Medicine [IUSM], n.d.). Medical students matriculate after completing an undergraduate degree and all required prerequisites. The program spans four years; currently, the first two years are laden with didactic coursework and the last two years center on clinical patient care opportunities. The Indianapolis campus houses students all four years, and many students from the other campuses relocate to Indianapolis for their clinical rotations. During clinical years, students practice and participate in patient care under the supervision of a licensed physician. Currently, the IUSM sustains a competency-based curriculum, meaning that medical students must successfully fulfill all nine core competencies prior to earning their medical degree. The competencies not only center on scientific knowledge and skills (e.g. diagnostic and clinical skills), but also on non-cognitive skills such as life-long learning, self-awareness, and problem solving (IUSM, 2013). Again, the didactic and clinical curricula rarely offer IPE opportunities for medical students to interact and/or learn with nursing students.

In response to the Institute of Medicine's recommendation to restructure medical education to better prepare students for practice, many medical schools in the country, including the IUSM, are undergoing curricular reform. These IUSM revisions, designed to revamp all medical curricula, include measures to improve courses, enhance clinical rotation experiences, standardize courses across all IU medical campuses, and restructure



the four years of medical education (IUSM, 2012). The revision incorporates opportunities and placeholders for IPE at different times throughout the students' medical education, however the curricular blueprint does not specifically state how these IPE opportunities will ensue. The IUSM also intends to align proposed curricula with the Accreditation Council of Graduate Medical Education (ACGME) core competencies (i.e., core competencies for medical residencies) in which several of these competencies encompass topics related to IPE and IP practice. This reform process, complex and carefully managed, is nearing completion, with hopes to initiate the new curricula in the fall of 2014.

**Indiana University School of Nursing.** Like the IUSM, the IUSN has a substantial student population and is the largest nursing school in the country offering a range of degrees from the Bachelor of Science in Nursing to the Doctorate (i.e., PhD and DNP) degrees (Indiana University-Purdue University Indianapolis, 2013). With three core campuses, the IUSN-Indianapolis campus houses around 85 full-time faculty members and more than 800 undergraduate students. Qualified students matriculate into the IUSN during the third semester of undergraduate education. Students with prior undergraduate degrees wishing to earn a nursing degree also enter at the third semester once they complete prerequisites. The third semester, reserved for didactic coursework and no patient care, is followed by the fourth through eighth semesters that include both didactic coursework and clinical rotations. During clinical rotations, students practice patient care in the community, clinic, and hospital settings and experience a wide array of opportunities to provide care to diverse patient populations. As previously mentioned, at present, the nursing and medical students have rare opportunities to engage in IPE,

therefore coursework and patient care as a student nurse is largely separate from medicine.

In reference to curricular revision, the IUSN administrators developed a draft of future curricular endeavors. Guided by accreditation standards and visionaries within the school, the nursing administration and faculty created a blueprint for future nursing curricula. This blueprint includes IPE and other curricular revisions and additions. The school hopes to launch the revised curriculum in the fall of 2013, pending approval by the university and nursing school.

In addition to curricular revisions within the school, some nursing faculty and administrators have also been involved with curricular changes at the IUSM. The IUSM invited individuals from the IUSN and other health professions schools to join them in revising medical curricula. One of the IUSM curricular committees, devoted to IPE, influenced and pushed for IPE curricular efforts across several schools.

### **Data Collection**

Case study research is investigated through the collection of more than one type of data (Creswell, 2009; Yin, 2009). Various forms of data allow for exploration of a broad range of perceptions about IPE from different points of view. Data collection included the examination of discipline-specific public documents and one-on-one interviews with students, clinical faculty, and administrators from each case (see Appendix C). The researcher examined documents throughout the duration of the data collection period. Data collection occurred over three months until saturation was achieved (Creswell, 2007).

**Document analysis.** Because the current curriculum rarely allows students from each school to collaborate during their training, opportunities to observe these interactions are limited. Thus, document analysis served as a special data source that represents the IUSM's and IUSN's stance on IPE (Stake, 1995). Documents are valuable in case study research because they can validate and/or support information received from other sources (Yin, 2009). With the research questions in mind, the researcher examined the following documents from the IUSM and the IUSN for anything related to IPE: the schools' websites, IUSM curriculum competencies, curricular reform documents (e.g., curriculum outlines, proposed curricula), summary of IPE conference, white papers, and the announcement and accompanying description of the Center for Interprofessional Health Education and Practice (the Center). The researcher inspected documents for IPE-related material, then reviewed and analyzed them in order to investigate whether they verified or contradicted participants' understanding of IPE.

**Interviews.** The goal of the one-on-one interviews is to capture the "richness" of participants' understanding of IPE (Rubin & Rubin, 1995, p. 76). The researcher conducted 25 one-on-one interviews (i.e., 12 interviews with participants from the IUSM and 13 interviews with participants from the IUSN) (see Appendix C). Each interview lasted approximately 45–60 minutes and convened in various locations such as private offices, study rooms, and classrooms where the participant felt comfortable discussing his/her understanding of IPE. As suggested by Yin (2009), the researcher conducted focused (also called semi-structured) interviews (Merton, Fiske, & Kendall, 1990) that proceeded like a conversation, but abided by the interview protocol (see Appendix D). Prior to the interview, the researcher articulated that she and the participant were partners

in the interview process (Madison, 2012; Rubin & Rubin, 1995; Spradley, 1979). The researcher developed and established rapport with the participant by stating the purpose of the research prior to the interview, actively listening, and restating the interviewee's comments. Each participant was interviewed one time and the researcher compiled notes during each interview to capture non-verbal communication (e.g., gestures and body language) and/or emphasize a particular point as well as audio recorded the session to capture an accurate report of the interview (Yin, 2009). Immediately following the interviews, the researcher transcribed the interviews verbatim.

### **Data Organization and Analysis**

The researcher analyzed the data through a progression of steps that included data organization, reflection and review of collected data, interpretation, and representation of conclusions in writing (Creswell, 2007). Throughout data collection, all of the raw data collected was placed into a "case study database" that included notes from interviews, the researcher's written thoughts, transcriptions, and documents (Yin, 2009, p. 118). This allowed the researcher to return to the raw data for continual review or additional analysis and greatly improved the reliability of the case study (Yin, 2009). The case study database was separated from the research report and conclusions. In addition to the case study database, the researcher described in detail the setting and context of each case in order to provide the reader with a visual image of the cases (Creswell, 2007; Patton, 2002).

Staying true to qualitative study designs, the researcher used inductive analysis to build patterns and themes from "the ground up" using the data from participant interviews (Creswell, 2007, p. 19; Patton, 2002). Analysis of data occurred in a sequential

manner through the process of hand coding. Copies of each transcribed interview were reviewed repeatedly. Initially, the researcher read the transcriptions in order to obtain a general idea of the participants' meanings and conceptualizations of IPE. At this time, the researcher wrote notes on each transcription regarding thoughts and general ideas mentioned in the interview. Following initial review, the researcher progressively surfaced the essence of each transcription and further solidified themes of the transcription and expanded notes on the different cases. In order to arrive at conclusions, the researcher completed within-case and cross-case analysis (Yin, 2009) using principles adapted from Glaser and Strauss' (1967) constant comparative analysis. The basic tenet of constant comparative analysis holds that the researcher codes and compares data simultaneously (Glaser & Strauss, 1967). Analyses included coding, comparing codes, stopping for reflection, "reduction," and then repeating the steps until saturation was achieved (Glaser & Strauss, 1967, p. 110) (see Figure 3). Analysis consisted of the following phases (see Figure 4):

- Phase I (Within-case Analysis): The researcher analyzed the data from each case separately (both primary and embedded cases) (Creswell, 2009; Merriam, 1998). Once there were numerous codes for each primary and embedded case, coding stopped, and the researcher reflected on the codes and established a clear conception of the data. Coding and comparison resumed, and the researcher distilled or reduced the codes to better grasp the participants' understanding of IPE and uncovered themes in the data.
- Phase II (Cross-case Analysis, Part A): Using Glaser and Strauss' method described above, cross-case analysis followed, where codes and themes

extracted from the primary and embedded cases were compared to codes and themes from their counterparts in the other school.

- Phase III (Cross-case Analysis, Part B): Using Glaser and Strauss' method described above, codes and themes from the embedded cases within a primary case were compared to each other.

### **Ethics**

The IU Institutional Review Board (IRB) accepted this study as meeting the criteria of exempt research. Beyond IRB approval, the researcher recognizes the importance of remaining open and honest with the participants regarding the research's purpose, protocol, and potential impact (Madison, 2012). Therefore, prior to each interview and/or focus group, participants read the study information sheet outlining the voluntary nature of the study, their right to withdraw, and the study's purpose, procedures, and confidentiality statement (see Appendix A). To protect participants' privacy, the researcher assigned each individual an identification number and a pseudonym. In addition, identifiable information that surfaced during interviews or focus groups was changed (e.g., names, titles, places, or events that could reveal the identity of a participant).

### **Trustworthiness**

Trustworthiness, a fundamental precept of qualitative research, helps ensure the quality of the study and maintains that the researcher conveys data in a way that convinces the reader about the importance of the study's findings (Lincoln & Guba, 1985). Lincoln and Guba offer the following four ways to establish trustworthiness of a study: credibility, transferability, dependability, and confirmability.

In order to affirm credibility, the researcher immersed herself in the data collection process for a period of three months. Through prolonged engagement, she built trust among her participants, captured how participants from each case understand IPE, and established the contextual background of the IUSM and IUSN. In addition to prolonged engagement, triangulation also helps establish credibility and identifies similarities and discrepancies in participant perceptions (Patton, 2002). With source/data triangulation, researchers collect multiple sources of data in order to explore and compare a broad range of viewpoints (Patton, 2002; Yin, 2009).

In addition to using multiple sources of data, member checks followed data collection. This is a form of analyst triangulation (Patton, 2002) where participants from each case review the portions of the write-up of their data to ensure accurate representations and interpretations (Stake, 1995). For this study, member checking occurred informally and formally. Informal member checks took place during the interviews when the researcher asked participants to repeat statements, reiterated their statements, and verified that what she heard was accurate. Formal member checks transpired upon completion of the interviews when the researcher invited all participants to read a summary of the findings to ensure that what was heard and discovered during the interviews represented what was spoken. The participants from the IUSM and IUSN received a condensed version of the findings from their respective school. This document reflected a summative response from the group of participants, not a summary of each individual's interview. This formal member check allowed the participants to ask questions, make comments, and offer feedback to the researcher about the data. Ultimately, eight participants (IUSM: n=4; IUSN: n=4) responded to the formal member

check. If the participants responded with concerns or dispute about the findings, the researcher would have returned to data collection in order to gain a better understanding of how participants conceptualize IPE; however, participants who responded stated the summary of the findings from their school reflected ideas, stories, and experiences from his or her individual interview.

Finally, researcher credibility is imperative to establishing trustworthiness. Therefore, the researcher articulated her biases and personal connections to this research (Creswell, 2007) and recognizes that close ties to this research may influence the participants, the analysis, and the interpretation (Patton, 2002).

To confirm transferability the researcher used thick description, or writing that conveys the participants' voice and emotion about an experience, when reporting the findings of the research (Creswell, 2007). With all qualitative research, thick description is expected as it helps the reader better understand the setting in which the case resides and each participant's innermost feelings about his/her unique experiences.

In addition to credibility and transferability, auditing processes ensured dependability and confirmability. The auditor (i.e., the committee chair) oversees the research process and reviews the data, findings, and interpretations in order to ensure participants are accurately represented (Lincoln & Guba, 1985). The committee chair oversaw the entire research process and advised the researcher throughout the study. The chair helped establish, develop, and reorganize themes and also ensured that the findings and conclusions were corroborated by the data.



## **Limitations**

All research has limitations. Data collected and analysis cannot be generalized to every IUSM or IUSN in the state because this research was only conducted on the IU-Indianapolis campus. Furthermore, because data collection occurred at the researcher's home institution, this can pose a risk as the researcher may not seek varied viewpoints or appreciate the full scope of the participants' perceptions (Creswell, 2009). There are also limitations in the types of data collected. For example, public documents such as websites may be outdated or incomplete and, therefore, may provide an inaccurate representation of the cases (Patton, 2002). For this reason, the researcher revisited websites throughout data collection and analyzed the most recent and accurate documents for each case. Finally, the researcher's personal experiences can be a limitation to the research because they may create biases or influence the participants (Patton, 2002). The researcher minimized these limitations by maintaining a rigorous research protocol, disclosing personal biases, and collecting varied sources of data from multiple participants.

## Chapter 4: Findings

The following chapter presents the principal themes from interviews (N=25) with administrators, faculty, and students at the IU School of Medicine (IUSM) and the IU School of Nursing (IUSN). Through these interviews, the researcher sought to answer the following central and sub-questions:

- How do students, faculty, and administrators at the IUSM (Indianapolis) and IUSN (Indianapolis) conceptualize and understand interprofessional education (IPE)?
- How do these individuals define and describe IPE?
- How are these groups' understandings of IPE shaped?
- How do the groups' perspectives of IPE differ or align?

In order to provide background information, frame participants' conceptualizations of IPE, and explain the current state of IPE at IU, this chapter begins with a general contextual description of each primary case (i.e., the IUSM and the IUSN). Following this brief background, the chapter outlines and describes five themes that emerged from data collected during interviews with participants.

### General Contextual Background at IU

**Indiana University School of Medicine.** When interviewed, all of the IUSM stakeholders communicated their knowledge about upcoming medical curricular changes. However, in regards to IPE, interviewed medical administrators (n=4), faculty (n=4), and students (n=4) had differing understandings and familiarity with IPE. All interviewed administrators expressed familiarity with the term IPE and reported that IPE holds significance in upcoming curricular endeavors. Most of the interviewed medical faculty

members have heard of IPE and some discussed involvement in IPE efforts or curricular reform; however, one interviewed faculty member remained unaware of the term.

Additionally, none of the medical students had heard of IPE prior to interviews and only one of the medical students stated she had interacted with nursing students during her education. Therefore, dialogue during IUSM student interviews centered on concepts central to IPE such as teamwork, communication, and interactions with individuals from other professions.

**Indiana University School of Nursing.** Although nursing stakeholders conveyed awareness of the upcoming curricular changes within the school, interviewed nursing administrators (n=4), faculty (n=4), and students (n=5) had different levels of understanding of IPE. Each nursing administrator interviewed was well aware of IPE and deeply involved with IPE efforts at the IUSN. Also aware of the term IPE and its significance, nursing faculty participants had varied levels of involvement in IPE discussions and/or activities. Of the students interviewed, only one nursing student was familiar with the term IPE prior to the interview, but four of the five students experienced interactions with students from other professions. Because most students interviewed were unaware of its meaning, discussions centered on experiences in the classroom and/or clinical environment that relate to aspects of IPE (e.g. teams, collaboration, or interactive experiences in clinical situations).

**Current state of IPE at IU.** As previously mentioned, both the IUSM and the IUSN plan to implement new curricula in the next couple of years. Each school created placeholders for IPE and IPE is intentionally embedded into new curricula. Beyond the new curricula, recently, representatives from several health professions schools

developed a mission and vision statement centered on IPE. In addition to the mission and vision statement, a council of health professions deans approved a Center for Interprofessional Health Education and Practice (the Center). The purpose of the Center is to join individuals from many different professions in order to discuss, encourage, and assist with IPE implementation, faculty development in IPE, and IPE scholarly work. The Center will help facilitate IPE efforts at IU with the goal of better preparing health professions students for interprofessional practice (Indiana University Clinical Affairs Committee, 2013). Furthermore, other ongoing IPE efforts include campus-wide, national, and international collaborations with different schools and institutions.

### **Themes**

After repeatedly reading and reviewing the transcripts from participant interviews, principal themes emerged from the data and are presented below.

**Theme one: The business of medicine.** A common topic reported from the interviewed IUSM participants refers to the business of medicine and how it influences health professions education and practice (see Appendix E (1a)). The business of medicine theme concentrates on the IUSM participants' views about the complexity of medical education and practice and how they transpire at IU. It encompasses the gestalt of medicine and the, oftentimes, unspoken rules in education and practice. Throughout interviews, the IUSM participants stated that medical education and the business aspects of practice are conducted in a certain manner that does not necessarily embrace IPE. They also reported several aspects of the business of medicine evident in medical education and practice. First, participants spoke about how the institution professes the value of teamwork and education of future healthcare professionals, but a 'double-edged

sword' exists because there is a lack of reimbursement and reward for teamwork in education. Second, participants also discussed how the current state of medical education and practice remains in a 'that is how it has always been' state because of the well-established history, culture, power, and hierarchy that sustain the business of medicine.

*A double-edged sword.* The 'double-edged sword' theme title captures the notion that what is expected and emphasized in education and practice is not always rewarded. One sector of the business of medicine is the student admissions process. According to participants from the IUSM, students applying to medical school are not rewarded for team efforts. Although these students' involvement in experiences that demonstrate the ability to work with others are expected, one administrator offered that the medical and nursing admissions processes rest highly on students' personal efforts, and this insinuates that effective teamwork is not as important as individual accomplishments. For example, he stated that the medical and nursing schools admit students who 'shine' as individuals in the classroom and beyond. He added that medical and nursing students applying to school must earn satisfactory grades—a highly individual feat—and the competitive nature of the admissions process drives students to compete against each other for recognition. In talking about the business of the health professions admissions process, this medical administrator reported the following:

So, we recruited and retained a group of docs...they've been taught that, in fact, it's bad, team play is bad. 'I don't want you to get my recognition that I need to get into medical school.' And the same for nurses. You know, they come into college and they have to get into nursing school and there's no team play in that. It's just grades. (ma1 p. 4)

Although this quote highlights the view that the medical and nursing schools recruit and admit students who perform well as individuals, not team members, the

business of medicine is also present in the way faculty are rewarded and reimbursed. In regards to IPE teaching, interprofessional practice (IPP), and/or interprofessional research, rewards are limited. Faculty and administrators voiced concerns about reimbursement and/or lack of reimbursement for shared teaching or teaching across professions (ma3; mf2, p. 13; ma1). One faculty member reported the IUSM's emphasis on teaching and education, but also stated that time pressures limit the amount of teaching one can do (whether individual, team, or shared teaching), and reimbursement structures are designed to reward faculty primarily for clinical time, not necessarily teaching time. The following quote highlights this medical faculty member's view on the business of medicine:

So we [medical faculty] all live in this Jekyll and Hyde world where we know that we have to stay clinically busy, which means with decreasing reimbursement you have to do more and that helps fund the other initiatives, but at the same time, we're over here saying that education is number one. So I think even with the best intentions, the business of medicine continues to challenge an academic environment. (mf2, p. 17)

This faculty member's quote underlines the double-edged sword notion. On one hand, he recognizes the importance of education and developing future physicians, but on the other hand his time spent and money generated through clinical efforts power the institution.

