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Impact of Interdisciplinary Patient Safety Education for Nursing Students and Medical Students on Collaboration and Teamwork

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Impact of Interdisciplinary Patient Safety Education for Nursing Students and Medical Students on Collaboration and Teamwork

by

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Introduction

Since the days of Hippocrates, the dictum “first do no harm” has been the foundation upon which physicians, nurses, and other health care professionals have developed and operationalized professional standards of practice and standards of care. This axiom was the driving force for such visionaries as Semmelweis, Jenner, Nightingale, Salk, and others in the ongoing development of knowledge to improve the human condition. However, the increasing complexity that exists in 21st century health care, intensified by rapidly changing medical technology and increased patient expectations, has presented many challenges to health care professionals in the delivery of safe patient care (Stevens, 2002). As was reported in the Institute of Medicine (IOM) landmark study “To Err is Human” (IOM, 2000), thousands of Americans die each year as a result of medical errors. A key recommendation from this report was that “patient safety programs should establish interdisciplinary team training programs for providers that incorporate proven methods of team training, such as simulation” (IOM, 2000, p. 14). This recommendation was reiterated in “Crossing the Quality Chasm” (IOM, 2001). In the 2003 follow up report on education for the health professions, the IOM created a vision to guide all programs and institutions providing clinical education to health professionals. Specifically, the IOM recommended that “all health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics“(IOM, 2003, p. 3). The IOM recommendations inferred that interdisciplinary education would improve collaboration and teamwork among health professionals and thus would improve patient safety. The purpose of this project is to test
this inference to determine whether interdisciplinary patient safety education between graduate nursing students and medical students, which incorporates team training methods, will improve the collaboration and teamwork between these groups of students, which will be essential to the delivery of safe patient care as these students transition into the professional role.

**Background and Significance**

The Harvard Medical Practice Study first depicted the extent of harm to patients experienced in U.S. hospitals due to medical management and substandard care (Brennan et al., 1991). A review of 30,121 randomly selected medical records of patients discharged in 1984 from 51 hospitals in New York showed that an adverse event occurred in 3.7% of the hospitalizations (Brennan et al., 1991). Follow up analysis of these adverse events found that drug complications were the most common type of adverse event, followed by wound infection and technical complication (Leape et al., 1991). A high proportion of the adverse events were due to management errors and many were potentially preventable (Leape et al., 1991). Similarly, in a study of the relationship between malpractice claims and medical negligence in Utah and Colorado, researchers found that the incidence of negligent adverse events exceeded the incidence of malpractice claims and that the elderly and the poor were most likely to be among those who would suffer negligence and not sue (Studdert et al., 2000). The rate of malpractice claims did not correlate with the incidence of medical mismanagement.

The results of Harvard Medical Practice Study, coupled with the results of the malpractice study in Colorado and Utah, were instrumental in the development of the report “To Err is Human” which stated that 44,000 to 98,000 Americans die each year due to medical errors (IOM, 2000). Retrospective medical record reviews from the United Kingdom, Denmark, New Zealand, Canada and Australia revealed results similar to those reported in the United States.
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(Walton & Elliott, 2006). Researchers in Australia reviewed medical records of over 14,000 admissions to 28 hospitals in New South Wales and South Australia (Wilson et al., 1995). Results of the study revealed that 16.6% of admissions were associated with an adverse event which resulted in disability or an extended hospital stay for the patient. Fifty-one percent of the adverse events were considered preventable (Wilson et al., 1995). These results prompted the Australian Council for Safety and Quality in Health Care to publish the “National Patient Safety Education Framework” (NPSF) in 2005 to describe what health professionals needed to know about patient safety (Wilson et al., 1995). Additionally, in response to studies conducted in the United Kingdom and Europe, the Association for Medical Education in Europe (AMME) called for patient safety education to be integrated throughout medical student undergraduate education and emphasized the importance of interprofessional education on patient safety (Sandars, Bax, Mayer, Wass, & Vickers, 2007). Ninety-five percent of the participants at the 2006 AMME symposium recommended joint learning opportunities among physicians, nurses, and pharmacists (Sandars et al., 2007). And finally, the IOM in its “Health Professions Education” report recommended that educators, along with accreditation, licensing and certification organizations, should ensure that students and working professionals develop and maintain proficiency in the five core areas of delivering patient-centered care, working as part of interdisciplinary teams, practicing evidence-based medicine, focusing on quality improvement and using information technology (IOM, 2003). This recommendation was made following the conclusion that doctors, nurses, pharmacists and other health professionals were not being adequately prepared to provide the highest quality and safest medical care possible, and there was insufficient assessment of their ongoing proficiency (IOM, 2003).
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In spite of the clearly identified need to improve patient safety education and patient safety, limited progress has been made. In the decade since the release of American reports on patient safety and since the publication of the Quality in Australian Health Care study, system-based changes have not improved patient safety (Runciman, 2010). The Interdisciplinary Nursing Quality Research Initiative (INQRI) recently stated that

Medical errors are still a widespread problem in the American health system. More than 1.5 million Americans are sickened, injured, or killed by medication errors each year. 1.7 million Americans battle illnesses due to hospital acquired infections, 99,000 of whom die”. (Harlow, 2009, p.1)

The Centers for Disease Control and Prevention (CDC) reported that 20% of hospitals failed to conduct time outs before surgery to prevent wrong-site surgeries, and almost 40% of hospitals did not have effective processes for timely reporting of critical test results (National Patient Safety Foundation, 2010). In response to this situation, and supported by the National Patient Safety Foundation, the Agency for Healthcare Research and Quality, The Joint Commission (TJC), and the Lucian Leape Institute, the World Health Organization (WHO) published a curriculum guide, based on the Australian Patient Safety Education Framework, to improve patient safety education and thus improve patient care (National Patient Safety Foundation, 2010; World Health Organization, 2009). This curriculum guideline promotes a patient safety educational model and practice model that acknowledges and supports a health care delivery system that has evolved from an autonomous physician model of care to one that emphasizes collaborative practice and inter-professional teamwork. However, the effectiveness of this guide has not been tested among an interprofessional group of health care professionals. The purpose of this project is to prepare nursing students and medical students to work collaboratively as
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team members in the delivery of safe patient care. Through student participation in an interdisciplinary course based on the World Health Organization (WHO) Patient Safety Curriculum Guide for Medical Schools, graduate nursing students and medical students will have the opportunity to increase their knowledge base and skills regarding current patient safety practices in clinical settings. Additionally, through lecture, simulation, case discussions, small group activities, games, independent study, and improvement projects, the students will have the opportunity to effectively collaborate as members of an interdisciplinary healthcare team. The research question is “will graduate nursing students and medical students, who receive interdisciplinary education utilizing the WHO curriculum and interactive training methods, demonstrate levels of collaboration and teamwork above those demonstrated by students who have received discipline-specific education?” It is hypothesized that graduate nursing students and medical students who participate in an interdisciplinary patient safety education course will increase in their levels of collaboration and teamwork.

Evolution of Medical Education

Abraham Flexner, in his landmark study “Medical Education in the United States and Canada” (Flexner, 1910) discussed how medical education had evolved from the apprenticeship and preceptorship models of the 17th and 18th centuries, to the didactic schools that began in 1778 in Philadelphia with the creation of the Pennsylvania Hospital, and which culminated in the formation of a scientific discipline with the assimilation of medical education into the culture of the university system (Flexner, 1910). The Flexner report brought about many changes in American medicine; however, the most notable was the creation of a single model of medical education and one in which the physician was the dominant player in the delivery of healthcare (Starr, 1984). One hundred years later, Cooke, Irby, Sullivan, and Ludmerer (2006) discussed
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the need for a fundamental redesign of the medical education system to meet the current social, economic, and political aspects of health care delivery. Simulation and virtual reality, as well as clerkships that focused beyond departmental inpatient services and included interdisciplinary approaches, were suggested as effective methods to transform the medical education system to impart the knowledge, skills, and values necessary to prepare physicians in the 21st century (Cooke, et al., 2006).

However, the National Patient Safety Foundation has found little emphasis on patient safety education and training in the curriculum of today’s medical schools (2010). As of 2006 only 25% of medical schools in the United States and Canada had implemented specific patient safety curricula (Alper, Rosenberg, O’Brien, Fischer, & Durning, 2009). Interdisciplinary education and the utilization of simulation and the case study method were noticeable absent (National Patient Safety Foundation, 2010). Both the Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Medical Specialties (ABMS) practitioner competencies focus on the acquisition of knowledge, skills, and attitudes rather than on patient safety education and training (National Patient Safety Foundation, 2010).

However this situation may be changing. Educators at the College of Medicine, Mayo Clinic recently developed a patient safety curriculum for Graduate Medical Education (GME). A total of 21 patient safety topics were identified and objective, structured clinical examination and simulation were employed as effective teaching methods to over 80% of the 1000+ residents and fellows at Mayo Clinic. (Varkey, Karlapudi, Rose, & Swensen, 2009). Although the study participants felt that experiential learning, including simulation, was the most effective method to teach and assess the components of patient safety competence, no
data were presented on the long-term impact of these educational methods on patient care (Varkey, Karlapudi, Rose, & Swensen, 2009). Moreover, the experiential learning was not interdisciplinary.

**Evolution of Nursing Education**

The evolution of the profession of nursing in the United States trailed that of medicine by several decades (D’Antonio, 2010). Before the 1870s, hospital nursing was considered a menial occupation—an occupation of lower class women or individuals who came from the prisons or poorhouses (Starr, 1982). Similar to the reform of nursing in England that was led by Florence Nightingale, upper-class women in New York, over the objections of physicians, led the reform of nursing and promoted the development of training programs for nurses to address the deplorable and unhygienic situations that existed in New York hospitals and almshouses at that time (D’Antonio, 2010; Starr, 1982). However, by 1915 physicians had acknowledged the importance of nursing to patient care. Flexner, in a paper presented before the 1915 Conference on Charities and Corrections, stated

> The trained nurse is making a praiseworthy and important effort to improve the status of her vocation. She urges, and with justice, that her position is one of great responsibility; that she must possess knowledge, skill and power of judgment; that the chances of securing these qualifications, all of them essentially intellectual, improve as the occupation increases in dignity. It is to be observed, however, that the responsibility of the trained nurse is neither original nor final. She, too, may be described as another arm to the physician or surgeon. Her function is instrumental, although not indeed just mechanically instrumental. Yet when all is said, it is the physician who observes, reflect and decides. The trained nurse plays into his hands, carries out his orders, summons him like a sentinel in fresh emergencies,
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subordinates loyally her intelligence to his theory and policy, and is effective in precise proportion to her ability thus to second his efforts (Covert, 1917, 107-108).

Four significant American events—three political and one social--- have advanced both the need for and the development of American nursing (D’Antonio, 2010). The Civil War, manifested by a high number and degree of injuries, confirmed the need for trained nursing professionals. Hence, the Bellevue Hospital School of Nursing, the first school of nursing in America based on the principles of Florence Nightingale, opened in New York City in 1873; the Johns Hopkins School of Nursing, subsequent to consultation from Florence Nightingale, was launched in 1889. The proliferation of hospital-based nursing schools, standardized educational curriculum, regulated practice through licensing laws, and the development of professional standards by professional nursing organizations soon followed. By the early 20th century, trained nurses could be found working in hospitals, in physician’s private practices, and as private-duty nurses.

With the onset of World War I (WWI) and World War II (WWII), the need for trained nurses with the knowledge and skills needed to care for the injured dramatically increased. The U.S. Cadet Nurse Corps was formed to train nurses to serve during WWII and the first Nurse Training Act was established by the federal government in 1943. Spurred on by major technological and medical advances following WWII and challenged by the largest population increase in the country’s history, the federal government responded with legislation to meet the increasing need, as well as the increasing costs of healthcare. The Hill-Burton Act of 1946; the passage of Medicare, and subsequently Medicaid, in the 1960s; the State Children's Health Insurance Program (SCHIP) created in 1997; and the Patient Protection and Affordable Care Act (PPACA) and the Healthcare and Education Reconciliation Act of 2010

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have all stimulated the development of the profession of nursing----both in numbers and in educational requirements (D’Antonio, 2009).

At the same time that these political and social events were unfolding, nursing education was assimilating into the university systems. In 1916, the University of Cincinnati College of Nursing graduated the first baccalaureate-prepared nurses in the United States. The progression of hospital-based diploma programs into university settings led to the 1965 recommendation of the American Nurses Association (ANA) that the baccalaureate degree be the entry level into professional nursing practice (American Nurses Association, 2011). Currently, three different levels of educational preparation for entry into nursing practice exist---hospital-based diploma programs, associate degree programs, and baccalaureate programs. Graduates of all three programs are eligible to take the same licensing exam. However, greater numbers of registered nurses are pursuing advanced degrees in nursing at the master’s and doctoral level to meet the ever-increasing needs of the citizenry.