One medical administrator echoed this view and added that despite the accentuation on the importance of teaching compensation, the complex reimbursement structure may interfere with shared teaching: "in some settings, reimbursement for services could be structured in a fashion where some might see it disadvantageous if they were trying to be working together as opposed to just doing it themselves" (ma3, p. 4). Furthermore, another medical administrator also reported that teaching faculty receive no

extra pay or benefits for team teaching and salaries sometimes depend on grant monies that may not emphasize cross-profession collaboration (ma1). A medical faculty member also alluded to this when talking about literature in healthcare. She spoke about how healthcare journals usually represent one discipline or profession and this separation may inhibit teams and collaborations across professions. She reported that, like health professions education, health professions literature exists in silos:

We do journal clubs all the time. What do we look at? We only look at our own literature.... So I think the research would be better if all of this merged and this was expected to merge. (mf3, p. 17)

This quote touches on her belief that interprofessional collaboration could improve research and foster relationships across professions.

***That is how it has always been.*** In addition to participants discussing how the business of medicine influences the admissions, teaching, and research processes, they also mentioned how medical education and practice perpetuate historical tensions, power differences, and hierarchy. Furthermore, some of the IUSM participants stated that education and practice dynamics have remained static for many years.

One medical faculty member discussed how power and hierarchy are taught in conscious and subconscious manners. He voiced that medical students hear about and observe the medical hierarchy during education, but they may feel indifferent to power differences because the hierarchical dynamics are propagated throughout their education.

In talking about physicians and students in academics, he stated:

This is academics [referring to the medical school] and doctors are all that and a bag of chips. Doctors are all about themselves and doctors rule the room. I mean, that's how I think it's always been. I think trying to become an equal with the nursing student or a social work student, that's going to be a culture shift for the school of medicine side. I don't think that other schools are going to have a problem, but I think for the school of

medicine, that's...going to be different. A lot of students will be fine with it. They're part of that arrogantness [sic]. [It] is kind of bred into you in medical school. (mfl, p. 4)

Although this medical faculty member voiced his own belief in partnerships and equality in practice, this quote points to his opinion that not only do many physicians intentionally or inadvertently indoctrinate the hierarchy, but they also accentuate their position at the top and benefit from this hierarchical structure.

Repeatedly, students and faculty discussed how the business of medicine perpetuates the notion that the physician holds all the answers to patients' problems and students' questions. Medical students discussed how their education emphasizes that the physician ultimately makes decisions and clinical time should center on learning as much as possible from physicians. One medical student talked about how the physician's position is taught in the classroom and modeled in clinicals: "I guess being on the medical side of things you're kind of taught that [the physician's] say is the final word" (ms1, p. 4). Another student echoed this view about the physician being the final decision-maker and reported that prior to starting clinical rotations, he thought the physician made patient-care decisions on his own. However, upon entering clinical rotations, notions about the physician's role differed from his expectations:

I mean the first time that I really understood the concept of the team working in medicine was my 3<sup>rd</sup> year in clinical. [Before that] I figured it was gonna be the doctor sitting around and making decisions. (ms3, p. 14)

In addition to medical students feeling the physician has ultimate authority, clinical faculty notice that medical students view the physician as the ultimate authority. A medical faculty member reinforced this notion by stating that despite several professions residing on her particular rounding team, most students direct all inquiries to



her rather than seeking input from individuals from other professions. When she tries to encourage medical students to ask other members of the team questions, they seem confused: “I think they’re used to asking the attending every question and getting a response, and it’s not that I don’t want to teach them or that I don’t know, but they need to learn from the different people” (mf4, p. 8-9). Although some physicians encourage medical students to pose questions to individuals from other professions, one medical student reported that those encounters are rare and often not emphasized (ms4, p. 12).

Power and hierarchy exist not only in health professions education, but also in medical residencies. Faculty members attested that residencies also cultivate power differences and hierarchy across professions. One faculty member discussed how his residency training focused on learning about specifics of his specialty rather than working with others. Similar to what students reported about undergraduate medical training, he stated that his residency teaching was done in a “good ol’ boy network” fashion (mf2, p. 3) and bred the idea that the physician ranks highest. He recalled how this notion was engrained during residency:

At the end of the day our residencies told us there can only be one captain of the ship.... The residencies are a pointed sword that pretty much push you to say, ‘Listen, you’re responsible. You’re always responsible and you’re responsible for everybody else.’ (mf2, p. 2)

Although this culture permeated in residency, he noted that he believes IPE has the potential to reshape healthcare dynamics to lessen the hierarchy and power difference: “That’s the culture we grew up [in] with surgery, which interprofessional education has certainly started to round that point off” (mf2, p. 2).

Similar to conversations about the educational setting, the interviewed IUSM participants made reference to the business of medicine in practice and how the

complexity of the current medical system reinforces power differences and makes it difficult to foster an interprofessional environment. One medical faculty member called the healthcare system “chunky” (mf1, p. 13) because of the lack of continuity of care. He talked about how care providers sometimes enter and exit the patient care environment without communicating with one another. Another medical faculty member discussed how the electronic medical record poses a challenge to realizing an interprofessional culture because practitioners are “buried in a computer to do all of your work and not communicating at the bedside with the patient and the nurse about the care” (mf3, p. 11).

Interviewed medical students echoed this notion about disconnected care providers when talking about healthcare teams. They talked about how nurses, physicians, and other professions (e.g. physical therapy, pharmacy, social work, etc.) directly involved with a particular patient’s care should be represented on IP teams, but teams are inconsistent throughout the hospitals. Despite feeling that nursing, medicine, and others belong on the healthcare team, students reported that teams varied depending on the unit or rotation, and sometimes nurses’ roles on the team were non-existent or vague. One student stated that on his internal medicine rotation, the physicians, residents, medical students, and social workers were part of the team:

That’s who we consider part of the team on internal medicine. And if you needed a nurse, you just went out and found a nurse on the floor. But, yeah, that was the team. (ms3, p. 5-6)

Recalling his internal medicine rotation, another student talked about how the physician team “relied on nursing when you could to get information” (ms4, p. 6). The same student talked about how each rotation varied in the amount of interaction with nurses. Although nurses played a crucial role on the team and care of the patients in some

settings, he elaborated that nurses' roles on some units were to offer information to the physician when asked.

In addition to how nurses' roles on the team vary according to the hospital environment, the IUSM participants reported that most often the physician is considered the leader on the healthcare team. However, leadership on the team can be a source of contention. One administrator stated this originates from historical tensions in the practice setting. When talking about leadership and hierarchy, she highlighted that this culture holds strong in current practice:

I think there's a lot of challenge with this whole concept of 'who's the leader of the team.' So there's a lot of history and cultural hierarchy that's been here for a long time.... And so it really is gonna take efforts to overcome some of those cultural barriers based on the way all of our professions have grown up to really say, you know, so who's gonna lead.... (ma2, p. 3)

This medical administrator also talked about how the structure of the healthcare system was designed in a fashion where doctors give orders and others follow:

Let's be honest. We have a system where doctors give orders to people, so there's a lot about our culture in that. (ma2, p. 5)

She recounted talking to a colleague from a different profession about the power differences in medicine and recognized that oftentimes physicians do not immediately see or think about hierarchy. Her friend told her: "Wow, the power hierarchy is so strong in your culture...it is palpable." The medical administrator continued: "She recognized it right away, so we've got to recognize that and address it" (ma2, p. 5).

One medical faculty member also highlighted how the historical hierarchy remains. When recalling a story about an interaction with a nurse over the issue of calling

a physician, he stated the nurse was nervous and hesitant to call the physician because her education instilled fear about communicating with physicians:

She said that during her training, just to call the doctor was big, bad, and scary. And apparently nurses on floors are scared to call doctors. Like it's a really big deal. (mf1, p. 5)

Although surprised by her reaction, he voiced that hierarchy is ubiquitous in education and practice. He illustrated the hierarchy with a personal story about observing a nurse as a subservient helper to the doctor:

It's been that way forever.... The nurse is at the beck and call of the doctors. That's the way it works. I've been to doctors offices, the nurse comes in and has coffee ready and has a bagel with the right cream cheese on the doctor's desk when he or she gets in. I'm like, 'Seriously?' That just seems weird to me. (mf1, p. 8)

Although strange to him, this medical faculty member recognizes that historical roles and power differences exist in modern-day medicine.

In addition to stories about power and hierarchy, one administrator discussed how the hierarchical history poses a considerable challenge to implementing IPE. He said historical turf wars have sometimes led to problems:

And the reality is that medicine for a long, long time there's been a lot of that [hierarchy], particularly with physicians thinking that they're at the top of the heap and creating an atmosphere where others have felt that there are barriers to others speaking their mind to the physician and sometimes to the detriment of the patients. Not to mention the culture of the workplace. (ma3, p. 3)

This quote highlights the administrators' view that professional relationships and patient care are at stake when hierarchy exists.

***Theme summary.*** Through data collected from interviews, the business of medicine emerged and it became clear that interviewed IUSM participants view the business of medicine as a driving force in medical education and practice. Participants

described the business of medicine as a ‘double-edged sword’ that impacts several aspects of education and practice such as the admissions process, the institution’s reward structure, and patient care. Furthermore, the business of medicine influences team dynamics and the composition of the healthcare team. Additionally, participants discussed how medicine remains ‘how it has always been’ and historical tensions, power differences, and hierarchy in the health professions perpetuate the business of medicine. In turn, participants also voiced that the business of medicine influences the way the institution perceives, conceptualizes, and cultivates IPE and IPP.

**Theme two: The power of experience.** Although the IUSM participants exposed particulars about the business of medicine, both the IUSM and the IUSN participants discussed pivotal moments in their education and/or practice that shaped their conceptualizations of IPE and/or IPP as well as teamwork and collaboration (see Appendix E (1b)). Importantly, participant groups noted different points in time throughout their academic and professional journeys in which experiences had the most impact. Medical administrators and faculty members discussed how their residencies made them realize that ‘two heads are better than one’ in medical practice. Nursing administrators described how ‘woven experiences’ throughout their lives impacted their views on IPE. Additionally, nursing faculty members revealed the power of ‘light bulb moments’ with their students and how these moments influenced their conceptualizations of IPE. Finally, nursing and medical students recounted how their didactic and clinical opportunities taught them that ‘experience is the best teacher’ when discovering healthcare dynamics and teamwork.

*Two heads are better than one.* Each interviewed IUSM administrator and faculty member discussed his or her own education and how it influenced views on IPE, IPP, or the value of other professions (see Appendix E (2b)). Although some medical administrators and faculty talked about how experiences in undergraduate medical education shaped their views on IPE and IPP, most discussed residency and/or fellowship as a pivotal time when they recognized the importance of working with others. Medical administrators and faculty reported these experiences as informal and unplanned, but they emerged in interviews as important landmarks for understanding and conceptualizing issues related to IPE.

Administrators and faculty discussed how experiences in graduate medical education (i.e., medical residency or fellowship) made them realize the value of teamwork and working with individuals from other professions. They reported that teamwork and the opportunity to work across professions resulted in better patient care and richer learning experiences. One medical administrator reported that during her residency she recognized that impromptu interactions with individuals from other professions made her appreciate the value of other team members, improved the residency experience, and bettered the care of patients:

The residents that learn the most and probably took the best care of the patients actually recognized that [they] ask[ed] the respiratory therapists about ventilator stuff and the nurses or the nurse practitioners about lots of aspects of the care. (ma2, p. 1)

A medical faculty member echoed this sentiment and discussed how she realized in residency that the most efficient teams included representatives from other professions who offered their expertise on the patient (mf4, p. 2).

In addition to recognizing that IP teams can offer multi-faceted care for patients, one medical administrator recalled learning that working together can improve not just one patient but an entire population. He illustrated this concept with a story about how a colleague who ran a travel clinic saw thousands of patients a year because of the shared responsibility, coordination, and teamwork transpiring at the clinic. He recognized that his colleague could not have seen all of those patients alone, but “you can extend your benefit over populations of people if you sort of learn to work with others” (ma1, p. 11). He added that his colleague’s clinic caused him to realize that patient care on a large scale can only be accomplished with teamwork.

Recalling interactions with pharmacy residents during medical residency, a medical administrator and faculty member discussed how these interactions allowed for reciprocal learning (ma3, p. 2; mf1, p. 3). The medical administrator reported that interactions with individuals from another profession “had an effect of imprinting on me about how effective and logical that was...so I’ve always had this notion that we should be approaching education in less of a silo fashion” (ma3, p. 2).

Although the aforementioned experiences involved residents interacting with other learners, not all medical administrators or faculty spoke about having IPE opportunities during his or her education. Instead, some mentioned how interactions with licensed individuals from another profession, rather than other learners, impacted them. One medical administrator discussed how an experience with a pediatric patient during medical school impressed on him the value of nurses:

I remember doing my pediatric rotation and went in to see a fairly young child, it was like a 6-month old child, and the child was wrapped up in a blanket and I needed to go in to do my pre-rounding and examine the patient and get all my information ready so I had it for rounds. I remember

unwrapping a child who was all swaddled up, so I've got this poor 6-month old child in a diaper in the middle of this room and I'm going, 'Crap!' I have no idea how to wrap this back up. I got nothing. And it was the nurse who came to save me. To show me, not silly, but important things like that that are key to being able to provide care. (ma4, p. 3-4)

During residency, this same administrator said he interacted closely with nurses, but rarely with other learners. This experience proved valuable for him in terms of learning collegiality and collaboration in the workplace. He appreciated that the nurses challenged the residents to learn skills and better understand procedures physicians ordered. For example, he recalled ordering a nasogastric tube insertion on a patient, and the nurse handed him the nasogastric tube and said, "Here you go. Let's do it. You're doing it." He added more commentary about his relationship with nurses during residency:

Basically their [the nurses] philosophy there was until the nurses as a group knew that I could do these tasks, they wouldn't do them for me. But once I proved to them that I knew how to do it and was willing...then they would do them for me all day long. (ma4, p. 4)

This administrator's educational experiences involving shared responsibility and collegiality instilled mutual trust across professions and allowed him to better understand and recognize the value of individuals from another profession.

Although all these experiences seemed impactful, not all medical administrators' or faculty members' educational experiences were positive. A medical faculty member discussed how a couple of negative experiences in medical school taught her how not to communicate with members of the healthcare team. She recalled physicians in the operating room yelling at nurses or technicians (mf3, p. 5) and vowing never to model that negative IP behavior for medical students in the future. She stated, during residency, her faculty mentor fostered IPE for undergraduate medical and nursing students and modeled IPP. Her mentor included students in discussions, asked for students' opinions



and suggestions, and modeled how to respectfully talk with patients and one another (mf3, p. 4). To this day, this faculty member tries to model this positive IP behavior for students who rotate through her department.

In summary, quotes from medical administrators and faculty members illuminated their experiences in residency as being influential on their current conceptualizations of IPE, IPP, and working across professions. Their stories are powerful testaments to how the resident experience instilled a ‘two heads are better than one’ attitude for medical administrator and faculty participants and shaped how they practice, teach, and interact with others today.

***Woven experiences.*** Although medical administrators and faculty members emphasized powerful experiences during graduate medical education, nursing administrators discussed several experiences ‘woven’ throughout their adult lives that shaped their conceptualizations of IPE and IPP (see Appendix E (3b)). Nursing administrators spoke more about how working in the patient care setting, personal experiences as patients and/or family members of patients, and roles in academia drove them to view and perceive IPE and IPP in new ways. Although mostly unaware of IPE and IPP terminology prior to their administrative roles, today all interviewed nursing administrators are accustomed to IPE terminology and recollected their past experiences through an IPE-informed lens.

Each interviewed nursing administrator shared reflections on her unique patient care background. One nursing administrator spoke about working as a young nurse, remembering most working environments as collaborative and interprofessional. Her recollection of her first job working as a nurse in an IPP setting follows:

It was in mental health, which has been doing IPE for a really long time. I mean, they didn't call it that, but we did rounding at the bedside with the team—way back in the 80's. And then we had team meetings three mornings a week. And it was physicians, the nurses, there were therapists and other people too. We actually all went and sat in a room and worked together on, 'What are we doing today?' We did group therapy with the patients and it was always two different disciplines. (na1, p. 14)

Although most of her stated experiences in patient care environments were collaborative, not all settings fostered IPP. On a medical surgical unit, hurried interactions with physicians generated frustration. She mentioned how physicians came to the unit when there were post-op orders but conversations with them about patient care was limited:

There was very little thinking about this patient's specific needs and how we were meeting them.... I really noticed it. It drove me crazy. (na1, p. 14)

Because of her own varied experiences, she recognizes not only the importance of a work setting that fosters IPP, but also the value of individuals who believe in interprofessionalism in the healthcare setting and its benefits to patients.

Similar to this nursing administrator's experience, another nursing administrator highlighted how the patient care setting in which she worked impacted her views on teams and teamwork. She reflected on the teamwork throughout her time as a nurse in the patient care environment and how several individuals worked together to improve the care of a patient:

I was very used to always working in teams and having different members of the team emerge to meet the needs of the patient more so at one point than maybe the others.... I can't say that I consciously thought about it, but when I think back to my practice it was always a team-based approach. (na3, p. 13)

Although at the time she may have been unaware of the importance of teams, she added that this teamwork resulted in patient-centered care.

Along with practicing patient care, some nursing administrators described personal experiences that impacted their views about IPE and health professions education. While discussing personal experiences with the healthcare system, nursing administrators voiced frustrations with the system and how IPE can create change. One nursing administrator described an encounter with a physician and nurse that indicated to her that their relationship was not collaborative:

When the physician comes in to talk about something, the nurse is kinda standing behind him or her not really doing anything but making some notes so they can tell the next nurse in report. I found I kinda resented that. (na4, p. 5)

In addition to this non-collaborative scenario, this administrator continued, stating that without collaboration she feels the patient is often not at the center of care: “the absence of the person is kind of astounding” (na4, p. 14). She elaborated by saying that the patient can sometimes be discussed as the illness rather than as a person. To explain this notion, she voiced that a person with a hip ailment is “just a person with an infected hip that we [the physicians] had to take out...he’s an interesting case, but he’s not a person who’s struggling with this” (na4, p. 14). This quote exemplifies that this nursing administrator feels the patient is more than an illness and his/her care requires collaborative discussions centered on the patient, not the illness.