Two separate accrediting bodies review and accredit nursing programs in the United States. The Commission on Collegiate Nursing Education (CCNE) is an autonomous accrediting agency for baccalaureate, graduate and residency programs in nursing. The National League for Nursing Accrediting Commission (NLNAC) accredits nursing programs from the practical nursing level through the clinical doctorate. Both accrediting agencies have specifically addressed patient safety in the baccalaureate curriculum standards (AACN, 2008; NLNAC, 2008). Additionally, the Robert Wood Johnson Foundation (RWJF) has funded the AACN and the University of North Carolina School of Nursing to develop and implement the Quality and Safety Education for Nurses (QSEN) project (Cronenwett et al, 2007; QSEN, n.d.). The goal of QSEN is to develop standardized competencies and teaching strategies to prepare future nurses with the
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knowledge, skills, and attitudes necessary to the ongoing improvement of quality and safety in the healthcare organizations in which they work (Cronenwett et al, 2007; QSEN, n.d.). Six competencies have been defined by the QSEN project as core to the education of a nurse—patient centered care, teamwork and collaboration, evidence-based practice, quality improvement, and safety. The first five of these core competencies were originally identified by the IOM as “competencies that all health clinicians should possess, regardless of their discipline, to meet the needs of the 21st-century health care system “(IOM, 2003, p. 45). These core competencies are being integrated into the curricula of nursing schools across the country (Cronenwett et al., 2007; QSEN, n.d.). An academic-practice partnership, using the QSEN framework, to educate graduate-level nursing students about health care quality and safety was evaluated at the School of Nursing at the University of North Carolina at Chapel Hill. This partnership, which combined theory, methods, and tools of improvement with practice-based learning, produced high satisfaction among the participants. However, measureable results on patient safety were not determined (Jones, Mayer, & Mandelkehr, 2009).

Interdisciplinary Education

Although the development of medical education and nursing education in the United States has evolved along similar paths, these paths have not intersected in any deliberate manner. The IOM in its landmark report “Health Professions Education: A Bridge to Quality” confirmed that …in the vast majority of educational settings, health professionals are socialized in isolation, hierarchy is fostered, and individual responsibility and decision making are relied upon almost exclusively (Hall and Weaver, 2001). Health professions education occurs largely in an environment of separately housed professional schools and separate clinical arenas governed by powerful separate deans, directors, and department chairs. A lack of
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appreciation of the actual or potential contributions of each of the health professions is reinforced by such settings, and more important, students learn little about the high levels of coordination and collaboration needed to provide quality care for Americans. There is a profound disconnect between current role-oriented, isolated academic preparation and practice environments that rely on teams or wish to do so (Stumpf and Clark, 1999). (IOM, 2003, p. 79).

A recent survey of 35 academic health centers concluded that only 15% had developed any interdisciplinary courses for nursing students and medical students (Larson, 1995). Likewise, Reese (2010) reported that “currently, the majority of medical and nursing programs do not include interdisciplinary or collaborative educational experiences in their curricula” (p. 33). A decade after the publication of “Crossing the Quality Chasm” (IOM, 2001), which stressed the urgent need to redesign the way health professionals are trained,

most physicians and nurses are still educated in silos, making it difficult to later work in a nonhierarchical, team-based culture, says Sam Watson, senior vice president for patient safety and quality at the Michigan Health & Hospital Association and executive director of the MHA Keystone Center for Patient Safety & Quality, the association’s safety and quality-improvement organization. ‘I’m seeing some pockets where there is movement toward workforce training,’ Watson says. ‘There are a few medical schools and nursing schools that are actually putting students together, but it is a long way from where it needs to be. And we also need to address the issue that occurs when residents enter their programs and find an old guard of physicians who might not support that team culture.’ (McKinney, 2011, p. 38).
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Although not the predominant educational model, a number of interdisciplinary patient safety educational programs have been launched. Six such programs focused specifically on curriculum development, methods of instruction, and inter-disciplinary educators (Barnsteiner, Disch, Hall, Mayer, & Moore, 2007; Buring et al., 2009; Haxby, Higton, & Jaggar, 2007; Kearney, 2008; McKeon, Cunningham, & Oswaks, 2009; Wilcock, Janes, & Chambers, 2009), while other programs employed both quantitative and qualitative research methods to measure the intermediate outcomes of interdisciplinary education. Nine studies reported results that were supportive of interdisciplinary patient safety in improving knowledge, skills, and collaboration (Anderson, Thorpe, Heney, & Peterson, 2009; Cooper, Spencer-Dawe, & McLean, 2005; Cox et al., 2009; Hall et al., 2009; Huntington et al., 2009; Margalit et al., 2009; Singh et al., 2005; Wakefield, Carlisle, Hall, & Attree, 2008; Westbrook et al., 2006). The Health Professions Education Collaborative (HPEC), a consortium of health professional education programs from the University of Louisville School of Medicine, Dartmouth Medical School, University of Tennessee Health Science Center Graduate College of Nursing, and the University of Missouri-Columbia School of Medicine participated in a pilot program to teach continuous quality improvement and practice-based learning and improvement (PBLI) to medical and nursing students from three institution (Huntington et al., 2009). Although the sample size was small, participant satisfaction with the curriculum was high and there was no significant difference in PBLI between the two groups (Huntington et al., 2009). Similarly, educators from the University of Missouri in Columbia have reported results about differences among health professional students exposed to an interprofessional patient safety curriculum (Cox et al., 2009). The education was provided annually for six years to medical students, nursing students, health administration students, and respiratory therapy students and focused on patient safety, quality,
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and teamwork. Significant professional group differences existed prior to the interdisciplinary education which were positively addressed within the curriculum and mediated (Cox et al., 2009). A multi-method study to evaluate outcomes of interprofessional patient safety education and the processes by which the outcomes had transpired was conducted at the University of Liverpool. Findings showed that the evidence-based education promoted theoretical learning about team working, enabled the students to learn with and from each other, and significantly raised awareness about collaborative practice and its link to improving the effectiveness of care delivery (Cooper, Spencer-Dawe, & McLean, 2005). Conversely, Rice et al. (2010) reported the results of a qualitative study to improve interprofessional communication and collaboration conducted in a Canadian teaching hospital. Results indicated that the perceived benefits of improvement were insufficient to implement simple communication changes. However, formal education in collaborative communication was not employed prior to the initiation of this study.

Effectiveness of Interdisciplinary Education

Although more than a few interdisciplinary patient safety educational programs have been developed, there is a dearth of research regarding methods to evaluate the long-term effectiveness of such programs. However, five studies regarding strategies to quantify intermediate impact have been conducted. An instrument based on competencies published by the faculty of Quality and Safety Education for Nurses (QSEN) was tested on 37 oncology registered nurses to evaluate competencies in quality improvement, safety, evidence-based practice, teamwork, patient-centered care, and informatics (Dycus & McKeon, 2009). Although not tested on an interdisciplinary group, results suggested that the tool might be reliable to measure quality knowledge, skills, and attitudes. The nurses were found to be knowledgeable in quality improvement; however, they lacked skills in practice application (Dycus & McKeon,
Simulation, coupled with interprofessional education, has also been suggested as a possible method to evaluate the effectiveness of interprofessional patient safety education. Simulation was found to provide the learning venue where students could refine patient skills and collaborate with other professional students in a risk-free environment (Reese, Jeffries, & Engum, 2010; Robertson & Bandali, 2008; Varkey, Karlapudi, Rose, & Swensen, 2009). Additionally, interprofessional team objective structured clinical examination (ITOSCI), in which a mixed group of professional learners could rotate through a series of scenarios, has been suggested as an effective evaluation method of interprofessional education (Simmons & Wagner, 2009).