This nursing administrator and another stated that IPE and IPP can lead to a better understanding of how the healthcare system functions: “So when we talk about IPE and interprofessional practice and we look at our healthcare system, for me, it’s all about how we navigate that” (na3, p 14). She and others reported that too often miscommunication and lack of teamwork in the healthcare setting leads to disappointment for patients and families. Nursing administrators’ reflections on their experiences as patients and/or

family members revealed the notion that IPE could create changes in the way patients are discussed as a team, improve teamwork and patient care, and make patients and families feel more informed.

Although reflections of past work experiences indicated recognition of interprofessional environments, two nursing administrators talked about how familiarity and alertness to IPE came after holding an administrative position. One nursing administrator learned of IPE in approximately 2008 when the American Association of Colleges of Nursing began updating standards for nursing education. She reflected on first hearing and reading about IPE:

In that document there was a lot about it [IPE]. Although it had been something that I had certainly thought of before, it wasn't something that I thought of as 'we have to do this'...that was probably when it really hit me that we have to change how we're teaching our students. (na1, p. 4)

After hearing about the changes in accreditation, this administrator educated herself on IPE by reading documents, serving on committees, attending conferences and seminars, and participating in an institute on interprofessional quality improvement. Her experiences, specifically at this institute, opened her eyes to the different ways teams can work together and further informed her about IPE:

I already knew it was important and it was just one more step along the 'Ok, we must do this and we need to do it well. We need to not superficially run over it.' (na1, p. 5)

Clearly informed about IPE through her past experiences, this administrator's definition of IPE stemmed from experiences at IPE conferences and resembled the World Health Organization's (WHO) definition: "interprofessional education is students from several professions coming together to learn about each other, from each other, and with each other" (na1, p. 3).

Similar to this nursing administrator's background and views on IPE, another administrator discussed how her membership on several interprofessional education-related committees, attendance at conferences, and interprofessional leadership roles shaped her views and definitions of IPE. Her first recollection of IPE discussions dates back to approximately 2005 when IU became involved with the Institute of Healthcare Improvement and the Health Professions Education Collaborative (HPEC). Her involvement in IPE-related efforts continued, markedly with other health professions deans in creating an interprofessional education mission and vision statement for all the health science programs at IU. Clearly, her involvement with IPE efforts developed over time and influenced how she conceptualizes IPE. Since 2005, she has been heavily interactive with people from a number of professions, especially medicine, and part of her definition of IPE came from hearing perspectives from others. She remembered hearing physicians first describe what IPE meant to them, and realizing her definition vastly differed:

It's really interesting. When I hear it [IPE] talked about in the School of Medicine—at first it took me by surprise—if you have a physician, let's just say from pediatrics here, and a physician from emergency room services here, if they interact, that was their definition of interprofessional education. That was interesting. Coming away from that and sitting with our partners at the table, I guess when I hear that, that told me we were at different understandings. For me it truly is crossing out of your profession. (na3, p. 4)

Through their own experiences, other nursing administrators share this 'crossing out' concept. This notion captures the belief that nursing administrators feel IPE must involve learners from at least two different professions interacting with each other.

After attending an annual Institute of Medicine meeting, the emphasis on teams and teamwork influenced one nursing administrator's views of IPE. The conference,

dedicated to the topics of health professions education and producing practice-ready professionals, redirected her thinking about IPE in health professions education:

I think I'm being informed by some of what I'm hearing here [at the Institute of Medicine conference], but it's all around teams. It's all around affecting practice, all of our practice in ways for better patient outcomes. (na3, p. 5)

She added that this conference helped her better understand how IPE fits into curriculum and how different individuals talk about IPE.

Other nursing administrators discussed the importance of teams and how research and grant work helped them learn more about teamwork. One nursing administrator stated that as a result of extensive interprofessional research experiences with physicians, nurses, and psychologists, these individuals increased the knowledge base in her field of study. From this experience and other academic experiences, she learned that others from different professions offer important contributions to one's work: "what other disciplines do is bring different perspectives and it's a better experience for whatever it is you're doing—studying, teaching—if you can just do that" (na2, p. 8). Another nursing administrator echoed comments about IP collaboration. She voiced that through grant work, members from different professions came together to work towards a common goal:

I guess it's just like being equal partners. If we're working on a grant or we're collaborating on some kind of project the roles kind of fade away...we all put a little piece on the puzzle. (na4, p. 8)

Some nursing administrators' past and present experiences developed their ideas about the definition and/or examples of IPE. One nursing administrator discussed how IPE moves beyond understanding one's own and others' roles rather than consisting solely of simple activities that focus only on understanding roles of other professionals

(na4). She and others urged that IPE experiences should progressively increase in complexity over time and result in longer-lasting lessons carried into practice. Another nursing administrator supported this thought and stated that IPE requires frequent interactions over an extended period of time:

To get to know each other and to communicate, and to trust, you have to be together over a period of a couple of years. You can't just come do this little group, lecture, and have a few activities. (na2, p. 6)

In addition, these quotes illustrate nursing administrators' thoughts about how IPE opportunities should consist of intentional, longitudinal, and meaningful interactions across professions.

In summary, interviewed nursing administrators' feel their previous work in patient care, roles as patients and family members of patients, and administrative duties shaped their conceptualizations and definitions of IPE. Their stories stressed the impact of IPE and IPP on teamwork, patient-centered care, and patient and family satisfaction.

***Light bulb moments.*** Similar to interviewed nursing administrators, all nursing faculty participants are familiar with the term IPE, and some of their understanding of IPE stemmed from experiences in patient care. However, nursing faculty, more often than not, described how specific experiences with *students* influenced and shaped their views on IPE (see Appendix E (4b)). All nursing faculty members discussed the benefits of IPE, but the benefits seemed to gain clarity after receiving student feedback about interactions with individuals from other professions. Additionally, nursing faculty members' stories revealed that students have 'light bulb moments' during and after IPE experiences, meaning that those experiences bring forth new recognition and revelations about working with students from other professions.

Nursing faculty members reported that students feel simulation exercises with medical students make them more aware of the importance of communication across professions. Nursing faculty members talked about how simulations with medical students allow nursing students to practice one-on-one and telephone communication. One faculty member discussed how the simulation requires nursing students to call the medical student. She added that during simulation days, she often witnesses nursing students' communication with the medical student improve throughout the day:

In our simulations we have them call a physician. You can just see them going from one simulation to the next one, how much better they get at it and the importance they see of having an organized telephone call with enough information but not overkill and not under kill, but just enough information to give the physician. So I see the communication is a big part and not being afraid to call the physician. (nf3, p. 4-5)

Another nursing faculty member supported this view and recalled a recent interaction with students who talked with her about communicating with other learners in a simulation setting. She talked about how the IPE simulation experiences require communication across professions and make students realize its value: “The students said, ‘Had I not been immersed in this simulation, prior to this I did not realize the importance of just communicating very clearly in a safe, relevant manner’” (nf1, p. 4). Clearly, after nursing faculty members hear students talk about interactions across professions, they feel that students benefit from IPE opportunities that encourage communication with learners from other professions.

In addition to recognizing the importance of communication across disciplines, nursing faculty participants also discussed how they have watched IPE experiences break down barriers and decrease anxiety for students. They described how students sometimes verbalize anxieties about talking with individuals from other professions even though



they recognize the importance of communication and sharing of information in the healthcare setting. Interviewed nursing faculty discussed how calling a physician can provoke fear and anxiety in nursing students because they worry the physician will yell or become angry with them. A nursing faculty member expressed how, oftentimes, these fears abate when students relate how they feel and discuss issues during the IPE simulation debriefing sessions. As one nursing faculty member stated, oftentimes debriefing discussions bring forth students' similar feelings about one another. She recalled a debriefing conversation that illustrates this notion:

The nurses will say, 'All we hear is that the doctors yell and sometimes over the phone so we were afraid to call. Our first phone call was very scary to us.' And the medical students will also say how poorly they can be treated by nurses when they're doing their rotation in the hospital. So it actually goes both ways and they're like, 'Oh!' (nf3, p. 8)

This quote illustrates that while nursing students and medical students may feel intimidated by each other, faculty members observe students becoming more comfortable with one another after coming together and interacting within educational and professional settings. One nursing faculty member recalled how her nursing students recognized medical students' similar struggles to learn their role and also that medical students and physicians are human too. The nursing student stated to the faculty member:

I didn't realize what a medical student had to go through to learn their role. We just, we were intimidated by them before and now we know that they're real people too. (nf1, p. 4)

She added that these IPE simulation opportunities create "aha" moments that help lessen nursing and medical students' nervousness about working together (nf1, p.3)

In addition to IPE experiences breaking down barriers and decreasing student anxiety, the interviewed nursing faculty discussed how IPE experiences allow students to share information with each other and develop camaraderie. For example, one nursing faculty member talked about how IPE simulations provide an opportunity for students to not only share information, but also recognize variations in information. She evidenced this with a story about students' recognition that they sometimes talk about the same medications, but use different nomenclature:

The medical students learn the generic name of drugs, so they say Naloxone, whereas our students and in the hospital setting you probably hear Narcan much more. So putting those two terms together and they go, 'Oh!' It's fun to see. (nf3, p. 6-7)

This story highlights that IP simulation experiences help nursing students connect what they are taught to what others learn.

Additionally, nursing faculty stated that students feel more relied on and valued after undergoing IPE experiences. Nursing faculty members communicated that debriefing sessions bring out sentiments about each profession and reveal that nursing and medical students experience similar levels of nervousness in anticipation of the simulation. One nursing faculty member's debriefing experience revealed the importance of simulations in terms of recognizing the value of one another:

The medical students say to our nursing students 'I couldn't have done that without you.' And the nursing student [says] 'I was so glad when you came in the room.' (nf3, p. 8)

The same faculty member added that nursing students realize the pivotal role they play in decision-making during the IPE simulations. Another faculty echoed this by recalling how her students discussed feeling relied on by the medical students and residents who

participate in the simulations. She recalled the medical student stating to the nursing students, “Oh, you saved me; you had my back” (nfl, p. 14).

In summary, all interviewed nursing faculty members reported involvement in interprofessional experiences with students. Most of these experiences commenced in the simulation lab, but some smaller, more informal experiences occurred in hospital setting. And while all interviewed faculty members expressed familiarity with the concept of IPE and support it, they witness ‘light bulb moments’ when observing students in IPE experiences and realize the true and practical value of IPE through students’ feedback. The IUSN faculty members stated students report that IPE provides opportunities to communicate with other professions, breakdown barriers, and increase confidence, camaraderie, and teamwork.

*Experience is the best teacher.* Although most medical and nursing administrators and faculty spoke of graduate educational experiences, work, and administrative experiences as most powerful influences on their conceptualization of IPE and IP teamwork, this does not imply that undergraduate health professions education does not impact views on IPE and/or IPP. In fact, most discussions with medical and nursing students revolved around extremely powerful stories from their experiences in the classroom and/or clinical setting (see Appendix E (5b)). Although interactions across professions are sometimes positive, students reported more negative incidents. Furthermore, what emerged from the interviews emphasizes that stories and experiences—positive or negative—remain with students and impact their conceptualizations of communication, the healthcare team, and IPP.

Although most students' stories depicted negative experiences or interactions, students also discussed positive interactions or experiences in the clinical setting. Importantly, nursing students, more than medical students reported positive stories. These stories centered on teamwork, communication, and interactions witnessed during their education. A medical and nursing student both talked about how the emergency department performs as a team and the nurses and physicians work closely at all times. Both recalled different stories of an acutely ill patient arriving and the team working in unison to help each other and the patient. The nursing student reported that as the patient entered the hospital, "there are just a plethora of people that jump on that patient and set up the EKG and do everything that needs to be done...so they really do whatever is needed down there [in the emergency department] and that teamwork is phenomenal" (ns1, p. 3).

Another nursing student remarked about a positive teamwork interaction between a nurse and medical resident. She stated that the nurse called the resident in the middle of the night and suggested a treatment for the patient. The resident, not completely sure about what to do, agreed with the nurse's suggestion. Upon seeing each other the next morning, the nursing student recounted that the nurse and resident discussed the situation, shared thoughts about the treatment of the patient, and valued each other's input. The nursing student recalled the nurse and resident's interaction:

He came in the next morning and really thanked the nurse and they talked about what happened and why it was a better solution. That was a positive interaction I would think and it helps the student learn as well. It made my nurse feel like her input was valued as well. They worked together on that one, which is very positive. (ns5, p. 7-8)

Similar to this story, another nursing student discussed how a nurse suggested to a resident surgeon to delay surgery because of an abnormal lab he missed. Although she described this situation as less collaborative, she stated that the resident thanked the nurse and recognized that their collaboration was necessary for the safety of that patient (ns4).

In addition to stories about witnessing others' positive interactions in the hospital, two of the interviewed nursing students reported that physicians sometimes ask for their input while in a patient room (ns1; ns2) and/or are open to teaching them and collaborating with them in the clinical setting. A nursing student evidenced this with a story about attending a Caesarian section where the physician asked her questions and took time to teach her about anatomy. She was excited and grateful for this opportunity:

[The physician] held her open and showed me all this kind of stuff and explained everything to me. That was cool. I don't know if I learned anything constructive for my own field or whatever, but it definitely kind of was like, 'Oh, well that makes a lot more sense now!' (ns2, p. 5)

This quote and others capture the notion that positive experiences with individuals from other professions impact student experiences and are powerful testaments of working collaboratively and interprofessionally.

In addition to positive interactions witnessed and experienced in the hospital setting, nursing students discussed powerful simulation incidents with medical students. The simulations not only made nursing students desire additional opportunities, but also made them realize that medical students value their input. One nursing student recounted a story about when a medical student told him about how they rely on nurses to complete necessary tasks that they might not know how to do:

One med student said, 'We know some of the things that need to be done, but we don't know how to do it cause we think you guys are kind of like the magic that gets things going. We might say, well I want this done, can

you help me? And then it gets done, but at the same time we don't know how it happens.' (ns1, p. 5)

In addition to hearing that medical students need nursing students' help during simulations, nursing students talked about how those experiences also make medical students realize that nursing students understand similar concepts necessary for patient care. Nursing students talked about how medical students seem eager for suggestions about patient care during simulations and rely on nursing students to help them make decisions. Experiences like these enlightened both parties and created a more collaborative environment. One nursing student discussed a conversation she had with a medical student after a simulation. She stated that the experience enriched both parties because they recognized the value of working as a team:

One [medical student] was super impressed by how much we knew compared to them. Even my med student would be like, 'Oh my gosh. What drug should I give?' So, I think they had a view change as well and they realized we were a resource, you know? (ns5, p. 4)

Similar to this nursing student's story, another nursing student recounted an experience where a medical student relied on his advice. When communicating with a medical student using the SBAR (Situation, Background, Assessment, Recommendation) technique, the medical student expressed his lack of knowledge and appreciated the nursing student's guidance:

The great part about the med students is that the R part is a little heavier when you're talking to [them]. They're like, 'Yeah, maybe we'll take that recommendation cause I don't really know what I'm doing yet.' (ns1, p. 5)

This story of an IPE experience exemplifies how this particular nursing student appreciated knowing that he was not only part of the healthcare team, but also that his patient care input was valued and taken in consideration.

Although students experience powerful, positive experiences during their classroom and clinical time, students also revealed memorable negative experiences. Student participants reported that teamwork is emphasized throughout nursing and medical school (ms2; ms3) and they recognize that “that’s how it’s going to be when we’re working” (ms2, p. 3), however more negative stories depicting poor teamwork and collaboration emerged from students. One interviewed nursing student stated that many interactions are negative in nature and not only are detrimental to the team, but also detrimental to the patient: “I really feel like a lot of the interactions between the healthcare team are somewhat negative in nature where it closes down some of somebody’s contribution” (ns1, p. 14).

Many of the stories about detrimental interactions centered on miscommunication or communication errors in the clinical setting. One nursing student discussed that she has heard nurses say they do not want to call the physician because they are afraid of his or her reaction to a suggestion:

I have heard some nurses say, ‘Oh, I’m not calling that doctor cause they get mad. I’m not doing it. I’ll talk to his resident when he comes around.’  
(ns3, p. 8)

Similar to this student’s experience, another nursing student talked about how her clinical instructor felt nervous and anxious to call physicians. She voiced that she hopes in the future she will not feel the same way when she needs to talk with the physician: “I hope that whenever I talk to a physician my heart will not bounce and I don’t feel [what] my clinical professor experienced” (ns4, p. 17). Nursing students’ stories about being afraid to call a physician repeated and students felt nurses in practice and those who teach

perpetuated the fear, sometimes without knowing so. Another nursing student discussed how classroom teachings instill too much fear about talking to a physician:

They really hype that up in class and [the communication with a physician] is built up to be this thing that is so difficult, which to me seems insane. You really need to take the pressure off that because it makes the communication hard. You know? (ns1, p. 9)

He added that feeling intimidated to call a physician only decreases students' confidence and makes interactions more difficult.

Although students felt the importance of communication with individuals from other professions, they also emphasized respect and its significance on teams. Students voiced that disrespectful experiences can negatively impact the individual, team, and patient. One nursing student recounted a disrespectful encounter between a physician and nurse about a patient's medication. She revealed that the situation left her, as well as medical students, uncomfortable and she felt like the interaction did not exemplify patient-centered care:

He [the physician] had med students following him and they took steps behind him—if that says anything. I mean, they were totally disconnected as a unit right there. He was like, 'I don't understand why he's still on the drip.' [He] completely yelled at my nurse in front of me and all his physicians, stepped outside the room, badmouthed every healthcare profession on the unit.... It was a total mess. No one talked to each other. (ns5, p. 6)

She elaborated more, stating that this situation made her feel awkward and helpless.

One medical student reported a similar story about a negative interaction between a nurse and physician. She witnessed a nurse and physician argue over a patient's medication. During this scenario, she observed the patient becoming more acutely ill as the physician and nurse argued over medicine administration protocol:



There was a patient that was crashing on the floor and my fellow kept asking the nurses for Narcan or something and the nurse refused to give it to him. She refused to give it to the patient. I can't remember why she said no and he was getting so frustrated. He's like, 'No, this patient needs this.' And she refused. So that was kind of a negative interaction that I saw. (ms1, p. 4)

After recounting the story, she stated that the situation made her feel frustrated and it created a wall between the physician and nurse caring for the patient.