Two systematic reviews on the effectiveness of interdisciplinary education have been completed (Reeves et al, 2009; Zwarenstein et al., 1999). The 1999 review was conducted using the guidelines developed by the Cochrane Collaboration. The National Library of Medicine's bibliographic database (MEDLINE) and the Cumulative Index to Nursing and Allied Health Literature (CINAHL) were searched using a combination of terms for rigorous study designs and for interprofessional education (Zwarenstein et al, 1999). A total of 552 abstracts of articles from CINAHL (back to 1982) and 510 from MEDLINE (back to 1966) were reviewed and a total of 81 articles were identified that met the criteria for the search. Review of the full texts of the articles by two independent reviewers revealed that none were eligible for inclusion in the review. Most of the articles failed to meet the Cochrane Collaboration methodological criteria (Zwarenstein et al, 1999). The researchers concluded that there was no published evidence that interdisciplinary professional education promoted interprofessional collaboration or improved client outcomes (Zwarenstein et al, 1999).
The objectives for the second review were expanded from the objectives of the first review (Reeves et al., 2010). In addition to assessing the effectiveness of interprofessional educational interventions to interventions utilized in discipline-specific education, the second review assessed the effectiveness of interprofessional interventions compared to control groups which received no education intervention (Reese et al, 2010). MEDLINE, CINAHL, and the Effective Practice and Organization of Care Group (EPOC), a specialized review group of the Cochrane Collaboration, were searched to identify articles that met the criteria. In addition the researchers manually searched the *Journal of Interprofessional Care* and included reference lists of included studies, reviewed two recently published books on interprofessional education, and reviewed the accounts from relevant conferences (Reeves et al, 2010). Two independent reviewers appraised the abstracts of 1801 documents. Fifty-six studies met the search criteria and were fully reviewed. Six studies met the criteria of the systematic review (Reeves et al, 2010). Four of the studies were randomized clinical trials (RCT) and two were controlled before and after (CBA); five of the six studies had small sample sizes. Since the total number of articles was small, no meta-analysis was undertaken. Four of the six studies reported a range of positive outcomes on the effects of interprofessional education. Researchers concluded that the quality of quantitative interprofessional research was improving and recommended further quantitative and qualitative research to provide additional insight into the effects of interprofessional education (Reeves et al, 2010).

**Theoretical Framework to Guide Research on Interdisciplinary Education**

A dilemma exists in the quest to substantiate the effectiveness of interdisciplinary education. While numerous agencies, groups, and individuals have recommended interdisciplinary education as a method to improve collaboration and teamwork and thus improve patient quality
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and safety, theory-based research to support these recommendations is minimal (Clark, 2006). While Reese used the Education Simulation Framework (NESF), developed by Jeffries in 2005, as the theoretical framework for a study on collaboration between nursing and medical students (Reese et al, 2010), most of the literature on interdisciplinary or interprofessional education is descriptive or anecdotal (Clark, 2006). However, five different theoretical approaches for guiding the development of an interdisciplinary framework have been suggested by Clark (2006). Educational strategies recommended in the WHO Curriculum Guide have incorporated these theoretical approaches and will serve as the framework for this study. Clark defined the five theoretical approaches as follows:

**Cooperative, collaborative, or social learning.**

Becoming a professional is a social process. Knowledge is acquired in social settings when interaction occurs among colleagues; leadership competencies, as well as communication and conflict management skills, all of which are essential to collaborative practice, emerge from these social relationships. Professional judgment, which is closely aligned with social processes, and ultimately professional identity are developed from a shared sense of certainty within a social group. Interprofessional learning enables groups to become aware of different points of view, thus leading to a synergism and improved outcomes (Clark, 2006).

**Experiential learning.**

Experiential learning is the process that flows from a collaborative learning structure. The different learning styles of professionals or students produce conflict, from which insight and understanding are developed. Reflection is a required component of the process for both the individual and the group in which the individual is a member. To counter traditional
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Professional training, interprofessional education must construct approaches that equalize the power and influence bases (Clark, 2006).

**Epistemology and ontology of interdisciplinary inquiry.**

Different professions have over time developed, generated, defined, and utilized a complex knowledge base or set of truths. Additionally, specific traditions, norms, practices, beliefs, morals, and values characterize these professions. Professional socialization involves the acquisition of the specialized knowledge and standards of the profession. Interprofessional education requires that members of an interprofessional team acquire an understanding and appreciation of the contributions of each specific profession (Clark, 2006).

**Cognitive and ethical student development.**

Interprofessional education allows the student to sequence through a series of steps to transform from a belief in the supremacy of a specific profession to a belief in a more complex professional world where complementary and synergistic interrelationships are necessary to achieve optimal outcomes (Clark, 2006).

**Education of the reflective practitioner.**

Reflective practice is essential to the professional who is required to function in an arena where exactitude is uncommon and moral ambiguity, value differences, and ethical dilemmas are frequent. Thus, reflective practice is a key component of interdisciplinary education as it promotes practitioners to perceive circumstances in different ways (Clark, 2006).

**Methodology**

**Project Design**

A one-group (pretest- posttest) quasi-experimental design will be used to test the hypothesis that interdisciplinary patient safety education will increase collaboration and teamwork between
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nursing students and medical students. Although the ability to make clear cause-and-effect statements is a major weakness of this design (LoBiondo-Wood & Haber, 2010), the design will enable the project leader to use a convenience sample of medical students and nursing students currently enrolled at the Indiana University School of Medicine-Fort Wayne (IUSOM-FW)) and Indiana University Purdue University Fort Wayne (IPFW). Collaboration will be measured prior to the beginning of the course “Patient Safety for the Healthcare Professional”, an interdisciplinary class of medical students and nursing students, and at the conclusion of the course. The intervention will be the interdisciplinary education and the dependent variable will be collaboration and teamwork. There will be no control group and no randomization, which are important characteristics that enhance internal validity, so evidence generated by the findings will have to be interpreted carefully. Although threats to external validity are minimized, a primary drawback of a quasi-experimental design is that the possibility of confounding bias cannot be eliminated, thus hindering the project leader’s ability to draw causal inferences (LoBiondo-Wood & Haber, 2010).

An elective, one-hour credit course on patient safety will be offered to third and fourth medical students at the IUSOM-FW and to graduate and undergraduate nursing students enrolled in the IPFW Department of Nursing. Approval for the pilot course has been given by the Assistant Dean and Center Director of the IUSOM-FW, the Dean of the IPFW College of Health and Human Services, the college which houses the Department of Nursing, and the Director of the IPFW Department of Nursing. The course will be taught by a master’s prepared registered nurse (the project leader) and a practicing physician. Curriculum will be based on the World Health Organization (WHO) Patient Safety Guide for Medical Schools. Curriculum will be developed during the summer of 2011 and the course will be taught in the fall of 2011.
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Recruitment of students into the course will begin in the summer of 2011. This course will be the first interdisciplinary course for medical students and nursing students on the IPFW campus.