Although most stories about negative interactions involved practicing nurses and physicians, most medical students talked about how they personally experienced negative interactions with nurses. Students talked about how nurses sometimes act bothered and give "eye rolls" to medical students but remain collegial with rounding physicians (ms1, p. 5). Medical students stated that despite attempting to quash negative interactions, experiences like these put them in difficult positions because they are graded by physicians and worry that nurses will report negative interactions. One medical student elaborated on the fine line students walk between confronting nurses for negative behavior versus letting go of negative interactions:

When you're being graded, [the nurse-medical student dynamic] is different. So if the nurse wants to get in your face about something, you just let them do it cause you don't ever want to cause any trouble that might negatively affect anything else.... And most of the time they're very kind and direct you in the right place, but every once in a while there's one that, um, seems to just be like, 'Oh, you med students are terrible. I hate you.' You know? (ms3, p. 4)

In addition, this student and another medical student stated that oftentimes these negative interactions are not settled because students fear speaking up will negatively impact their grade (ms3; ms4).

Students' stories capture the notion that even though students may not have the skills to practice their occupation independently, they recognize when interactions are

positive and negative. Additionally, positive interactions among professionals make them realize the value in others' contributions to the team; however, negative interactions harbor feelings of helplessness and/or create awkward environments that suppress IPE and IPP. Finally, students' positive and negative experiences throughout education impact their conceptualizations of how healthcare teams communicate and interact.

***Theme summary.*** The power of experience encompasses participants' open dialogue about personal stories and underlines the impactful nature of each experience. Administrators and faculty members from the IUSM conveyed how their residencies influenced their views on teamwork and highlighted the notion that 'two heads are better than one' in the healthcare setting. The IUSN administrators recounted patient care, personal, and administrative experiences 'woven' throughout their lives that impacted how they conceptualize IPE and IPP. Nursing faculty members talked about how observing and participating in 'light bulb moments' with students in IPE settings shaped their views of IPE and IPP. Finally, all interviewed students from the IUSM and the IUSN told powerful stories highlighting that 'experience is the best teacher' when learning about teamwork and communication in the patient care setting. Whether these experiences stem from medical residency, careers, personal lives, or undergraduate medical education, all impact participants' understanding of individuals from other professions and/or conceptualizations of IPE and IPP.

**Theme three: Desire for IPE.** Although students discussed positive stories about interactions with members of another profession, more negative stories emerged. However, one of the most often repeated ideas from students was the desire for more opportunities to interact and learn with, from, and about students from different

professions (see Appendix E (1c)). Students reported this based off their own experiences with IPE or hearing about others' experiences. Although nursing and medical students feel more opportunities to interact with one another would be beneficial, they differ in their reasoning of wanting more. More specifically, the biggest difference between nursing and medical students in regards to their desire for IPE was that medical students seemed initially hesitant about interactions with nursing students during their education.

The nursing students talked mostly about how their experiences with students from other professions and/or hearing about experiences with other students made them realize their own value on the healthcare team (see 'Experience is the best teacher' section). Most of these stories revolved around simulations with medical students. Nursing student participants expressed that they felt valued in that setting, and therefore believed in the benefit of the IPE experience. One nursing student near the beginning of her nursing education talked about how after one experience in simulation, she yearned for more: "We had the sim day, but I'm so hungry now, after clinicals, to have more [simulation] time" (ns4, p. 14). Although this particular student had limited exposure to simulation, she and others wished these experiences occurred more frequently and earlier in their education.

Like nursing students, interviewed medical students also see value in interactions with other students; however, medical students differed from nursing students in how they initially talked about these interactions. Only one medical student stated, without hesitation, that she was interested in more interactions with students from other professions (ms1). The other medical students initially expressed hesitation about

interactions with others, but then became more open to the idea throughout the interviews.

When asked if they felt it would be beneficial to have more experiences with students from other professions, the majority of medical students communicated tentative responses. For example, in response to the question, one student replied in the following manner:

Yeah, it could. I guess it would have to depend on, I guess, what the interaction would be.... I think it would be interesting, I guess. I think, ah, I don't know. (ms4, p. 9)

Additionally, this medical student voiced uncertainties about his contributions to nursing students' knowledge and vice versa. Another student answered similarly to the question about whether more experiences with students from other professions would benefit him: "Well, I don't know...maybe" (ms3, p. 6).

Some hesitation stemmed from students not knowing how IPE would 'look' in the classroom or clinical setting (ms1, p. 7; ms2, p 8). Two medical students framed their concept of IPE around what they currently experience in the didactic setting. They talked about the anatomy and neurology courses taken alongside physical therapy students in year one and two of medical school. One student believed her participation in the courses with the physical therapy students meant she was involved in IPE: "I mean, in our anatomy and neuro classes we had PT students, so I've been a part of it and not really realized it" (ms2, p. 2). She described the classroom setting of the neurology course:

The PT students sit in this one area and we sit everywhere else and you just know they're going to sit over there. I think you mainly say 'Hi,' or something" (ms2, p. 10-11)

Despite little interaction, there were a few rare and unplanned exchanges in the anatomy laboratory on the weekends. The encounters in the lab “definitely weren’t a bad thing, they just did not happen often” (ms2, p. 2). Another student also discussed informal interactions in the anatomy lab and the joint courses, but he stated that medical students take courses in “parallel” to other students, but “they were just taking the class too at the same time” (ms3, p. 3).

Along with uncertainties about how IPE would ‘look’ in the classroom setting, another medical student in her pre-clinical years illuminated concern about the different academic levels of medical and nursing students. She stated that medical students delve deeper into material than nursing students, and this would complicate shared courses:

[Nursing students] don’t go into as much depth as we do in anatomy and classes like that. So, I don’t know, would that be a huge change if they have to come to our classes? We certainly can’t do less as a medical student. So, they’d either have to come to portions of our classes or their curriculum be super changed. So I don’t know how best that would work out if they’re just doing the basic classes. (ms2, p. 8)

In addition to concerns about varying academic levels of students hindering IPE experiences, medical students expressed concern about how time constraints during the first two years of education could present challenges for IPE. One student stated that the medical curriculum during the first two years allows little time for study or learning outside of basic science coursework. He talked about how the challenge with IPE in the first two years of medical school is that curriculum is crowded and geared toward the first portion of the United States Medical Licensing Examination (USMLE Step 1). Hence, medical students’ time and energy centers on performing well on that high-stakes exam (ms4, p. 12).

Another medical student expressed hesitation about IPE at first because she felt it would be difficult to break out of her comfort zone—especially in the first two years of medical school—and expand across professions: “we [the medical students] all feel like we know what we’re going through because we have all these classes together and we’re following the same track and we’re doing the same thing” (ms2, p. 10). This student felt allegiance to her class and worried that students from other professions would not understand what she experiences in her own education.

Although medical students expressed initial hesitation about interacting with students from other professions, after discussing IPE and their experiences in clinicals and in the classroom they seemed more open to the idea. Interviewed medical students articulated that the clinical setting seems more appropriate for IPE (ms1, p. 3; ms3, p. 13; ms4, p. 12). They conveyed that at the clinical phase of education they possess a more solid foundation of knowledge. Hence, after establishing a foundation of knowledge, students have more to offer one another:

I think it’s the clinical time when [IPE] helps cause it’s like everybody has their background knowledge that they’re coming to the table with and then you start applying it and that’s when you start picking up stuff. That’s when a PT student can tell you—like in a case, in a clinical context—this is what you do. (ms3, p. 13)

This same medical student added that exposure to other students would bring forth respect and help students understand each others’ roles:

I guess I never really thought about it, but you can’t learn medicine in a vacuum. It really is like a team thing. And understanding what the other groups are doing and how you can respect and work together, I think as a rule you’re probably gonna have a better patient outcome when there’s more than one group involved. (ms3, p. 15)

This student's reflection on the concept of IPE revealed that IPE was not a priority for him during his education; however, once thinking and discussing IPE and IPP, he recognized the necessity of others from different professions and how they contribute to patient care.

**Theme summary.** Interviewed nursing and medical students desire more opportunities to work with one another and recognize the value of interacting. However, medical students expressed more initial hesitation about these interactions and found it difficult to understand how IPE could benefit them given their extremely demanding coursework and rigorous national exams. Despite this, medical students became more receptive to IPE as the interviews progressed and shared stories of their experiences in the healthcare setting.

**Theme four: Enthusiasm, hope, and investment in IPE.** Enthusiasm and a sense of investment in IPE repeatedly emerged during interviews with the IUSN administrators, faculty, and students (see Appendix E (1d)). Well aware of potential challenges faced with implementing IPE, nursing stakeholders remain realistic, but hopeful. The nursing schools' hope for continued IPE in the future and their suggestions about moving forward was evidenced in interviews. That hope stems from the belief that there are nursing 'champions' within the school who support IPE, the notion that many IUSN participants feel IPE should become the 'norm,' and the perception that the IUSN is a 'legitimate partner' with other schools in ongoing IPE efforts.

**Nursing 'champions.'** Perhaps the most obvious evidence of enthusiasm and long-standing investment in IPE is the clear sense of nursing 'champions' involved in IPE efforts. All interviewed nursing administrators and faculty members have history of

involvement in IPE efforts at the IUSN. One administrator talked about how IPE's focus on patient-centered care aligns with nursing philosophies. Because of this, she stated that some of the concepts related to IPE are natural to the individuals in the profession. She recalled talking to physicians about IPE and how they viewed IPE as working with other people within their discipline: "medicine was talking about how they'd just come up with this patient is the center...and it's like, that's what our practice has always been" (na3, p. 10). The same administrator later talked about how her involvement in IPE-related efforts has been natural because she feels an "identity" to what she is doing (na3, p. 13).

One faculty member expressed her own and her colleagues' investment in IPE-related activities: "We wouldn't be where we are in the school of nursing if it hadn't been for us who worked without pay, without credit to get where we are today" (nf1, p. 15). She stated that faculty who work as proponents of IPE move curricular efforts forward in the IUSN. Another nursing faculty member shared that 'champions' are important, especially at the beginning of the new curriculum because the few who are involved can plant a seed for everyone and establish "great relationships and then build from that" (nf4, p. 7).

When talking about existing and future curriculum, interviewed nursing stakeholders expressed enthusiasm about IPE. Although rare in the current nursing curriculum, they stated IPE resides in a few places (e.g. simulation) however it is not closely linked to the nursing curriculum. One administrator described IPE as existing in "small pockets that are quite lovely, but they're not very well connected to the curriculum" (na1, p. 6). This lack of IPE within the current nursing curriculum is not, however, commensurate with the enthusiasm for and investment in IPE illustrated by



nursing faculty members. Several interviewed nursing faculty members help with and/or coordinate IPE-related simulation exercises, and most interviewed faculty members discussed how they support and promote student interactions with individuals from other professions while in the clinical setting. One faculty member reported how she advocates interprofessional-type interactions for her students during clinical rotations:

When I'm on the floors in the clinical areas with my nursing students [and] when medical students or the residents or the teams come around, I say go in there and listen and talk with them about what they're finding out about the patient and share with them what you're finding out about the patient. (nf2, p. 3)

Another faculty member echoed this sentiment and stated that faculty 'champions' in the IUSN helped instill an IPE investment in their students. She reported that nursing students have also become 'champions' for IPE, especially in simulation.

When talking about the proposed curriculum, nursing administrators and faculty mentioned that simulations, along with other IPE opportunities, compose the new curriculum. Coursework on interprofessional communication, values and ethics, professionalism, and IPP scatter the proposed curriculum. The IUSN curriculum revision is in its final stages, and nursing stakeholders seemed excited and optimistic about the changes. One nursing administrator expressed her confidence in threading IPE into the new curriculum: "as we have built a new curriculum, we have built in places for IPE, so I'm quite confident that it's gonna work out fine in the future" (na1, p. 7). The same nursing administrator also reported that faculty members have been "prime movers" for courses and lead efforts in curricular changes (na1, p. 9). Another enthusiastic administrator further discussed that she believes in the IUSN's capability of implementing IPE:

I think we have all the talent we need to do it...and I don't even think it's a lack of will. I think faculty in all of the health schools here value it—think that it's important. (na4, p. 16)

In addition to believing in the success of IPE implementation, some nursing stakeholders expressed enthusiasm for proposed IPE coursework. One nursing faculty member stated that some courses, like ethics, have been discussed for years, and she exuded excitement about the course coming to fruition. She shared equal excitement for a professional development course:

I'm really excited for our professional development course. It's going to involve the professional role of the nurse, ethics, [and] teamwork. We're going to be doing some things with IPE in the beginning steps. (nf1, p. 4)

***IPE as the norm.*** In addition to nursing administrators' and faculty members' enthusiasm about IPE, faculty and students described how students eagerly anticipate IPE. Faculty members believe nursing students' willingness and openness to IPE will forge the way for IPE efforts at the school and throughout the campus. One faculty member discussed how she believes enthusiastic students will “lead the faculty” as the IUSN moves forward with IPE curricula (nf1, p. 13). Another faculty member discussed how students seem positive about IPE, and the curriculum revision process requires their feedback (nf3, p. 12).

In general, students openly discussed the upcoming changes and talked about how they are fairly amenable and adaptable. One student reported that change precedes growth at the school and campus, and this growth advances the institution, meets the needs of students, and brings forth further positive changes:

It is very necessary for the schools to continue to grow and to adapt.... And if you want to continue to be a thriving school and make money and support your efforts...you have to do two things. You have to actually contribute in a way that makes life better because you're purporting to this

school of nursing, school of medicine, etcetera and [you] also have to please your clientele to the point so that they continue to speak highly of you and continue to enroll and go to school here. So you have to move forward to change, you have to evolve and meet the needs of your students. (ns3, p. 20)

The same student discussed how she hopes IPE will become the “norm for everyone” across professions (ns3, p. 15). Another nursing student offered that incoming students might not know of newly enacted curricular changes if the changes begin in the students’ first semester: “So, I think if you hit the new ones with it, they’re not gonna know anything else” (ns5, p. 13). She elaborated that for new nursing students, the new curriculum will be indistinguishable from the old, which might make implementation of IPE easier.

Interviewed nursing students reported that they believe nothing detrimental results from sharing information and learning with other students (ns2; ns5, p. 8). One student expanded on this and voiced that IU offers a unique and fortuitous setting for IPE because of the plentiful resources across campus:

I think IU is a great place and I think we have a great opportunity because of the size of our campus and because of the access that we have to our hospitals to pilot any type of new learning to see how it’s gonna work. (ns2, p. 17)

***Legitimate partners.*** Nursing stakeholders’ enthusiasm about IPE and the new curriculum couples with their enthusiasm about partnerships created through IPE. Nursing administrators and faculty talked about how they feel other health professions educators’ interests lie in similar areas and relationships continue to develop across the health professions schools. Nursing administrators are aware of the aforementioned Center for Interprofessional Health Education and Practice and many were involved in its development. One nursing administrator talked about how the Center affords IU the

opportunity for a position on the national IPE leadership platform: “if we could begin to pull people together working collaboratively, then I think that IU can contribute to the knowledge about IPE and interprofessional practice nationally very well” (na3, p. 9).

In addition, nursing administrators and faculty feel included in other IPE efforts at various schools—especially medicine (nf3, p. 12). They view partnerships across schools as collaborative and feel treated as a “legitimate partner” (na1, p. 10). When talking about meeting with individuals in the medical school, one administrator described her experience as eye opening:

And the School of Medicine in many cases, and we’re [the School of Nursing] not unique, can sometimes be perceived as the big elephant in the room when they’re present. That’s not happening.... I’m not saying I’m surprised by it, but I guess turf battles have not yet, ever come up. We’re not in practice, I mean, we are doing this in an academic setting, but we talk more the same language than I think we ever realized. (na3, p.11)

This quote exemplifies this administrator’s positive, dynamic interactions with medical personnel and the realization that many individuals at the IUSM and the IUSN share similar opinions of IPE.

In addition to relationships between medical and nursing administrators, nursing faculty discussed how they have forged relationships with other health professions schools throughout the years as well. One faculty member talked about her connections to a faculty member from occupational therapy. Together the two have discussed IPE activities and plan to work together, along with physical therapy, in the future. Moreover, another nursing faculty member mentioned her efforts to connect the nursing and dental schools in simulation exercises (nf3).

**Theme summary.** Based on interviews with nursing stakeholders, clearly the IUSN has a long-standing investment in IPE and remains enthusiastic about future and more expansive IPE endeavors. Stakeholders maintain enthusiasm and hope for the following reasons: responsive faculty and students have become ‘nursing champions’ who support existing and proposed curricula; many IUSN individuals believe IPE should become the ‘norm’ in health professions education; and established and growing partnerships across schools cause IUSN stakeholders to believe they are ‘legitimate partners’ in IPE efforts across schools. Although challenges accompany IPE implementation, the interviewed IUSN stakeholders remain enthusiastic about upcoming plans and believe in the value of IPE.

**Theme five: Culture shift.** Although the business of medicine permeated throughout interviews with the IUSM participants and enthusiasm for IPE was evident during interviews with the IUSN stakeholders, the concept of a culture shift pervaded interviews with both the IUSM and the IUSN administrators and faculty (see Appendix E (1e)). Many participants discussed the notion of creating an interprofessional culture at IU and the idea that individuals at IU must ‘let sacred cows die’ in order to bring about change. In addition, many IUSM and IUSN stakeholders discussed how creating a culture that fosters IPE and IPP remains important when attempting to implement changes in health professions education and practice. Whether talking about creating or fostering an IPE culture, participants’ responses indicated that changes necessitate ‘leaping forward’ and a shift in thinking.

**Let our sacred cows die.** Many stakeholders suggested that the only way to progress with IPE and IPP is to address the existing attitudes and stereotypes in current

health professions education and practice. Although in general, interviews with individuals from the IUSM and the IUSN revealed support for the concept of IPE, attitudes about changing current practice and implementing IPE persist.