Sample

A non-probability convenience sampling technique will be employed to recruit participants for this study. Medical students from IUSOM-FW and nursing students from the IPFW Department of Nursing who enroll into this elective pilot course will be invited to participate in the study. The ability to generalize the results of the study may be limited because of the potential of sampling bias and because the sample may not be representative of the entire population (LoBiondo-Wood & Haber, 2010). It is anticipated that enrollment in the course and the study will be low; the course is an elective course and this will be the first time the course will be offered.

Recruitment of students for enrollment into the elective course will be effected by faculty from the school of medicine and the department of nursing who will be provided with information about the course through a course syllabus (See Appendix A) and the projected learning outcomes (See Appendix B) for the course. The syllabus was developed by the project leader and describes the course objectives; the importance of the subject matter to future healthcare practice and to patient care; and the fact that participants in the course will be participating in interdisciplinary education. An invitation to participate in the study will be extended to all students after they have registered for the course but prior to the beginning of the course. Participation in the study will be voluntary on the part of the students. The Director of Simulation and Research in the IPFW Department of Nursing will distribute information about the study to the students (See Appendix D) and administer the collaboration survey tool to
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students prior to the first class of the semester and following the final class of the semester. The project leader will not be present when this tool is administered. This director will develop a code book identifying each student, so that a comparison of each student's initial scores can be compared with each student's ending scores on the survey tool. This director will maintain the code book in a locked cabinet in her office throughout the course of the study and will destroy it at the end of the semester. Initial survey instruments will be submitted to this director, who will maintain them in a locked cabinet in her office until the second and final survey is taken. This director will give both the initial and final surveys to the project leader following the posting of final grades for the course. The project leader will destroy all data following data analysis.

Previous care experience in a clinical environment is considered by the project leader as a required pre-requisite for inclusion in the patient safety course, as the patient safety curriculum will build upon existing clinical knowledge. Consequently, medical students enrolled in the third and fourth year of medical school will be recruited for inclusion in the course, as it is in these two years that the student participates in a clinical clerkship. Additionally, by the end of the second year of medical school, medical students are required to have achieved a level one of three levels in nine prescribed competencies (Indiana University School of Medicine – Fort Wayne, March 16, 2011). These competencies are as follows: 1. effective communication; 2. basic clinical skills; 3. using science to guide diagnosis, management, therapeutics, and prevention; 4. lifelong learning; 5. self-awareness, self-care, and personal growth; 6. social and community contexts of health care; 7. moral reasoning and ethical judgment; 8. problem solving; and 9. professionalism and role recognition (Indiana University School of Medicine – Fort Wayne, March 16, 2011). Additionally, senior students enrolled in the baccalaureate nursing program, as well as registered nurses enrolled in the graduate nursing program, at the
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IPFW Department of Nursing will be recruited for inclusion in the course. These students will be recruited because they have either successfully completed clinical rotations in medical-surgical nursing, obstetrical nursing, and pediatric nursing or are practicing registered nurses.

Curriculum

The World Health Organization (WHO) has developed and published a patient safety curriculum guide for medical schools (WHO, 2009). Work on the guide began in 2004 and an international evaluation study of the curriculum guide was initiated in ten countries across all six WHO regions in 2009 (WHO, 2010). Results from the study have not yet been published; however, interim reports from the field sites have indicated success in integrating patient safety into medical school curricula (WHO Patient Safety Curriculum Bulletin, March 2010). Additionally, WHO has initiated a project to widen the scope of the patient safety curriculum guide to include all health professionals (WHO, October 8, 2010). A partnership among the International Confederation of Midwives, the International Council of Nurses, the World Dental Federation, the International Pharmaceutical Federation and the World Medical Association is currently being coordinated by the World Health Professions Alliance (WHO, October 8, 2010) to develop this inter-disciplinary curriculum.

“The WHO Patient Safety Curriculum Guide for Medical Schools” (WHO, 2009) addresses 11 specific topics and lists learning objectives and learning outcomes for each of these topics (See Appendix C). These topics are as follows: definition of patient safety; human factors and why they are important to patient safety; understanding systems and the impact of complexity on patient care; being an effective team play; understanding and learning from errors; understanding and managing clinical risk; quality improvement methods; engaging with patient and carers; minimizing infection through improved infection control; patient safety and invasive procedures;
IMPACT OF INTERDISCIPLINARY PATIENT SAFETY

and improving medical safety (WHO, 2009). These topics reflect the patient safety issues and adverse events that have been reported in the literature. The guide also includes an evidence-based teacher’s guide. The teacher’s guide includes strategies for implementing the curriculum guide and addresses educational principles essential for patient safety teaching and learning, assessing patient safety, evaluating patient safety curricula, and activities to assist patient safety understanding (WHO, 2009). Learning activities are also described in the guide, inclusive of lecture, learning during clinical placement, small group activities (i.e., learning with others), case discussion, games, independent study, patient tracking, docu-drama, simulation, and improvement projects (WHO, 2009). These strategies and learning activities have been reported as successful methods in interprofessional patient safety education. Additionally, reflective journaling will be a technique used by the students to reflect on learnings, observations, and interprofessional relationships.

Consequently, it is proposed that the WHO Curriculum Guide be used as the framework for a quasi-experimental pilot project to evaluate the impact of interdisciplinary education on collaboration and teamwork between nursing students and medical students.

**Instrument**

The Jefferson Scale of Attitudes Toward Physician-Nurse Collaboration developed in 1996 at Thomas Jefferson University will be used to measure collaboration between nursing students and medical students (See Appendix C) (Hojat et al, 1999). Originally developed as a 20-item Likert scale addressing physician-nurse interaction, authority, autonomy, responsibility for patient monitoring, collaborative decision making, and role expectations (Hojat et al., 1999), the current instrument consists of 15 questions answered on a 4-point Likert-type scale (Daugherty &
IMPACT OF INTERDISCIPLINARY PATIENT SAFETY
Larson, 2005). The same instrument can be used for both medical students and nursing students. Psychometric analysis of the instrument revealed that in a factor analysis, six extracted factors had Eigenvalues greater than 1 (content validity), there was consistency of extracted factors with discussion of collaboration in the literature (construct validity), and Cronbach’s alpha was .84 for medical students and .85 for nursing students, indicating a high degree of reliability of the tool (Daugherty & Larson, 2005). The instrument will be administered prior to the commencement of the course and on completion of the course by an individual not involved in teaching the course and not involved in this synthesis project. Permission has been given by Mohammadreza Hojat, Ph.D. to use the tool.

Data Analysis

Because of the anticipated small sample size, data will be analyzed using descriptive statistics. If the sample size is greater than 30, independent t-tests will be used to analyze the data.