Although most participants seemed supportive of IPE, they voiced that exposing attitudes is important because it illuminates the fears that can impede IPE efforts. Some stakeholders stated that understanding why individuals resist change is key to moving forward (ma2, p. 5; ma4, p. 12). Despite several participants' discussions about how time constraints, unparalleled calendars, and limited space can hinder IPE efforts (ma3; ma4, p. 16; na4, p. 3; nf1, p. 6), one nursing administrator alluded that educators may blame the difficulty of implementing IPE on logistics, but attitudes about change are often the culprit. She explained that discussions of scheduling and money problems always arise, but the real problem is faculty members' attitudes about educating in this manner:

Frankly, I think here's the problem. Not everybody wants to team-teach in their discipline, much less across disciplines. (na2, p. 4)

One medical administrator echoed this nursing administrator's view about how implementing IPE might be met with faculty resistance. She stated that some faculty might fear or resist culture shifts in education and practice because they might not know what IPE means and/or their own training did not incorporate it:

You're taking people who did not train in a model and asking that there's enough, not only passion, but understanding about what we're really talking about to develop things that are explicit and planned.... I mean, why do people resist any kind of change? It's usually they don't understand, they're fearful of the change, they don't know what their role is in the new changed environment, or they don't know that they have the skills. So that's all under fear—they don't know that they have the skills to do what's being asked of them in the new environment. (ma2, p. 4)

This medical administrator's quote highlights not only the attitudes and resistance to change, but also faculty fears about not feeling equipped to handle the changed environment. Another medical faculty member talked about how feeling uncomfortable about interacting across professions may result from unwarranted faculty fears about having nothing in common with faculty from other professions (mf3, p. 18).

In addition to fears about not possessing the skills to teach and/or work in an IP environment and concerns about interactions with individuals from other professions, medical and nursing administrators mentioned they have heard faculty trepidations about organizing curricula to incorporate IPE. A medical and nursing administrator talked about how faculty feel they need to rearrange curricula to 'make room' for IPE (ma4, p. 12; na1, p. 6). A nursing faculty member echoed this concern when discussing her own teaching. Although very supportive and enthusiastic about IPE, she talked about the difficulty of letting go of already established curriculum and becoming open to curricular changes. Additionally, she stated that in order to arrive at a point where IPE is the norm in health professions education, she and others must relinquish control over past curricula and embrace newer pedagogies: "I think that as we come together, we have to realize that some of us are going to have to let our sacred cows die...that we're going to have to say maybe what we thought was important was not important" (nf1, p. 12).

***Leaping forward.*** Although participants discussed how the culture has the potential to shift to one that is more interprofessionally oriented, several voiced questions about how to advance from the current state of education to fully embedding IPE into health professions education. Many stakeholders recognize that both professions carry historical "baggage" (na4, p. 7) and all agreed that implementing and sustaining IPE at IU

poses an extreme shift from current practice. Although aware of the benefits of IPE, stakeholders recognize that challenges accompany culture change and that culture shifts may take years and/or generations. One medical faculty member discussed how oftentimes culture shifts create “collisions” (mf2, p. 15) or confrontation within the institution, but these collisions lead to opportunities for change and improvement of current practices:

So I think it's a culture of collisions. Everybody views a collision as bad, but I view the collision as good cause maybe there's a little bit of damage at first, but let's face it, you know each other now and chances are you're gonna do something different together. (mf2, p. 15)

This medical faculty member's view on the culture of collisions highlights that obstacles may accompany the shift to a more IPE-focused environment, however as individuals and schools unite, the potential for change is great. Similar to this medical faculty member's view, a nursing administrator discussed how culture shifts and education changes over the years have benefitted the healthcare field. Her story of a charge nurse stopping her work to hold charts for physicians on the floor led to a comment about the damage historical burdens bring to the physician-nurse dynamic:

She'd be like a human file, and the physicians would grab [a chart] and they'd shove it back in when they were done.... So sometimes nurses are our own worst enemies because there's something in our history about, 'Don't be too outspoken. Don't rile the waters.' And I think it's getting better. I think that the quality movement has really helped, but I think we're not going to understand the power differences until we understand the baggage we, both disciplines, bring along. (na4, p. 7)

This quote highlights the view that while this nursing administrator remains optimistic about curricular changes, she feels professions must quash historical rivalries and cultures that harbor non-interprofessional practice. Another nursing administrator supported this notion about letting go of the past and moving forward. She voiced that although she is



unsure of how IPE implementation will occur, health professions schools must resign antiquated teaching models:

I do think in order to make it happen, we have to let go of the old ways of educating—not just in nursing, but across the board—and we’re just not too sure yet how to do that. (na3, p. 14-15)

These quotes reiterate that while individuals at the IUSN and IUSM recognize the challenges of implementation, they desire and support IPE across professions.

In order to shift the culture of health professions education and practice, participants stated that the institution must foster an IP environment. Most participants said that the culture of the institution holds the key to creating a supportive IP environment. One medical administrator talked about how the culture must represent what the institution believes and values and the people who work and study at the institution must subscribe to the culture. He discussed this notion from two angles:

One is, as an institution, you need to declare up front the culture that you value. You need to do everything you can to reinforce that.... If you say you value collaboration and teamwork, then you need to do all sorts of things to reinforce that. If somebody is not adhering to those values, call them on it. I think the other part is what I would call a substrate. So, making sure at the student level you work as hard as you can to make sure you’re admitting the right students who come in with that mental framework. (ma3, p. 4-5)

He and another medical administrator added that critical to fostering an interprofessional environment is ensuring that the culture and practice structures align and learners do not perceive inconsistencies. In addition, faculty members remain essential in cultural shifts because they propagate culture. One medical faculty member reported that resistance to change can be an issue, which is why supportive faculty can make a difference in disseminating information about IPE: “the culture of medicine is sometimes so resistant

to change, especially medical education, so the faculty member[s] who support interprofessional education, their voices are so important” (mf3, p. 15).

A medical administrator supported this view and discussed how new students, faculty, and staff must be informed about the importance of IPP and acceptable work environments. In addition, he stated that in order for an interprofessional culture to flourish, these individuals must subscribe to and internalize the culture:

You teach the nurses. You say to them, ‘Look, no matter where you end up, if you’re not working together in teams and coordinating with other professions, it’s not good for you or the patients.’ And teach them to expect it and demand it. That’s how we can get some change here. (ma1, p. 15)

This quote alludes to the dynamic nature between health professions culture and education. One medical administrator discussed how IPE holds the power to influence culture. When asked about a culture of collaboration and equality, he stated that it took him a long time to understand the resources and expertise others could offer, but “I think that’s where IPE can have the most impact, in my mind” (ma4, p. 10). He added that IPE during undergraduate health professions education could catalyze the culture shift by jumpstarting students’ understanding of successful work environments and the culture of collaboration and instilling in them the value of individuals from other professions.

***Theme summary.*** Through quotes and conversations, culture shift was an evident and significant topic among the IUSM and the IUSN stakeholders. The conversations about the current culture led stakeholders to discuss attitudes about culture shifts and changes in curricula as well as ways to move beyond the challenges of implementing IPE and imagine ways to create and sustain a culture that fosters IPE at IU. Stakeholders’ dialogue about culture shifts illustrated the notion that some individuals need to ‘let

sacred cows die' and relinquish antiquated teachings, stereotypes, and beliefs. In addition, participants voiced that in order to change the culture to one that is more IPE-centered, the institution must 'leap forward' and not only embrace change, but create change.

### **Chapter Summary**

This chapter elucidated findings from interviews with participants from the IUSM and the IUSN. Five themes emerged that elucidated participants' understandings and conceptualizations of IPE and IPP. The next chapter further elaborates on these themes through an in-depth discussion of this research.

## Chapter 5: Discussion

This chapter expands on and analyzes the findings noted in Chapter 4, illuminates the importance of the findings, discusses the implications of the research at this institution, and suggests opportunities for future supplementary research.

### Revisiting the Framework

Although this research aimed to garner conceptualizations about IPE while foregoing interprofessional practice (IPP), none of the stakeholders solely talked about IPE; practice always entered the conversation—even for those unfamiliar with the term. Participants seemed comfortable talking about what occurs in practice and they spent much of the interview time discussing their experiences in the clinical environment. Despite not focusing on the interprofessional collaborative practice portion of the framework when designing this study, participants' thorough discussions about their experiences in clinical rotations and practice indicated that education about *interprofessionalism* in the IPP environment cannot be overlooked. Although many of the stakeholders are unaware of the specific IPE framework, they linked education to practice and discussed institutional, organizational, and educational factors that play a role in IPE and developing *interprofessionalism*. Importantly, the *interprofessionalism* concept captures the interconnectedness between the education and practice spheres of healthcare and the dynamic influences on these environments. As the framework suggests, all individuals engaging in IPE for patient-centered practice play a role in creating an interprofessional environment. Additionally, all environments (i.e., educational and professional) contribute to stakeholders' understanding and conceptualizations of IPE and IPP. Data collected from participant interviews confirmed that IPE and IPP go hand in

hand. Consequently, the institution should make a concerted effort to not only focus on IPE measures, but also emphasize the importance of continuing education for individuals in the practice setting and creating environments that foster IPP.

### **Revisiting the Themes**

**The business of medicine.** Several of the interviewed IUSM administrators and faculty members discussed the limited reimbursement and/or reward for team-teaching or collaboration across professions. The lack of reward for teamwork and/or efforts spent on IPE endeavors conveys a message (even if it is not true) that teamwork and IPE are not valued at IU. Because of the competitive and complex health professions education and practice environments, why would faculty want to team-teach or facilitate IPE-related activities without reward for their time and efforts? The lack of financial reward for IPE and the “perverse” (ma3, p. 4) reimbursement system in clinical care seems to disenchant those involved with or interested in IPE.

While lack of reimbursement seems to impact faculty involvement and interest in IPE, reward exists in other capacities for those who engage in IPE. For example, IPE facilitation may help clinical faculty improve quality of care, become better physicians and educators, and establish additional connections with faculty from other professions (Lindqvist & Reeves, 2007). Additionally, students educated by these faculty members may become better physicians and participants in interprofessional collaborative practice as a result of IPE. Furthermore, as noted in the upcoming sections, reward and reimbursement are not the only factors that can prevent commitment to IPE—hierarchy, attitudes, and the healthcare culture play a role as well.

Participants' views about reward and recognition echo in the literature as well. For example, Page et al. (2009) reported that the lack of recognition, reward, and reimbursement for IPE efforts can substantially impede implementation. Although IU strives to develop students' skills and knowledge to better prepare them for practice, the faculty members who teach these students recognize that their clinical work generates more money for the institution than their teaching roles. Money remains a key factor in how the system operates. Therefore, the question of how to set up a system that not only rewards and reimburses faculty and students for educating and learning in an interprofessional manner, but also keeps the already complex system financially stable and productive remains and is pertinent to this discussion. Page et al. (2009) offered solutions to this barrier that include the following: assistance from an IPE office in obtaining grant monies for IPE scholarship; recognition of individuals who participate in IPE; and including IPE efforts in the negotiations and scheduling of teaching and/or clinical positions. Clearly, in order to recruit and retain individuals who invest in IPE, those in administrative and leadership positions should deliberate about reward and recognition (monetary and non-monetary) and develop strategies to attract individuals to participate in IPE.

In addition to reward and recognition for IPE, participants talked about how institutional practices advance segregation in the health professions. This study's findings concur with the Institute of Medicine's (IOM) report that hospitals, healthcare organizations, and groups of practitioners operate in silos (IOM, 2001). Furthermore, one interviewed medical faculty member talked about the separation of health professions literature by profession and/or discipline. In addition to these segregated entities,

participants also may experience the effects of these separations because of the deep-rooted history that exists between the professions and the culture of the institution (see the ‘Culture shift’ section). This finding suggests that the structure of the education and practice sectors may cause individuals to forget or disregard entities outside of his/her comfort spheres—especially without reward. The bottom line is this: building networks across professions can not only culminate in positive and productive professional relationships within the IU system, but also improve the much broader and powerful goal of quality of care.

Interestingly, individuals from the IUSM discussed the medical hierarchy several times throughout the interviews. Notably, interviewed individuals from the IUSM discussed the hierarchy in healthcare much more than individuals from the IUSN. As one IUSM participant discussed, the hierarchy is “palpable” (ma2, p. 5). This conveys that the hierarchy is a powerful factor in healthcare even though some physicians may not consciously think about it and the nurse-physician ‘game’ is still alive in modern medicine (see Stein, Watts, & Howell, 1990). Some argue that natural hierarchy and nurse-physician conflict exists because of the differences in education between the two professions (Blickensderfer, 1996). Perhaps this hierarchical structure originates from historical relationships between physicians and nurses and how medical students are “taught to be...independent problem-solvers, whereas collaboration and advise-seeking [sic] are encouraged in nursing education” (Blickensderfer, 1996, p. 128). Regarding hierarchy and team leadership, this study’s findings concur with the report of Weller, Barrow, and Gasquoine (2011) in that the physician has the ultimate authority in patient care settings because of his/her ultimate responsibility for the patient. However, Weller et

al. found that the nurses *and* physicians believe this sentiment, whereas IUSM participants in this study discussed physician leadership more than IUSN participants. Because IU stakeholders perceive and recognize differences in education and leadership roles, discussions on this topic most definitely belong in health professions education.

Despite some participants mentioning that hierarchy is unfavorable in the healthcare setting and can impede IPE efforts, no one talked about how or if the hierarchy benefits the healthcare team. More importantly, no one talked about *whom* the hierarchy benefits. Indeed, if physicians sit at the ‘top’ of the hierarchy, they must benefit from this structure. The person on ‘top’ can and does exercise power over those who reside lower in the hierarchy. One IUSM faculty member stated that doctors sometimes take pride in knowing that they “rule the room” (mf1, p. 4). This notion begets the question of whether physicians are concerned about the power differences in medicine if they benefit from this structure. Despite practicing nurses’ descriptions of the little power they have in the healthcare setting in contrast to the physician’s power (Malloy et al., 2009), hierarchy and leadership are not necessarily detrimental to the healthcare team or patients and interprofessionalism can still exist in their presence. Furthermore, if individuals do not abuse the hierarchy, the structure can assist the healthcare team and ultimately improve quality of care and benefit the patient. For example, in a code situation, the team leader (the individual exercising the most power at that time) makes life-saving and/or life-changing decisions that impact the patient. Because participants articulated evidence of hierarchical structures in healthcare, conversations about professional ethics within hierarchical and team structures belong in health professions education.



In addition, participants noted the dynamic and inconsistent healthcare teams throughout IU. Because of the dynamic nature of these teams and their vast scope of health professionals' roles, it can be difficult to decipher where everyone 'fits' in the healthcare environment. Like Kramer and Schmalenberg's findings (2003), participants stated a number of factors influenced the team's membership such as the patient's needs, relationships between nurses and physicians on the unit, the individuals on the team, and the hospital. Kramer and Schmalenberg described five different types of relationships between the nurse and physician that range from collegial, where power and knowledge are "different but equal," to negative (p. 36). Because of these different relationships and the various patient needs and care settings, all team members must understand the roles and value of individuals on teams. Therefore, teamwork training and training on the roles of health professionals in work environments are pertinent and essential topics belonging in IPE at IU.

Although participants described various nurses' roles, some IUSM participants made it seem as though the nurse was considered a 'helper' or an assistant to the doctor rather than a valuable asset to patient care. One medical faculty member's recollection of a nurse presenting "a bagel with the right cream cheese" to the physician illustrates this mindset (mf1, p. 8). The notion of the nurse as a 'helper' to the physician was not only discussed in faculty interviews, but also in interviews with students. Students mentioned that the nurse was sought in team meetings "if you needed a nurse" (ms3, p. 6). Interestingly, Day, Field, Campbell, and Reutter (2005) found that second year nursing students identified themselves as "helpers" in the patient care setting (p. 640). However, Day et al.'s

participants did not view the ‘helper’ role as negative, but rather considered themselves helpers to patients and the overall nursing process. If nurses identify as ‘helpers’ (even if they do not view this as negative), this suggests why they might be perceived as ‘helpers’ to medical students and/or physicians in the work setting. This finding suggests that those in the field of nursing and medicine may view and define roles differently. Again, this hierarchy and ‘helper’ notion is not necessarily negative when interactions center on respect and do not perpetuate an incorrect professional role or label. Despite the IUSM students and faculty conveying this ‘helper’ role, the IUSM student participants revealed they did not know the full scope of nursing roles and practice. In turn, students (and potentially some faculty) unfamiliar with the roles of nurses and/or their own roles may not understand that nurses are more than ‘helpers’ and assistants to physicians. Interprofessional education provides the opportunity to define, discuss, and enhance understanding about these roles. Hence, as the structure of IPE curriculum takes shape, it will be vital that stakeholders engage in conversations about roles, role conceptualizations, and stereotypes across professions.

These findings highlight and reiterate the importance of reward and reimbursement for IPE and the necessity for dialogue and education on leadership, hierarchy, and roles of health professionals at IU. The IUSM participants consider these entities powerful influences on the business of medicine and the institution as a whole. Participants’ descriptions of factors in the business of medicine make the business of medicine seem engrained and rigid,

which is not conducive to achieving an environment centered on interprofessionalism. Time equals money, especially for those who straddle many roles, and reward and compensation for IPE efforts is critical. If stakeholders perceive IPE as a means to create safer, more efficient and financially beneficial healthcare decisions, they might feel more inclined to educate and learn in IPE environments.

As individuals at IU continue to discuss and structure more intentional IPE curricula, the school should consider how to reward faculty *and* students for their IPE efforts. For example, as the medical school has competency-based curricula, certain IPE activities may fulfill specific competencies such as communication or life-long learning.

The concept of equal partnerships is a critical component of effective healthcare teams, so logically and importantly, each health professional must understand and agree on the meaning of equal partnerships within these teams. In the context of IPE, equal partnerships mean all members offer equal contributions to the healthcare team and deserve respect (WHO, 2010). Although some scholars argue that IPE cannot exist within a hierarchical system (see Olenick et al., 2010) and hierarchy poses challenges to IPE (Oandasan & Reeves, 2004), the reality is that respectful and appropriate hierarchy allows the system to function, and equal partnerships can coexist in that system as well.

The findings from this theme support the notion that stakeholders should receive training about leadership, hierarchy and power, and the roles of varying professionals in the healthcare setting. Interviewed stakeholders in this study

recognize the benefits of IPE, and if more IPE training exists, students will be better prepared for clinical training and practice, faculty will be further equipped to educate and perform their roles, and administrators will be more informed about how to structure curriculum that fosters IPE and IPP.

**The power of experience.** Each stakeholder endured different experiences that shaped their views on teamwork, IPE, and IPP. Clearly these stories have significance to the participants and indicate the importance of exposure to and interactions with individuals from other professions.