Potential Impact of Project on Healthcare Costs

In addition to the physical and emotional toll that the occurrence of adverse events has on patients, families, and caregivers, preventable errors have a significant impact on the cost of healthcare. Using an actuarial approach to measure the frequency and costs of measurable United States medical errors, Van Den Bos et al. (2011) estimated that the annual cost of measurable medical errors that harm patients was $17.1 billion in 2008. These high costs were further substantiated by the Health Grades consulting firm, which analyzed data generated by the Medicare program in the years 2005 to 2007 (Roehr, 2009). Analysis of 913,215 safety events demonstrated an estimated additional healthcare spending of $6.9 billion due to medical errors.
IMPACT OF INTERDISCIPLINARY PATIENT SAFETY

The analysis also identified that the most common adverse events were failure to rescue, prevalence of nosocomial decubitus ulcers, and respiratory failure after operation, which together accounted for 57.8% of all safety events (Roehr, 2009). Likewise, Fuller, McCullough, Bao, and Averill (2009) analyzed potentially preventable complications from secondary diagnosis codes and other selected ICD-9-CM procedure codes for Maryland (fiscal year 2008 data) and California (fiscal year 2006 data). Results of this analysis estimated that potentially preventable complications add 9.4% to 9.7% to hospital inpatient costs (Fuller et al., 2009). To incentivize hospitals and healthcare professionals to prevent adverse events, the Center for Medicare and Medicaid Services (CMS) implemented a plan in 2008 to reduce reimbursement for preventable errors (Roehr, 2009).

The purpose of this project is to test the hypothesis that interdisciplinary patient safety education for nursing students and medical students will improve the collaboration and teamwork between these groups of students, which will be essential to the delivery of safe patient care as these students transition into the professional role. Correspondingly, improved patient safety should positively impact the cost of healthcare by decreasing the costs attributable to adverse events.

Definition of Terms

Interprofessional or interdisciplinary education.

Hale (2003) defined interprofessional education as “education initiatives that incorporate interactive learning methods between different professionals in order to foster collaborative practice” (p. 124). Buring et al. (2009) expanded on this definition by stating that
Impact of Interdisciplinary Patient Safety

Interprofessional education involves educators and learners from two or more health professions and their foundational disciplines who jointly create and foster a collaborative learning environment. The goal of these efforts is to develop knowledge, skills and attitudes that result in interprofessional team behaviors and competence. Ideally, interprofessional education is incorporated throughout the entire curriculum in a vertically and horizontally integrated fashion. It is important to also consider what is not IPE. Examples of what IPE is not include:

- Students from different health professions in a classroom receiving the same learning experience without reflective interaction among students from the various professions;
- A faculty member from a different profession leading a classroom learning experience without relating how the professions would interact in an interprofessional manner of care; and without sharing of decision-making or responsibility for patient care.
- Participating in a patient care setting led by an individual from another profession without sharing of decision-making or responsibility for patient care. (Buring et al., 2009, p. 2).

For the purpose of this project, the terms interprofessional education and interdisciplinary education will be synonymous.

Undergraduate nursing students.
IMPACT OF INTERDISCIPLINARY PATIENT SAFETY

Students enrolled in the baccalaureate nursing program in the Department of Nursing, College of Health and Human Services, IPFW. Graduates of this program receive a degree from Purdue University.

**Graduate nursing students.**

Registered Nurses who are enrolled in the graduate program in the Department of Nursing, College of Health and Human Services, IPFW. These registered nurses will be pursuing a master’s degree in one of the following four areas of specialization: Adult Nurse Practitioner, Women’s Health Nurse Practitioner, Nurse Educator, Nurse Executive. Graduates of this program receive a degree from Purdue University.

**IPFW Department of Nursing.**

A department that is a component of the College of Health and Human Services at IPFW. The IPFW undergraduate nursing programs are accredited by the Indiana State Board of Nursing Health Professions Bureau and the National League for Nursing Accrediting Commission (NLNAC). The IPFW graduate nursing programs are awaiting results of an accreditation visit conducted in February 2011 by the NLNAC.

**Indiana University School of Medicine-Fort Wayne (IUSOM-FW).**

Located on the campus of IPFW, the IUSOM-FW is one of nine centers of the Indiana University School of Medicine located in Indiana. The ISOM-FW offers all four years of medical school, inclusive of clinical clerkships in the third and fourth year. Graduates of this program receive a degree from Indiana University.

**Medical students.**
IMPACT OF INTERDISCIPLINARY PATIENT SAFETY

Students enrolled in the third or fourth year of medical school at the IUSOM-FW who will be participating in clinical clerkships.

**World Health Organization Patient Safety Curriculum Guide for Medical Schools.**

“The Curriculum Guide is a comprehensive programme for implementation of patient safety education in medical schools worldwide” (WHO, 2009, p. 4). The teacher’s guide lays the foundations for capacity-building in patient safety education and the guide itself “provides a comprehensive ready-to-teach, topic-based patient safety program that can be implemented either as a whole or on a per topic basis” WHO, 2009, p. 4).

**Collaboration.**

According to D’Amour, Ferrada-Videla, Rodriguez, and Beaulieu (2005) “collaboration concerns the type of relations and interactions taking place between co-workers” (p. 118). “Collaboration conveys the idea of sharing and implies collective action oriented toward a common goal, in a spirit of harmony and trust, particularly in the context of health professionals” (D’Amour, Ferrada-Videla, Rodriguez, & Beaulieu, 2005, p. 116). Furthermore, following an initial screening of 588 abstracts, D’Amour et al. (2005) identified 17 papers from which key concepts related to collaboration were identified. These concepts were sharing, partnership, interdependency, and shared power, based on knowledge and experience rather than on functions or titles (D’Amour et al., 2005).

**Teamwork.**

Teamwork “describes the human context in which collaboration takes place” (D’Amour et al., 2005, p. 118). Interdisciplinary teamwork is further defined as a “structured entity with a
IMPACT OF INTERDISCIPLINARY PATIENT SAFETY

common goal and a common decision-making process” (D’Amour et al., 2005, p. 120), requiring cohesion and shared ownership. In addition to shared goals, task-specific competencies and specialized work roles characterize team members who communicate, share resources, and coordinate activities in response to changing patient needs (Manser, 2009).

References


Brennan, T., Leape, L.L., Laird, N.M., Hebert, L., Localio, A.R., Lawthers, A.G., …Hiatt,
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interprofessional education in health care settings.


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World Health Organization. *Patient safety curriculum bulletin.* (2010, March). Retrieved from pscuccurriculum@who.int
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Appendix A

Syllabus Patient Safety for the Healthcare Professional

Indiana University-Purdue University Fort Wayne
College of Health and Human Services
Parkview Department of Nursing
and
Indiana University School of Medicine-Fort Wayne
Patient Safety for the Healthcare Professional

Pre- or Corequisite:

None.

NUR 39900 03 (14635) and NUR 59900 (14636) Patient Safety For Healthcare Professional

NUR 39900:
Instructor Permission Required; Patient Safety For The Healthcare Professional Is A Combination Of Lecture, Case Studies, And Simulation; Restricted To 4th Year Undergraduate Nursing Students; Class Meets Every Other Week Starting September 20

NUR 59900:
Instructor Permission Required; Patient Safety For The Healthcare Professional Is A Combination Of Lecture, Case Studies, And Simulation; Restricted To Graduate Nursing Students, And 3rd And 4th Year Medical Students; Class Meets Every Other Week Starting September 20

Course Credits and Hours:

1 Credit Hour
IMPACT OF INTERDISCIPLINARY PATIENT SAFETY

**Course Schedule (Day/Time) and Location:**

Every other Thursday, 5:30 p.m. to 8:15 p.m. Meeting dates: September 22, October 6, October 20, November 3, November 17, December 1, December 8. Meeting location: LA Bldg., Rm 328

**Faculty: Professors**

Carol Crosby, MSN, RN, NEA-BC

John Fallon, M.D., MBA

**Required Textbook:**


**Course Description:**

Numerous research studies have supported that decreased-risk adjusted mortality and length of stay, fewer negative patient outcomes, and enhanced patient satisfaction have been associated with better nurse-physician collaboration. In recognition of this, the Institute of Medicine has recommended that “All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics” (Institute of Medicine, 2003, p. 3).

This interdisciplinary pilot course, “Patient Safety for the Healthcare Professional” was developed for nursing students and medical students to meet the following objectives:

- To increase the knowledge base and skills of students about current patient safety practices in clinical settings and

- To increase collaboration between medical students and nursing students to allow them to effectively collaborate as members of an interdisciplinary healthcare team before assuming a professional role.

**Course Objectives:**


**Topical Outline:**
IMPACT OF INTERDISCIPLINARY PATIENT SAFETY

The course will cover the eleven topics selected by the World Health Organization (WHO) in the *WHO Patient Safety Curriculum Guide for Medical Schools* (WHO, 2009) (www.who.org). These topics are as follows:

1. What is patient safety?
2. What is human factors and why is it important to patient safety?
3. Understanding systems and the impact of complexity on patient care
4. Being an effective team player.
5. Understanding and learning from errors.
6. Understanding and managing clinical risk.
7. Introduction to quality improvement methods.
8. Engaging with patients and carers.
9. Minimizing infection through improved infection control.
11. Improving medication safety.

**Methods of Instruction:**

Professors for this course will utilize learning methods suggested in the WHO Patient Safety Curriculum Guide, inclusive of problem-based teaching (facilitated group learning); case studies; simulated-based learning, lecture-based teaching (interactive/didactic); and mentoring and coaching (role models).

**Course Requirements:**

- On-line Discussion Forums (6) 60 points
- Interdisciplinary Simulations (2) 50 points
- Case Study Presentation 20 points
- Class Participation 35 points
- Reflective Journaling 35 points

**Grading Criteria:**

See attached grading rubrics.

**Department Announcements:**

**Communication**

The official university communication is by IPFW email using the university student email address. Email includes information sent to the nursing listserv. Students’ must maintain the
mailbox, including sufficient space to receive emails. Students are responsible for information sent via email.

**Services for Students with Disabilities**

If you have a disability and need assistance, special arrangements can be made to accommodate most needs. Contact the Director of Services for Students with Disabilities (Walb, room 113, telephone number 481-6658), as soon as possible to work out the details. For more information, please visit the web site for SSD at [http://www.ipfw.edu/ssd/](http://www.ipfw.edu/ssd/)

**Classes will be canceled:**

A. At all instructional sites if IPFW is officially closed by the administration of the university, or

B. At the practicum or clinic site if it is closed by officials of that institution.

Decisions to close IPFW and practicum/clinic sites are left to the chief administrators of those respective facilities. In the event of inclement weather, listen to local radio or television announcements, go to [www.ipfw.edu](http://www.ipfw.edu) (a notice will appear at the top of the page), or call the campus weather emergency number, 481-6050 or 481-5770 for a recorded message.

**Plagiarism**

According to the American Psychiatric Association (2010), plagiarism is the representation of another author's work as your own. “The key element of this principle is that an author does not present the work of another author as if it were his or her own work” (p. 16).

The Plagiarism Policy of the nursing department indicates that any student who plagiarizes has committed academic dishonesty and misconduct which may lead to dismissal from the program or college. Any student, who has been identified to have plagiarized, will receive a zero for that assignment.


**Graduate Grading Scale:**

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<th>Score Range</th>
<th>Grade</th>
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<td>80 - 91</td>
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Appendix B

WHO Patient Safety Curriculum Learning Objectives and Learning Outcomes

Patient Safety for the Healthcare Professional

Topics, Learning Objectives, Learning Outcomes
(per the 2009 WHO Patient Safety Curriculum Guide)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Learning Objective</th>
<th>Learning Outcomes</th>
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<tbody>
<tr>
<td>1. What is patient safety?</td>
<td>Understand the discipline of patient safety and its role in minimizing the incidence and impact of adverse events, and maximizes recovery from them.</td>
<td>This topic takes an overview of patient safety and sets the scene for deeper learning in several areas such as medication safety, procedural and surgical skills, effective teamwork, and accurate and timely communication.</td>
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<td>3. Understanding systems and the impact of complexity on patient care.</td>
<td>Understand how systems thinking can improve health care and minimize patient adverse events.</td>
<td>Knowledge requirement: explain what is meant by the terms “system” and “complex system” as they relate to health care; explain why a systems approach to patient safety is superior to the traditional approach. Performance requirements: describe the term HRO (high reliability organization) and the elements of a safe health-care delivery system.</td>
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| 4. | Being an effective team player. | Understand the importance of teamwork in health-care; know how to be an effective team player; recognize you will be a member of a number of health-care teams as health professional students. | Knowledge requirements: achieve a general understanding of the different types of teams in health care; the characteristics of effective teams; the role of the patient in the team. Performance requirements: use the following teamwork principles to promote effective health care including:  
- Mindful of how ones’ values and assumptions affect interactions with others;  
- Mindful of the team members and how psychological factors affect team interactions;  
- Aware of the impact of change on teams;  
- Include the patient in the team;  
- Use communication techniques;  
- Resolve conflicts;  
- Use mutual support techniques;  
- Change and observe behaviours. |
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<td>5.</td>
<td>Understanding and learning from errors.</td>
<td>Understand the nature of error and how health care can learn from error to improve patient safety.</td>
<td>Knowledge requirement: explain the terms error, violation, near miss, hindsight bias. Performance requirements: know the ways to learn from errors; participate in an analysis of an adverse event; practice strategies to reduce errors.</td>
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<td>6.</td>
<td>Understanding and managing clinical risk.</td>
<td>Know how to apply risk management principles by identifying, assessing and reporting hazards and potential risks in the workplace.</td>
<td>Knowledge requirements: the activities for gathering information about risk; fitness-to-practice requirements; personal accountability for managing clinical risk. Performance requirements: know how to report known risks or hazards in the workplace; keep accurate and complete medical records; know when and how to ask for help from a supervisor, senior clinician and other healthcare professionals; participate in meetings that discuss risk management and patient safety; respond appropriately to patients and families after an adverse event; respond appropriately to complaints.</td>
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<td>7.</td>
<td>Introduction to quality improvement methods.</td>
<td>The objectives of this topic are to describe the principles of quality improvement and to introduce students to the basic methods and tools for improving the quality of health care.</td>
<td>Knowledge requirements: the science of improvement; the quality improvement model; change concepts; two examples of continuous improvement methods; methods for providing information on clinical care. Performance requirement: know how to perform a range of improvement activities and tools.</td>
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<td>8.</td>
<td>Engaging with patient and The objective of this topic is to</td>
<td>Knowledge requirements: basic</td>
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### IMPACT OF INTERDISCIPLINARY PATIENT SAFETY