When reading through the interview transcriptions and thinking about their deeper meaning, the researcher realized that participants' experiences highlighted the issue of respect in the patient care setting. What stakeholders learned through these experiences extended beyond knowledge necessary for patient care; most of these experiences encapsulated the notions of communication, respect, and the value of others in the work setting. For example, one IUSM administrator discussed how nurses worked to ensure that he knew how to do procedures before they did them, and this captures the idea that he not only gained respect for nurses, but also earned respect from nurses through this experience. This story and others indicated that respect was reciprocally shared after individuals realized the value of one another's profession. These findings suggest that those who work in healthcare environments that encourage interactions across professions may value and see the importance of IPP more than those without interprofessional experiences.

The information gathered from interviews also revealed that conceptualizations of interprofessionalism develop at many levels—in undergraduate education, graduate

education, and in patient care and academic settings. This presents a warrant to include everyone in IPE efforts so all parties reside on the same page and work together to create an interprofessional environment. Perhaps the most enlightening piece of ‘The Power of Experience’ theme is the way students discussed their educational experiences. Clearly for students, shaping occurs throughout the entire duration of nursing and medical school. What students experience during their education, whether interprofessional or not, shapes their perceptions and conceptualizations of IPE and IPP and forecasts what they will encounter in future practice. This finding insinuates that IPE can shape students’ views and inform their future practice. Indeed, what is learned and modeled in the pre-licensure phase of education carries into the post-licensure phase (Oandasan & Reeves, 2005b).

Similar to Dillon et al.’s (2009) findings about IPE simulations, this research suggests that socialization into one’s profession occurs during education, and experiences in the educational setting influence attitudes and perceptions about collaboration. Additionally, students exposed to IPE vocalize about and reflect on their experiences with individuals from other professions. Because students (nursing students, in particular) remain open to discussing IPE and their IPE experiences, faculty should feel equipped to field questions and student concerns about IPE. Faculty training regarding how to facilitate and foster an IPE environment belongs in IPE endeavors. Appropriate and effective training of faculty could help faculty create environments where students feel supported and become more comfortable discussing IPE. Furthermore, faculty development would convey to students that IPE is engrained in the curricula and critical to their education.

In addition to the variety of experiences that occur throughout one's education, students' stories also indicated that practitioners in the field are powerful shapers in students' understanding of healthcare dynamics. Despite this, one cannot assume that individuals who teach students know how to effectively and efficiently interact across professions. Similar to what Oandasan and Reeves (2005b) reported, this study's findings indicate that faculty influence students and can have a powerful positive or negative influence on IPE efforts. Additionally, students highly regard individuals in teaching and ancillary roles (e.g. unit secretaries, patient care technicians, and professionals not in the teaching role) and these individuals in the healthcare setting model behaviors—negative and positive—that students procure. Like Ware's (2008) findings with nursing students, students in this study "take it all in" (p. 10) and are socialized and shaped by their school, faculty, patients, the classroom, and clinical rotations. Hence, every experience in education should be as pertinent and meaningful as possible. To achieve this, faculty must recognize the role they play in shaping students and IU should focus attention on education of practitioners already working in the healthcare setting. Indeed, if students participate in IPE, faculty should as well. Barr (2009) reported that continuing interprofessional education, or interprofessional education that is ongoing and occurs among professionals who practice in the healthcare setting, "heightens critical awareness of shortcomings in service delivery and drives collective action" (p. 148).

Frankly, the current educational system at IU sends a message—intentional or not—that IPE is not important in health professions education. However, findings indicate that experiences in the academic setting are powerful for students, faculty, and administrators. This suggests that IPE should not stop at the undergraduate nursing and

medical education level. Instead, IPE belongs in the undergraduate, graduate, and continuing nursing and medical education sectors. Interprofessional education should infuse into all health professions education (academic and professional settings) with the goal of communicating and applying these skills and this mentality beyond academia and into work environments. To limit the teaching of IPE to the pre-licensure phase of education, limits the prospect of IPE culture propagating within clinics, hospital systems, and beyond. Stakeholders discussed how experiences in the academic setting influenced their views about collaboration and teamwork, therefore, creating intentional and planned IPE experiences for students, faculty, administrators, and others in the practice setting is imperative. This theme reveals that as the institution begins to understand the shaping of IPE conceptualizations, IU is better equipped to design, implement, and sustain IPE efforts.

**Desire for IPE.** Overall, nursing and medical students communicated that they value opportunities to learn and work with students and professionals from different professions. Several studies reported similar findings about students generally having positive attitudes about IPE and shared learning (Horsburgh, et al., 2001; Margalit et al., 2009; McFayden et al., 2010; Tunstall-Pedoe et al., 2003; Worzala, Glaser, & McGinley, 2006).

Despite overall positive attitudes about collaboration across professions, nursing student participants voiced more enthusiasm and eagerness for IPE than medical student participants. One nursing student described how she was “hungry” for more simulation opportunities with other professions (ns4, p. 14). Nursing students’ enthusiasm for future IPE endeavors may stem from their exposure and positive response to IPE simulations.

Similar to other studies with health professions students (Curran et al., 2010; Mikkelsen Kyrkjebø, Brattebo, & Smith-Strom, 2006), nursing students exposed to simulated learning environments (i.e., simulated patients) enjoyed and were satisfied with the experience. Perhaps nursing student participants seemed more open to IPE because four of the five reported some personal experience working with other professions and the one student without IPE experience heard about positive simulations involving nursing and medical students. Furthermore, many of the interviewed nursing students felt valued and part of the healthcare team after experiencing an IPE activity. Dillon et al. (2009) found that nursing and medical students' attitudes toward nurse-physician collaboration improved after experiencing an IPE simulation. Many of the students from the Dillon study reported that they felt valued after the simulation and valued the students from the other profession as well. In addition, nursing student participants had more intentional exposure to medical students (especially in simulations) and nursing IUSN faculty members gave the impression of being more deliberate about encouraging nursing students to communicate and interact with medical students.

Again, three of the four interviewed medical students in this study were initially tentative about IPE, but became more open to the idea as they talked about collaboration, communication, and teamwork. Their initial hesitation seemed linked to not knowing how IPE would 'look' in the educational environment. Perhaps the medical students had difficulty visualizing IPE in these settings because only one completed an IPE simulation with nursing. Additionally, that student was the only one to not express tentativeness about IPE. Any student (medical and otherwise) without IPE experiences or opportunities to work with faculty who model positive interprofessional behavior may voice more



hesitancy about IPE. Like Reese, Jeffries, and Engum's (2010) findings, students in this study may feel uncertainty about IPE experiences because of the newness of the situation, their perceived inadequate knowledge, and/or their lack of understanding of their own roles. Intentionally placing engaging IPE opportunities in education may allow students to see its value in their education and the worthiness of their time and money.

Interestingly, some students discussed uncertainty about working with nursing students because of the differences in academic levels. Interviewed medical students may not recognize that both nursing and medical students need to understand many similar concepts (Page et al., 2009) such as communication, ethics, history taking, and other skills (Rafter et al., 2006). Medical students also discussed how they feel that they do not have additional time to devote to learning with, from, and about other professions. Several authors have pointed to barriers to IPE related to time (Gilbert, 2005; McPherson et al., 2001; Page et al., 2009) and crowded curricula (Rafter et al., 2006; Rosenfield, Oandasan, & Reeves, 2011). Embedding meaningful and relevant IPE into current curricula may combat concerns about shortage of time and crowded curricula.

Similar to Bradley, Cooper, and Duncan's (2009) discovery with nursing students, IUSM students expressed hesitation about working with IUSN students because they were more comfortable working with students within their profession. One medical student voiced that she interacts well with other medical students because they know what she is "going through" and experience "the same thing[s]" (ms2, p. 10); however, interacting with students outside of her profession poses challenges because she cannot as easily relate to them. Bradley et al. called this notion "tribal affiliations," meaning that students express allegiance to individuals within their profession because that is whom

they are used to working and learning with (p. 917). Additionally, one study reported that medical students have the best interactions with residents in the healthcare setting and nurses with other nurses because individuals tend to discuss patient care with those in their own profession (Nadolski et al., 2006). Furthermore, medical students may not perceive an “incentive” to familiarize themselves with nursing roles and responsibilities (p. 5). As Nadolski et al. suggested, this could relate to the notion that some medical students may not view nurses as relevant to their education because nurses do not grade them while in the clinical setting. Although students articulated and literature supports loyalty to individuals within one’s own profession, IPE could reduce the ‘tribal affiliations’ stemming from disconnected health professions education and create opportunities for students to transform their thinking about students from other professions.

Despite medical students’ tentative language when asked about IPE, they were more open to IPE as the interviews progressed. Medical students may feel apprehensive about working with other professions because they “never really thought about it” before the interview (ms3, p. 15). As students reflected on experiences, they seemed to realize that “you can’t learn medicine in a vacuum” (ms3, p.15) and IPE in undergraduate medical education could help prepare them for practice.

Importantly, this theme reveals that exposure to IPE-related activities can make students feel valued and part of a team. Several studies have pointed to the increase in positive attitudes about IPE and/or IPP after an IPE experience (Dillon et al., 2009; Earland et al., 2011; Margalit et al., 2009). This finding suggests that students who feel valued in an IPE setting are more likely to express interest in IPE and positively relate to

the concept. Accordingly, IU ought to identify knowledge and skills that lend themselves to IPE (e.g. communication, IV starts, NG tube insertions) in order for students to understand that they can benefit from teaching, learning, and interacting across professions.

**Enthusiasm, hope, and investment in IPE.** Overall, the majority of interviewed nursing stakeholders expressed enthusiasm about the concept of IPE and its role in upcoming curricula. They also voiced that their IPE experiences have been mostly positive for the parties involved (see ‘Light bulb moments’ and ‘Experience is the best teacher’ sections). The enthusiasm, hope, and investment interviewed nursing stakeholders exhibit for IPE likely stem from both a need and a desire for the concept. Interviewed nursing stakeholders expressed enthusiasm and investment in IPE for the following potential reasons: they experienced IPE in some capacity and value the benefits of these opportunities; discussions about IPE are leading to more formal, concrete measures to implement IPE curricula; and nursing accreditation standards require IPE.

The IUSN is accredited by organizations that require IPE, so nursing stakeholders are invested in IPE out of necessity. The American Association of Colleges of Nursing updated its ‘essentials’ in 2008 to include IPE. One administrator voiced that accreditation changes made her realize that “we have to start really doing this [IPE]” (na1, p. 4). These standards created an overt push for IPE in the field of nursing, and therefore required more aggressive measures to include IPE into curricula. Without following accreditation standards, the IUSN could incur penalties or, more drastically, lose their accreditation. Therefore, following current standards ensures that the IUSN maintains their status as an accredited nursing school.

Interestingly, it seemed as though enthusiasm, hope, and investment in IPE resulted much more from a desire than a need. The IUSN faculty members and administrators have thought about IPE for several years (some since 2005) and IPE is finally coming to fruition at the institution. Similar to the finding about the IUSN students' desire for more IPE, nursing students, faculty, and administrators view IPE as a valuable component to nursing education. Stakeholders may feel an "identity" to IPE (na3, p.13) because the field of nursing revolves around collaboration and patient-centered care. They have either experienced IPE firsthand, observed IPE, or witnessed detrimental consequences from a lack of interprofessionalism. Faculty may express enthusiasm and hope for IPE because they have witnessed non-interprofessional practice and communication breakdowns that impact patient care. Additionally, the nursing stakeholders stated that they valued collaboration and IPP especially after working in collaborative patient care environments.

This theme illuminates that individuals in the IUSN are not only capable change-agents, but also enthusiastic about current and expanded IPE at the institution. Because the nursing school has developed and refined IPE experiences and maintained an investment in IPE efforts for several years, these individuals will serve as "prime movers" as the institution progresses and continues IPE efforts (na1, p. 9). This also underscores the importance of policy and policymakers as the accreditation updates within the field drove stakeholders to become more familiar with IPE and its role in nursing education and practice. In the future, it will be critical to form liaisons with policymakers in order to help infuse IPE into all health professions. Ultimately, these findings indicate that those who express enthusiasm about IPE make a difference in the

health professions education landscape. They plant a seed for others that helps ensure continual discussions about IPE in health professions conversations, ongoing development of IPE-related activities, and dissemination of IPE across the institution.

**Culture shift.** Interviews brought forth the notion that the health professions system and culture impede IPE and IPP. Because attitudes, stereotypes, and historical tensions accompany culture and take generations to quash, implementation and sustainment of IPE requires as many active and engaged individuals as possible.

Although the institution has a long road ahead in creating a culture that embraces IPE and IPP, continuing efforts related to IPE have begun and promising changes are on the horizon. Until the recent development of the Center, IPE efforts have been limited to small, often informal interactions across professions and discussions in curriculum meetings about IPE as it relates to curriculum revision and reform. Despite many stakeholders' support for IPE, concerning attitudes remain about IPE and IPP and efforts made to include IPE into education and practice environments are not at pace with the call for IPE. Like Blue et al. (2010), participants reported calendars and scheduling as a significant barrier to IPE implementation and sustainment; however, most of the participants who commented on challenges stated that negative attitudes about IPE present a major barrier to implementation. Perhaps attitudes about implementation remain because of fear about unknown educational territory. This fear may be why some stakeholders, especially faculty members, may not be able to "let go" of old ways and their ownership on courses and curriculum (na3, p. 15; nf1, p. 12). As one medical administrator mentioned, fear may exist because of changes in roles with IPE curricula or stakeholders' lack of knowledge and understanding of IPE. Notably, because most

student participants expressed unfamiliarity with IPE terminology, this suggests that they may have limited ways of constructing definitions of IPE because of the limited experiences to guide them. Furthermore, stressing the value of IPE to those who may feel undecided about IPE or not understand the concept will be crucial as IU proceeds with implementing more formal activities.

As stakeholders begin to conquer fear of the unknown, one medical faculty member urged that they not fear “collisions” (mf2, p. 15). This finding suggests that in the past, individuals and the institution have ‘danced’ around issues related to culture and shifts in culture to avoid confrontation or conflict. Indeed, these shifts become difficult, especially when dealing with deep-rooted histories (see ‘The business of medicine’ section), beliefs, and culture. However, the institution’s and individual school’s efforts to engage in discussions around IPE are healthy and led to promising forward steps in the IPE movement. These forward steps resulted in the Center, which will serve as a venue for continued IPE conversation, networking, and action at IU.

The culture shift is not only necessary in the education sector, but also in the practice environment. The WHO reported that shifts in how individuals think about IPE and interact with one another would refine the culture of healthcare, improve attitudes about collaboration, and benefit the entire community (WHO, 2010). In order for IPE success at IU, the researcher suggests vertical and horizontal disbursement. This notion disseminates IPE across all levels and all environments. For example, vertical spread requires expansion of IPE from administrators to students and from practice to education. Horizontal spread includes disbursement across the same level (i.e., student to student or faculty to faculty). D’Amour and Oandasan (2005) concluded that collaboration across all

levels (i.e., educators, practicing professionals, researchers, etc.) is necessary and in order to expand and develop interprofessionality, stakeholders must subscribe to change. The successful integration of IPE requires involvement of many people including patients, practitioners, educators, leaders, and policy-makers (WHO, 2010).

In order for IPE to become the norm at IU, this “requires shifts in tradition, education, and practice which will ultimately result in changing the current health care paradigm” (Olenick et al., 2010, p. 76). The appropriate time for the institutions’ ‘champions’ to take the lead, move forward, and create change is now. Interprofessional education necessitates not only top-down support, but also grassroots buy-in and efforts. Consider the transition to an IPE-embracing culture a snowball effect that first requires engagement and commitment, then builds with ‘champions’ discussing and developing appropriate and appealing educational curricula, and then increases in size and impact through IPE dissemination and application at all academic and practice levels. As one medical administrator voiced, IPE requires “intentional” and planned curricula (ma2, p. 4) otherwise it conveys that IPE is not an essential component in pre-licensure education (Oandasan & Reeves, 2005a).

Certainly, these findings outline stakeholders’ current understanding and conceptualizations of IPE. And, as the institution moves forward with IPE, these findings can help catalyze IPE efforts and provide a foundation for beginning IPE structures and culture at IU. Further, these findings reiterate and substantiate the following important IPE recommendations for the institution:

1. The institution cannot afford to only focus on IPE. Interprofessional education and IPP go hand in hand and both sectors obligate attention.

2. *All* stakeholders who devote time, energy, and effort to IPE deserve reward and reimbursement (monetary and non-monetary).
3. Schools and individuals may require assistance in forging relationships with those outside their field and comfort zones.
4. Leadership, roles, and team training regarding appropriate hierarchy and mutual respect belong in IPE.
5. Individuals at all levels and in all settings (i.e., students, educators, practitioners, patients, etc.) require IPE in order for IU to become an interprofessional institution.
6. More intentional IPE experiences belong in education.
7. The institution should create faculty, professional, and student development opportunities in order to engage and inform individuals about IPE and immerse them in the IPE/IPP culture and curricula.
8. The institution must continue to develop, revise, infuse, research, and disseminate IPE efforts so that IU sends an overt message that IPE is the researched and practiced standard.

### **Suggestions for Future Research**

Given the limitations mentioned in Chapter 3, the findings, and the implications of this study, several future research opportunities emerge from this research. These suggestions offer the opportunity for further discovery about IPE and its impact on education, practice, and quality of care.

This study captured administrators,' faculty, and students' understanding and conceptualizations of IPE at one specific moment (i.e., the time of interview). Although



this specific moment is important to recognize the basic level of understanding and IPE conceptualizations prior to formal implementation of IPE, capturing stakeholders' evolution of understanding and the changes in their conceptualizations over time could lead to powerful inferences about the effectiveness of IPE programming. For this reason, a longitudinal study may provide a more comprehensive understanding of stakeholders' definitions and conceptualizations of IPE and hone in on how formal IPE experiences influence conceptualizations.

Although this study did not specifically relate to communication, teamwork, and attitudes about individuals from other professions, these concepts emerged throughout the interviews. Because stakeholders repeatedly discussed these ideas, clearly they believed them as important. Future studies could focus on these topics and pose questions that bring forth participants' perceptions about these particular subjects.

Additionally, this study did not capture IPE conceptualizations for those outside of nursing and medicine. A natural expansion of this study could involve administrators, faculty, and students from professions other than medicine and nursing (e.g. physical therapy or pharmacy) and/or stakeholders from outside IU. A study including other professions could capture well-rounded conceptualizations from several different angles. Furthermore, future studies could include participants on the other side of healthcare—the patient side. Walrath et al. (2006) noted that patients and their families view the healthcare system through a different lens and offer a different perspective from those who are intimately involved with patient care. Interviewing patients would capture their understanding and perceptions of the healthcare team, team member communication, and

collaboration. Interviews with patients about these topics may help health professions schools and educators refine teaching to improve patient care.

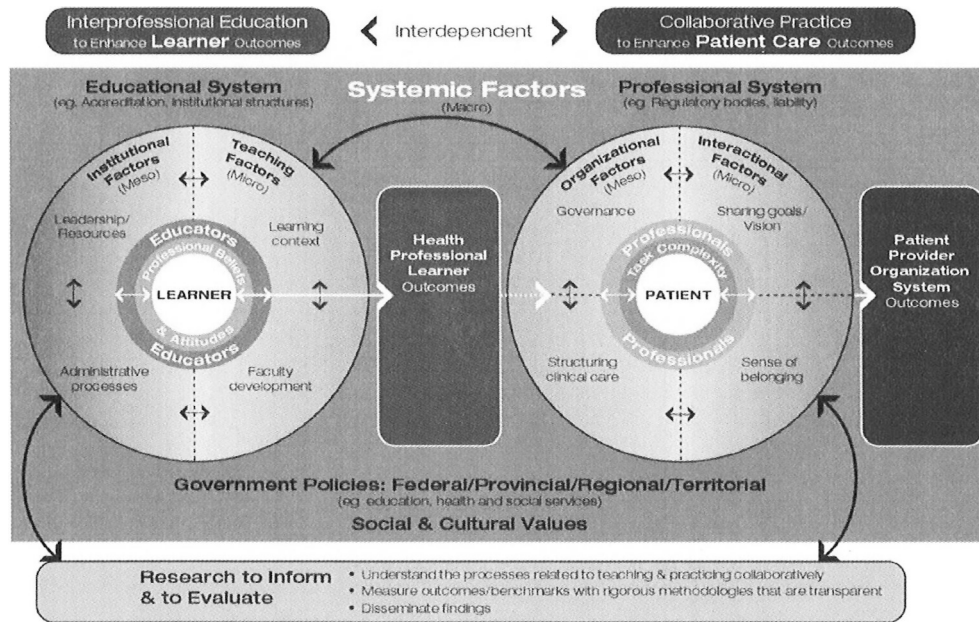
Although this study was not aimed to better understand how professionals outside the clinical faculty role conceptualize IPE or IPP, it would be interesting to discover how these practicing individuals understand these concepts. In addition, comparing practicing medical and nursing professionals' conceptualizations of IPE and/or IPP to medical and nursing students' conceptualizations of IPE and/or IPP would illuminate commonalities and differences in practitioners' and students' perceptions of interactions across professions.

Finally, throughout interviews, the concept of institutional culture arose and participants discussed how this culture can impede IPE efforts. Because culture seemed important to stakeholders, a more in depth study on how the culture of the institution impacts education and practice would be fascinating and, most likely, influential in future curricular efforts at IU.

## **Conclusion**

The findings of this research inform individuals about students,' clinical faculty members,' and administrators' baseline understanding and conceptualizations of IPE, as well as provide foundational information to guide future IPE research and application endeavors. Furthermore, this study informs IU about IPE's influence on curricula, stakeholder learning, and institutional culture. Participants voiced a clear need and desire for IPE at IU and the findings outline and affirm the tools necessary for successful IPE programming. In order to progress and expand IPE efforts at IU, those involved with implementation should contemplate the following IPE strategies: integrating IPE in the

pre and post-licensure phases and educating stakeholders about leadership, hierarchy, and roles; rewarding individuals for IPE and IPE-related efforts; offering more IPE opportunities in order for stakeholders to forge relationships and better understand one another; and conducting research on current and future IPE undertakings. With determined and fervent use of these findings, IPE can be instilled within the IU educational and professional culture, and this institution can potentially advance to interprofessional renown.



*Figure 1.* Interprofessional education for collaborative patient-centred practice: An evolving framework. From “Interprofessionality as the field of interprofessional practice and interprofessional education: An emerging concept,” by D. D’Amour & I. Oandasan, 2005, *Journal of Interprofessional Care (Supplement 1)*, 8-20.

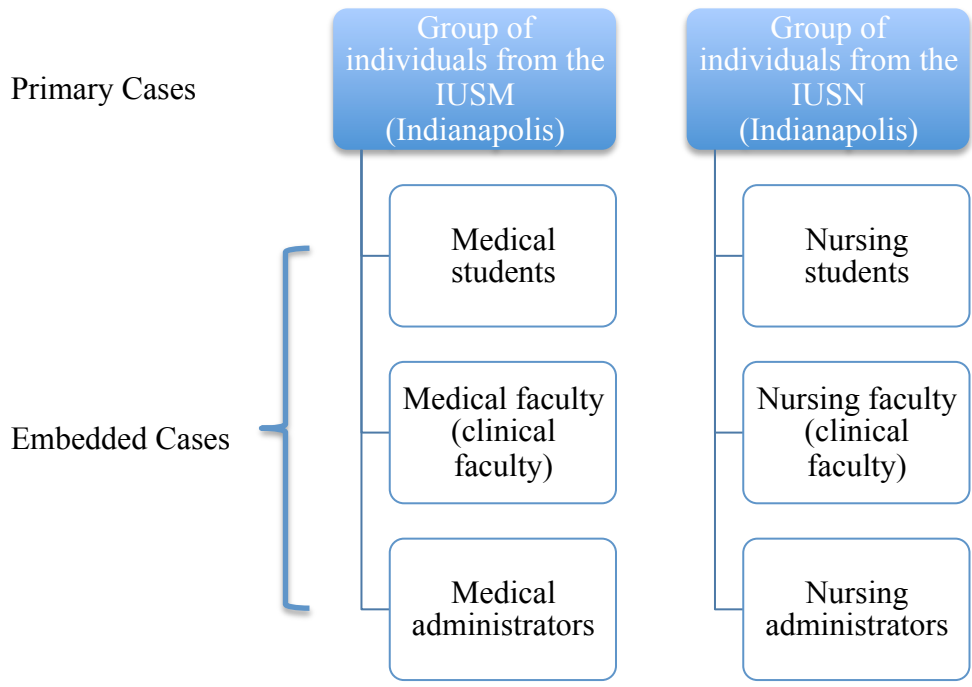
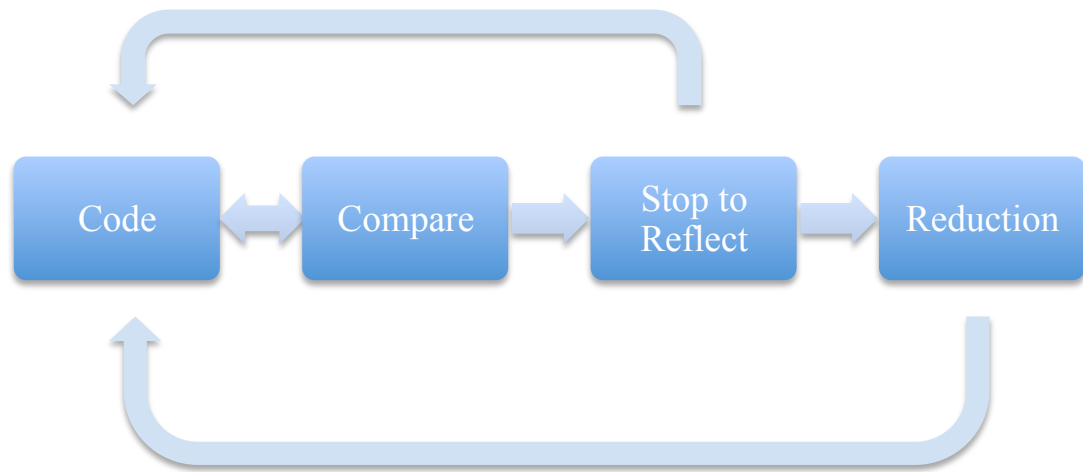
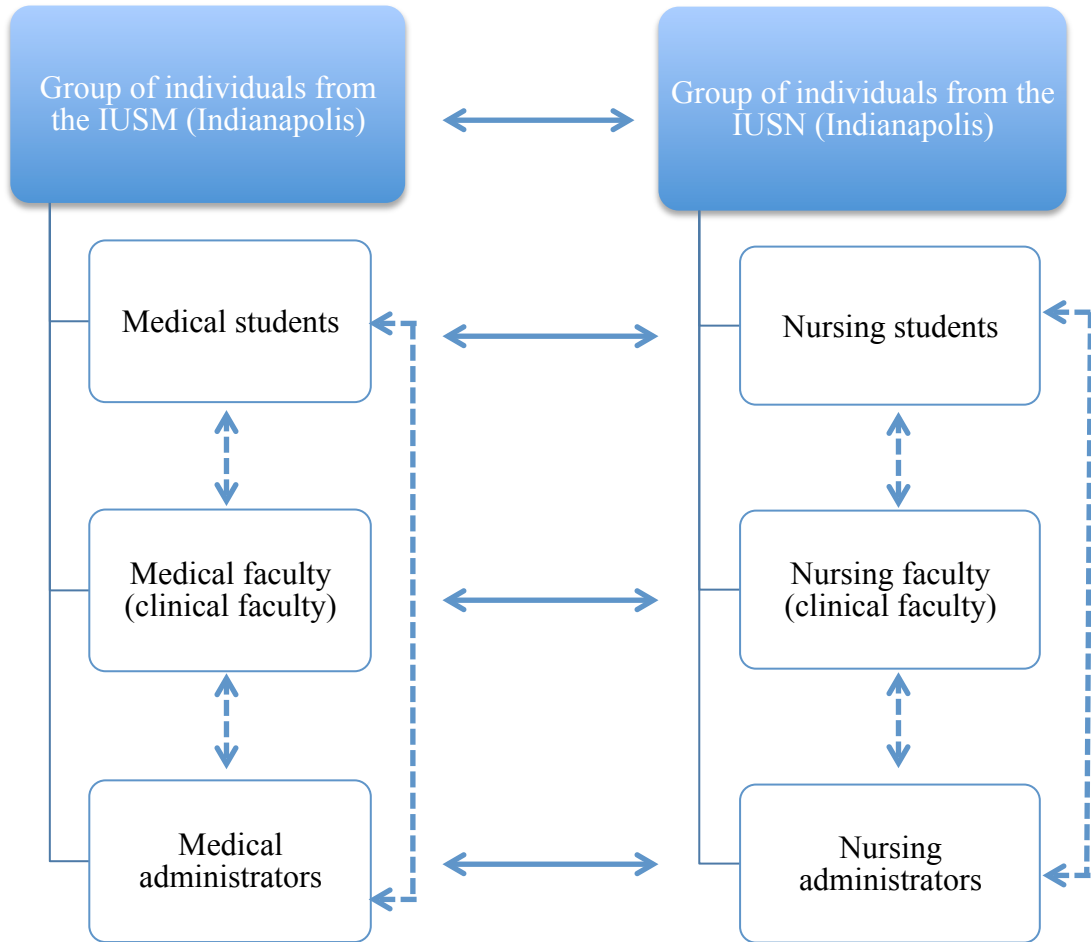


Figure 2. Primary and embedded cases.



*Figure 3.* Steps in data analysis.  
Adapted from Glaser & Strauss, 1967



*Figure 4.* Phases of data analysis. Solid arrows indicate Phase II analysis. Dotted arrows indicate Phase III analysis.

## Appendix A

### **INDIANA UNIVERSITY STUDY INFORMATION SHEET FOR**

#### Understanding Interprofessional Education: A Multiple-Case Study of Students, Faculty, and Administrators

You are invited to participate in a research study about students', faculty, and administrators' understanding of the concept of interprofessional education (IPE). Pre-licensure students, clinical faculty, and administrators from the IU School of Medicine (Indianapolis) and the IU School of Nursing (Indianapolis) have been invited to participate. You were selected as a possible subject because your experiences and/or conceptualizations of IPE can contribute to the understanding of IPE at Indiana University (Indianapolis). We ask that you read this form and ask any questions you may have before agreeing to be in the study.

The study is being conducted by Robert J. Helfenbein from the Indiana University School of Education-IUPUI and Katherine Henkin from the Indiana University School of Medicine, Department of Anatomy and Cell Biology.

#### **STUDY PURPOSE**

The purpose of this study is twofold. First, the researchers will explore and describe how groups of students, faculty, and administrators at the IU School of Medicine (Indianapolis) and the IU School of Nursing (Indianapolis) understand the concept of interprofessional education (IPE). This research will be occurring at a time when curricular reform is transpiring, but there is little formal IPE curriculum involving both schools; hence your understanding of IPE will be elicited prior to implementation of a formal IPE curriculum involving both schools. Second, your understanding of IPE will be compared within the groups and across the groups. For this research, IPE will be defined as "when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes" (WHO, 2010, p. 7).

#### **PROCEDURES FOR THE STUDY:**

As a potential participant in this study, you are eligible to participate in a one-on-one interview and/or focus group. The researchers will select individuals to be interviewed and/or part of a focus group based on his/her role in the IU School of Medicine (Indianapolis) or the IU School of Nursing (Indianapolis).

If you agree to be in the study, you will do the following things:

Take part in a one-on-one interview and/or a focus group. Participants will only be interviewed once unless the researcher asks for another one-on-one interview and you agree. If you participate in a one-on-one interview, you may be asked to participate in one subsequent focus group. If you participate in a one-on-one interview the researcher will ask you questions related to the purpose of the study. If you participate in a focus group you will be asked questions related to the purpose of the study, but these questions will be discussed among the participants in the focus group. If you do not wish to answer



any of the questions for any reason, you do not have to answer and the researchers will move onto the next question.

All interviews and focus groups will be audio-recorded. This research has a data collection period of 3-5 months. One-on-one interviews will be approximately 45-60 minutes. Focus groups will be approximately 60 minutes. If you participate in a one-on-one interview, you may be asked to participate in one subsequent focus group.

### **CONFIDENTIALITY**

Efforts will be made to keep your personal information confidential. You will have an identification number and a pseudonym to protect your identity. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Your identity will be held in confidence in reports in which the study may be published. Only the researchers will have access to the data. The interviews and focus groups will be audio-recorded and the tapes and transcriptions will be stored in a locked file in the researcher's office and on a password protected computer. The researchers will destroy the audiotapes and delete the files upon the completion of the study.

Organizations that may inspect and/or copy your research records for quality assurance and data analysis include groups such as the study investigators, the Indiana University Institutional Review Board or its designees, and (as allowed by law) state or federal agencies, specifically the Office for Human Research Protections (OHRP).

### **PAYMENT**

You will not receive payment for taking part in this study.

### **CONTACTS FOR QUESTIONS OR PROBLEMS**

For questions about the study, contact the researchers Katherine Henkin at (605) 376-4838 or Robert J. Helfenbein at (317) 274-1408.

For questions about your rights as a research participant or to discuss problems, complaints or concerns about a research study, or to obtain information, or offer input, contact the IU Human Subjects Office at (317) 278-3458.

### **VOLUNTARY NATURE OF STUDY**

Taking part in this study is voluntary. You may choose not to take part or may leave the study at any time. Again, you do not have to answer any question or take part in the study if you feel the questions are too personal or if talking about them makes you uncomfortable. Leaving the study will not result in any penalty or loss of benefits to which you are entitled. Your decision whether or not to participate in this study will not affect your current or future relations with the IU School of Medicine or the IU School of Nursing.

## Appendix B

### IPE Recruitment Email

Dear \_\_\_\_\_,

My name is Kate Henkin and I am an Anatomy Education Ph.D. student conducting research on student, faculty, and administrators' understanding and conceptualizations about Interprofessional Education (IPE). Pre-licensure students, clinical faculty, and administrators from the IU School of Medicine (Indianapolis) and the IU School of Nursing (Indianapolis) are being asked to participate.

You are invited to participate in this research because your experiences and/or conceptualizations of IPE can contribute to the understanding of IPE at Indiana University (Indianapolis) and may help guide and mold curricula as time progresses.

Your participation in this research is completely voluntary. If you agree to be a participant in this research, you will be asked to take part in a one-on-one audio recorded interview and/or a focus group.

If you choose to participate or have questions, please email or call me or Robert J. Helfenbein by [insert date].

I appreciate your consideration.

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## Appendix C

### Research Matrix

	<b>Documents/Participants</b>	<b>Information Gathered</b>	<b>Setting</b>
<b>Document Analysis</b>	<ul style="list-style-type: none"> <li>• IUSM and IUSN websites, IUSM curriculum competencies, curricular reform documents, summary of IPE conference, description of the Center</li> </ul>	<ul style="list-style-type: none"> <li>• Information on IPE</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>Interviews</b>	<ul style="list-style-type: none"> <li>• Students (4 from IUSM; 5 from IUSN)</li> <li>• Faculty (4 from IUSM; 4 from IUSN)</li> <li>• Administrators (4 from IUSM; 4 from IUSN)</li> </ul>	<ul style="list-style-type: none"> <li>• How an individual understands and conceptualizes IPE</li> </ul>	<ul style="list-style-type: none"> <li>• Private room</li> </ul>

## Appendix D

### IPE Interview Protocol

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Date & Time:

Location:

Thank you for taking the time to participate in this interview. My name is Kate Henkin and I am a PhD student in the Department of Anatomy & Cell Biology conducting this research for my dissertation on Interprofessional Education. I am interviewing students, faculty, and administrators from the IU School of Nursing and IU School of Medicine to learn more about their understanding of interprofessional education (IPE).

Today, I would like to discuss your experiences and understanding of IPE at IU. There are no right or wrong answers; I am interested in your view.

This interview will be audio recorded. Please speak up, so I don't miss any of what you say. This session is confidential and should last about 45-60 minutes.

1. What does IPE mean to you?
    - Probe 1: Have you heard the term IPE? If so, in what context?
  2. How did you come to know this?
  3. What are your experiences with IPE or IP collaboration?
  4. Is it important to you to be able learn with, from, and about other professions? If so, why?
  5. What are the perceived benefits and/or challenges of IPE?
  6. In what ways would IPE impact your studies/work?
  7. In what ways would IPE impact future practice/work? OR If you were taught IPE during your education, how would this impact your current practice?
  8. How should IPE be played out in the health professions?
    - Probe 1: When should it occur in curriculum?
    - Probe 2: Who should be involved?
  9. What does a positive interprofessional interaction look like?
    - Probe 1: When members of the healthcare team work interprofessionally, what determines that it was a positive interaction?
    - Probe 2: What does a negative interprofessional interaction look like?
-

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10. In what ways are student/faculty/administrators' understanding of IPE important for IPE implementation?