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**carers.**

understand the ways in which patients and carers can be involved as partners in health care, both in preventing harm and learning and healing from an adverse event.

communication techniques; informed consent procedures; the basics of open disclosure.

Performance requirements: actively encourage patient and carers to share information; show empathy, honesty and respect for patients and carers; communicate effectively; obtain informed consent; show respect for each patient’s differences, religious and cultural beliefs, and individual needs; describe and understand the basic steps in an open disclosure process; apply patient engagement thinking in all clinical activities; demonstrate ability to recognize the place of patient and carer engagement in good clinical management.

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<td><strong>9. Minimizing infection through improved infection control.</strong></td>
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The objective of this topic is to demonstrate the devastating effects of inadequate infection control and to show students how they can minimize the risks of contamination.

Knowledge requirements: know the extent of the problem; know the main causes and types of infections.

Performance requirements: apply universal precautions; be immunized against Hepatitis B; use personal protection methods; know what to do if exposed; encourage others to use universal precautions.

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<td><strong>10. Patient safety and invasive procedures.</strong></td>
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The objective of this topic is to understand the main causes of adverse events in surgical and invasive procedural care and how the use of guidelines and verification processes can facilitate the correct patient receiving the correct procedure at the appropriate time and place.

Knowledge requirements: the main types of adverse events associated with surgical and invasive procedures care; the verification processes for improving surgical and invasive procedures care.

Performance requirements: follow a verification process to eliminate wrong patient, wrong side and wrong procedure; practice operating room techniques that reduce risks and errors (time-out, briefings, debriefings, stating concerns); participate in an educational process for reviewing surgical and invasive procedures mortality and morbidity.

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<td><strong>11. Improving medication safety.</strong></td>
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To provide an overview of medications safety; to encourage students to continue to learn and practice ways to improve the safety of medication use.

Knowledge requirements: understand the scale of medication error; understand that using medications has associated risks; understand common sources of error; understand where in the process errors can occur; understand physicians’ and nurses’ responsibilities when prescribing and administering medication; recognize common hazardous situations; learn ways to make medication use safer; understand the benefits of a multidisciplinary approach to medication safety.

Performance requirements: acknowledge that medication safety is a vast topic and an understanding of the
area will affect how a clinician performs in the following tasks:
- Use generic names;
- Tailor prescribing for each patient;
- learn and practice thorough medication history taking;
- know the high-risk medications;
- be very familiar with the medications you prescribe;
- use memory aids;
- communicate clearly;
- develop checking habits;
- encourage patients to be actively involved in the medication process;
- report and learn from errors;
- learn and practice drug calculations.
Jefferson Scale of Attitudes toward Physician-Nurse Collaboration

**JEFFERSON SCALE OF ATTITUDES TOWARD PHYSICIAN-NURSE COLLABORATION**

**Six Digit Code Number __________**

**INSTRUCTIONS**: Please indicate the extent of your agreement or disagreement with each of the following statements by circling the appropriate number. For the purposes of this survey, a nurse is defined as “a registered nurse (RN) who is engaged in providing or directly supervising the care of hospitalized patients or as an undergraduate nursing student”; a physician is defined as “a medical doctor or a 3rd or 4th year medical student”.


You are a: [1] Nurse (Please specify your class status: Undergraduate ________ Graduate ___________ Your intended area of specialization: ________________________ ).

[2] Physician (Please specify your class status: 3rd Year Medical Student_______ 4th Year Medical Student________ Your intended area of primary specialty: ____________________________ ).
1. A nurse should be viewed as a collaborator and colleague with a physician rather than his/her assistant.

2. Nurses are qualified to assess and respond to psychological aspects of patients’ needs.

3. During their education, medical and nursing students should be involved in teamwork in order to understand their respective roles.

4. Nurses should be involved in making policy decisions affecting their working conditions.

5. Nurses should be accountable to patients for the nursing care they provide.

6. There are many overlapping areas of responsibility between physicians and nurses.

7. Nurses have special expertise in patient education and psychological counseling.

8. Doctors should be the dominant authority in all health care matters.

9. Physicians and nurses should contribute to decisions regarding the hospital discharge of patients.

10. The primary function of the nurse is to carry out the physician’s orders.

11. Nurses should be involved in making policy decisions concerning the hospital support services upon which their work depends.

12. Nurses should also have responsibility for monitoring the effects of medical treatment.

13. Nurses should clarify a physician’s order when they feel that it might have the potential for detrimental effects on the patient.

14. Physicians should be educated to establish collaborative relationships with nurses.

15. Interprofessional relationships between physicians and nurses should be included in their educational programs.

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Invitation to Participate in a Research Study

Dear Students Enrolled in NUR 39900/59900 “Patient Safety for the Healthcare Professional”,

The class in which you are enrolled is the first interdisciplinary class for medical students and nursing students on the Indiana University Purdue University Fort Wayne (IPFW) campus. As such, I would like to invite you to participate in a research study.

This is a unique opportunity to help contribute to the body of knowledge on interdisciplinary education for medical students and nursing student and may provide valuable information for future collaboration between the I.U. School of Medicine and the IPFW Department of Nursing.

If you agree to participate:

- Complete the survey instrument enclosed in the envelope which will be distributed by Professor Jensen
- Upon completion of the survey instrument, place the survey in the envelope, seal the envelope, and return the sealed envelope to Professor Jensen

If you do not wish to participate, do not complete the survey. Place the survey in the envelope, seal the envelope, and return the sealed envelope to Professor Jensen.

A second survey instrument will be administered at the end of the semester, following the final class for this course. Your answers to the survey instruments will be compared.

Participation in this research is voluntary. Your grade in this course will not be affected by participating or not participating in this research. Your instructors will not be privy to who participated or who did not participate and will not be able to identify survey responses to an individual. You must be 18 years or older to participate in this research.

If you have any questions, please contact me by phone, 260-481-0258, or email, crosbyc@ipfw.edu

Sincerely,

Carol M. Crosby, MSN, RN, NEA-BC
Clinical Assistant Professor, IPFW Department of Nursing