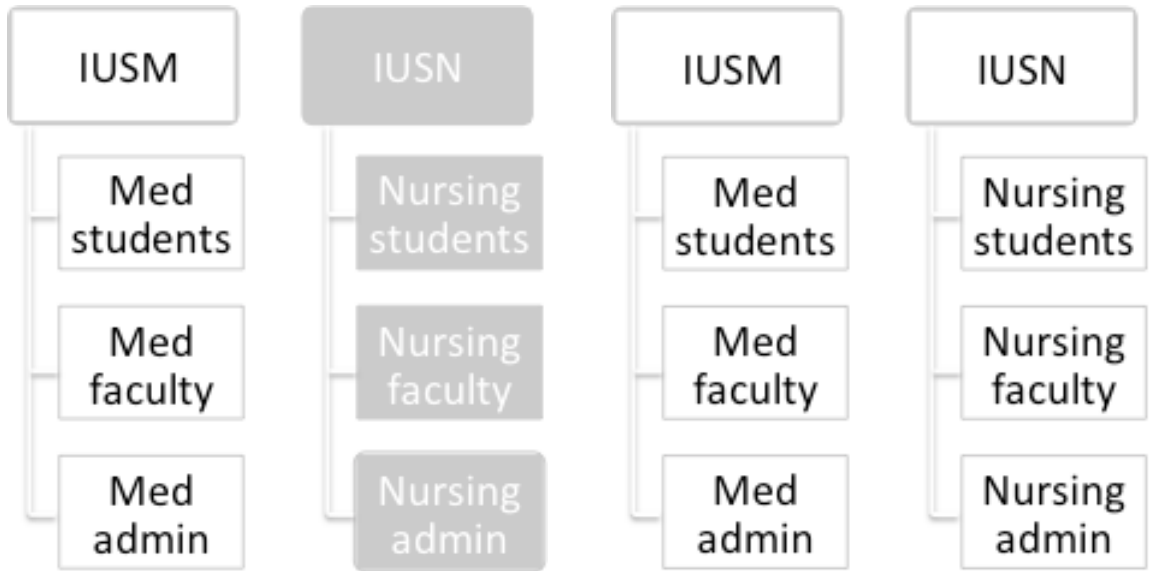
11. Is there anything else I need to know at this time about your understanding of IPE?

Thank them and remind them that their comments will be confidential. Let them know that you might need additional information later and you will be contacting them if necessary.

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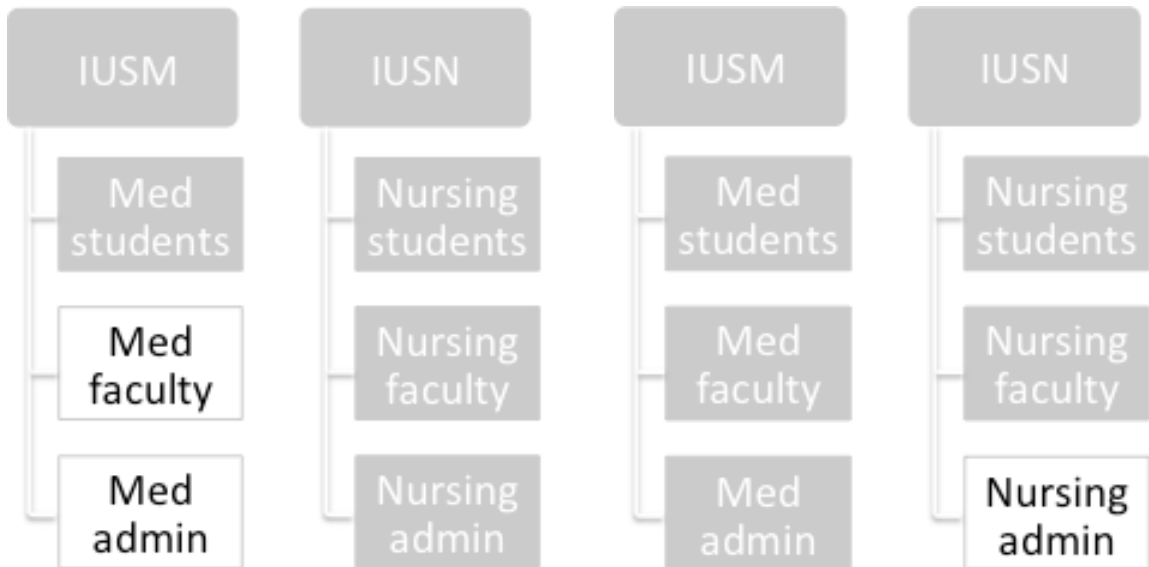
Appendix E

Composite Graphic for Themes  
(unshaded rectangles indicate who represents the theme)



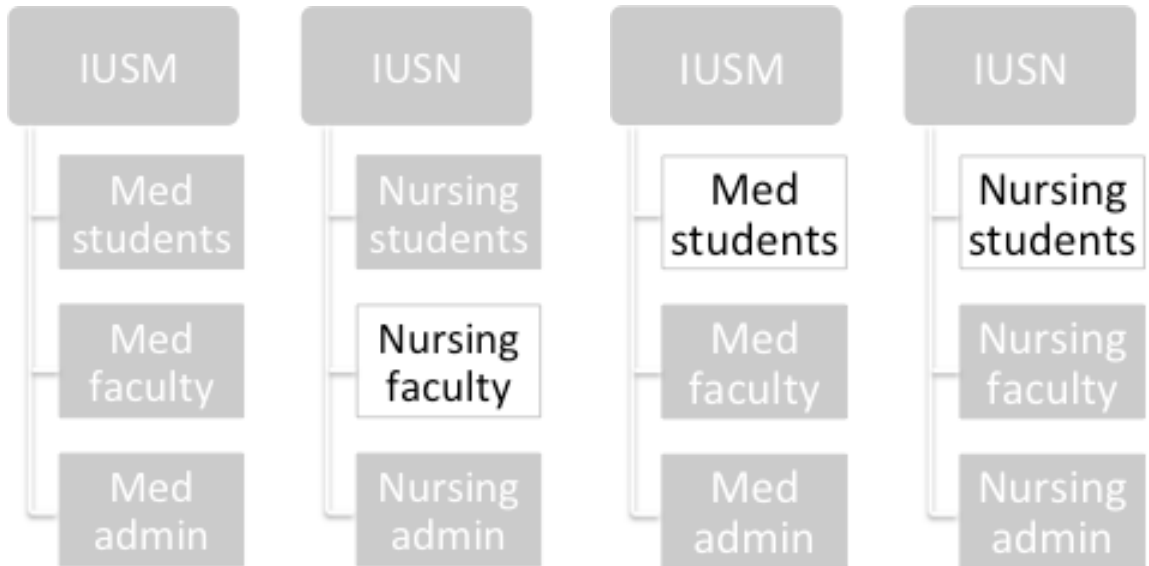
(1a) Theme 1: The business of medicine

(1b) Theme 2: The power of experience



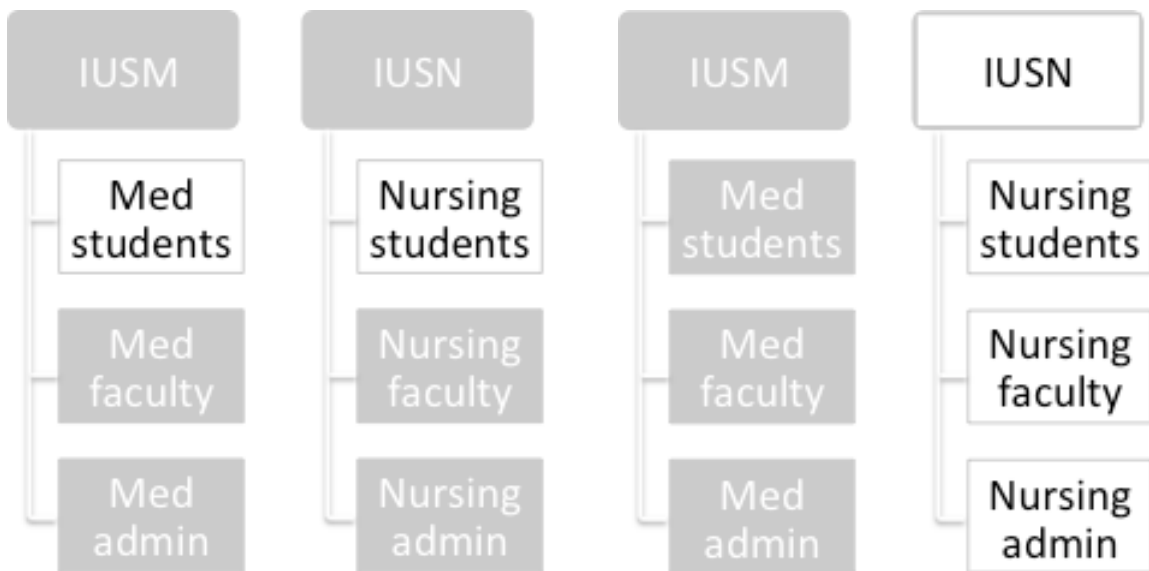
(2b) Theme 2: The power of experience  
Subtheme: Two heads are better than one

(3b) Theme 2: The power of experience  
Subtheme: Woven experiences



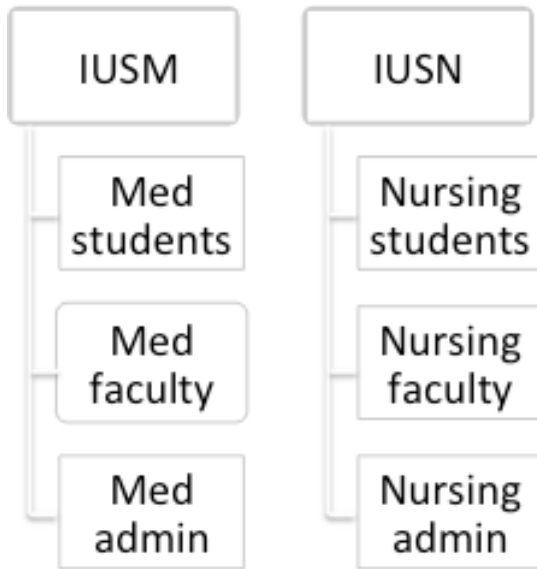
(4b) Theme 2: The power of experience  
Subtheme: Light bulb moments

(5b) Theme 2: The power of experience  
Subtheme: Experience is the best teacher



(1c) Theme 3: Desire for IPE

(1d) Theme 4: Enthusiasm, hope, and investment in IPE



(1e) Theme 5: Culture shift



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## CURRICULUM VITAE

**Katherine Henkin**

### Education

<b>Doctor of Philosophy, Anatomy &amp; Cell Biology (Minor: Education)</b> Indiana University, Indianapolis, IN Dissertation Title: Understanding Interprofessional Education: A Multiple-Case Study of Students, Faculty, and Administrators	2009-2013
<b>Master of Science in Clinical Anatomy</b> Creighton University, Omaha, NE	2007-2008
<b>Bachelor of Arts in Nursing</b> Augustana College, Sioux Falls, SD Magna Cum Laude	2004-2006
College of St. Catherine, St. Paul, MN, Pre-Nursing Studies	2003-2004
University of St. Thomas, St. Paul, MN, Biology Major	2001-2003

### Teaching Experience

<b>Indiana University School of Medicine</b> <i>Graduate Teaching Assistant</i> <ul style="list-style-type: none"><li>• <b>Medical Gross Anatomy</b> Gross Anatomy Laboratory Teaching Assistant: prepared the prosections for the course, performed laboratory demonstrations prior to gross anatomy labs, prepared and proctored practical exams, posed and fielded questions during laboratory sessions, and assisted with medical students' dissections in the laboratory</li></ul> Graduate Student Lecturer: prepared and presented a lecture on the heart for the medical and physical therapy students enrolled in medical gross anatomy  Academic Tutor: conducted weekly academic tutoring sessions for a medical student who had questions related to anatomy	2009-2012
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- **Medical Neuroscience & Clinical Neurology**  
 Neuroscience Laboratory Teaching Assistant: prepared the laboratory for the medical and physical therapy students and posed and fielded students' questions during the labs

Graduate Student Lecturer: created a pre-class brainstem review sheet for medical and physical therapy students, prepared and presented a case-based lecture on the brainstem and an atlas neuroanatomy session on the forebrain to medical and physical therapy students, and created multiple-choice test questions for the course test bank
- **Graduate Basic Histology**  
 Histology Laboratory Teaching Assistant: assisted graduate students with identification of histological slides, and posed and fielded questions during the lab

Graduate Student Team Based Learning Facilitator: prepared and facilitated a Team-Based Learning session on the digestive system

Academic Tutor: conducted bi-weekly academic tutoring sessions for a graduate student with histological-based questions and concerns
- **Graduate Functionally-Oriented Human Gross Anatomy**  
 Anatomy Laboratory Teaching Assistant: posed and fielded questions in the graduate anatomy lab

Graduate Student Lecturer: prepared and presented a heart lecture for graduate students
- **Graduate Neuroanatomy**  
 Neuroanatomy Laboratory Teaching Assistant: prepared the laboratory for graduate students, and posed and fielded questions during the lab

Graduate Student Lecturer: prepared and presented a thalamus lecture and activity for graduate students
- **General Surgery Intern Orientation Session**  
 Anatomy Laboratory Facilitator: conducted a review session for surgical interns that centered on the inguinal region

**Ross University School of Medicine, Commonwealth of Dominica,  
West Indies**

2009

*Anatomy Laboratory Demonstrator*

- Instructed 1<sup>st</sup> and 2<sup>nd</sup> semester medical students in the gross anatomy laboratory
- Prepared and proctored anatomy practical exams
- Conducted anatomy tutoring and private study sessions for medical students

**Creighton University**

2008

*Graduate Teaching Assistant*

- Medical Gross Anatomy: prepared the prosections for the gross anatomy labs, performed laboratory demonstrations prior to gross anatomy labs, conducted tutoring and review sessions for medical students, created review questions for medical students, prepared and proctored anatomy practical exams, and attended every laboratory session to pose and field students' questions

*Graduate Student Lecturer*

- Presented a lecture on the thyroid gland and surrounding structures to peers in the Clinical Anatomy graduate program

*Academic Tutor*

- Medical Gross Anatomy
- Undergraduate Anatomy for nursing students

**Nursing Experience**

**United Hospital, St. Paul, MN**

2006-2007

*Registered Nurse, Intensive Care Unit*

- Responsible for providing care to patients/clients in critical condition
- Documented progress of critical patients/clients
- Contributed as a member of a comprehensive medical team
- Responsible for effectively communicating with family's of critically ill patients/clients
- Ongoing critical thinking within an acute setting

**Avera McKennan Hospital, Sioux Falls, SD**

Summer, 2005

*Professional Development Program (PDP)*

- Chosen by Avera McKennan to participate in ten-week internship in the Intensive Care Unit
- Responsible for practicing and improving nursing skills, critical thinking skills, medication administration skills, and communication skills with patients, families, and hospital personnel
- Responsible for a final presentation including analysis of an internship case study and a summary of the PDP program

**Research Experience**

**Indiana University School of Medicine**

Department of Anatomy and Cell Biology

- Conducted dissertation research on student, faculty, and administrators' understanding and conceptualizations of interprofessional education

Department of Surgery

- Assisted a PhD Surgical Educator and a Surgeon in the development of a surgical checklist for surgical residents performing laparoscopic surgery on pigs

**Indiana University School of Nursing**

- Assisted a nursing faculty member with refinement of a survey and helped facilitate a focus group centered on the survey

**Indiana University-Purdue University Indianapolis**

School of Education

- Conducted interviews and began preliminary coding of data for a National Science Foundation funded research project on Project Enhanced Learning in engineering courses

**Poster and Platform Presentations**

Henkin, K. (2012, February 25). *Evaluating Predictors of Academic Performance in Medical Gross Anatomy for Students who complete a Masters Level Anatomy Preparatory Course*. Platform presentation at the American Association of Anatomists Regional Meeting, Chicago, IL.

Henkin, K., Guillot, G. M., & Shew, R. L. (2011, September 9). *Evaluating the Effects of Previous Anatomy Experience on Academic Performance in Medical Gross Anatomy*. Poster presentation at the Anatomy Research Forum, Indianapolis, IN.

## **Professional Societies**

American Association of Anatomists  
American Association of Clinical Anatomists  
Central Group on Educational Affairs, a Regional Group of the Association of American Medical Colleges  
Sigma Theta Tau International, Honor Society of Nursing

## **Professional Development**

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|---|---------------|
| <b>Academy of Teaching Scholars</b>   | 2010-2013     |
| <ul style="list-style-type: none"><li>• Participated in and completed Tier One: The Foundation of Teaching Excellence Program in order to develop and grow as an educator</li></ul>   |               |
| <b>Interprofessional Education Committees</b>   |               |
| <ul style="list-style-type: none"><li>• Interprofessional Education Curricular Reform Team (led by the Indiana University School of Medicine) <span style="float: right;">2011-2012</span></li><li>• Interprofessional Education Task Force (led by the Indiana University School of Nursing) <span style="float: right;">2011-2012</span></li><li>• Planning Council for the Educating Health Professionals in Interprofessional Care Faculty Development Conference <span style="float: right;">Spring, 2012</span></li></ul> |               |
| <b>Interprofessional Education Conference/Workshop</b>  | April, 2012   |
| <ul style="list-style-type: none"><li>• Participated in Educating Health Professionals in Interprofessional Care Faculty Development Conference</li></ul>   |               |
| <b>Department of Anatomy and Cell Biology/McGraw-Hill Professional Publishing</b>   | January, 2011 |
| <ul style="list-style-type: none"><li>• Asked by the Basic Science Educator at McGraw-Hill Professional Publishing to review Junqueira's Basic Histology Text and Atlas and suggest ways to improve the way material is presented in the text</li></ul>   |               |
| <b>Graduate Board Member, Ethics</b>  | 2008          |
| <ul style="list-style-type: none"><li>• Nominated to participate in the Graduate School Ethics Board at Creighton University</li></ul>  |               |