Building Interprofessional Teams

The University of Texas Medical Branch Quality Enhancement Plan 2018
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Data-driven evidence substantiates the need for interprofessional education and practice in the delivery of health care, the pursuit of health knowledge, and the promotion of healthy populations. Accordingly, students at academic health science centers should be introduced, integrated, and immersed into interprofessional environments to acquire the skills that advance collaboration and teamwork across the health sciences.

Infusing a continuum of interprofessional learning experiences that allow students opportunities to acquire skills to work in collaborative teams is the focus of the new UTMB Quality Enhancement Plan: “IPE²Practice.” The development and proposed implementation of this QEP has been constructed through broad-based involvement of UTMB constituents and builds upon the strong foundation successfully established with synergy, the first UTMB QEP. synergy helped students develop knowledge and mutual understanding of interdisciplinary roles of healthcare professionals. Institutional assessment, from the first QEP, indicated an opportunity to elevate UTMB’s current interprofessional program to emphasize team-based learning in interprofessional practice settings. Institutional assessments of student priorities confirmed interest and need for interprofessional education including practice with other healthcare professionals. Faculty also believed that interprofessional practice would improve the student learning environment and their involvement should be included in the plan. This feedback also aligns with UTMB’s goal to prepare students to meet the challenges of improving the health of populations. UTMB’s mission is to improve health for the people of Texas and around the world through education, research, and innovative patient care. Our strategic plan will insure that the healthcare providers of tomorrow learn from interprofessional opportunities today. As a result, we have created these encompassing goals:

- Goal 1: Enhance the learning environment to prepare students to work on interprofessional teams.
- Goal 2: Equip students to graduate with necessary skills for working on interprofessional teams.

Measurable outcomes have been created to assess achievement of learning objectives and program goals. Through our plan, UTMB will advance to meet national progress in interprofessional education and practice. Our QEP is founded on Core Competencies for Interprofessional Collaborative Practice (Interprofessional Education Collaborative Expert Panel, 2011), created by six national professional healthcare organizations. These competencies are the nucleus for our student learning objectives.

IPE²Practice will introduce all students to the IPEC Core Competencies which include:

1. Values & Ethics
2. Roles & Responsibilities

3. Interprofessional Communication

4. Teams & Teamwork

To further enhance the learning environment, students will integrate into interprofessional practice through high-fidelity, low-risk simulations. Also, through interprofessional clinical and laboratory practice, students will be immersed in collaborative project-focused teams.

Building on the strides made in interprofessional education at UTMB, IPE²Practice will be initiated, implemented, and completed with institution-wide support and included in the institution’s strategic plan. One of the objectives in UTMB’s strategic vision, “The Road Ahead”, was for faculty members to capture their involvement in interprofessional instruction and facilitation. Part of this plan included developing methods of incentivizing and rewarding faculty’s creativity and involvement in interprofessional education.

A budget, created by the QEP Leadership Team and the institution’s financial administrators, also supports IPE²Practice. These resources support learning objectives, faculty development, physical space, and technology. As part of “The Road Ahead,” UTMB has designated The Office of Interprofessional Education (OIE), led by a full-time director and support staff, to coordinate the efforts, activities, and assessments for IPE²Practice. The OIE will evaluate the achievement of IPE²Practice goals.

Institutional capability to carry out this QEP is evident in the provision of the new UTMB Health Education Center. This facility will provide instructional spaces and simulation labs designed to integrate interprofessional student groups and expedite interprofessional learning. These physical spaces will greatly enhance the culture and environment of interprofessional education and practice that this plan seeks to implement.

It is with great enthusiasm and eagerness that UTMB presents this ambitious plan. As we near the completion of the UTMB Health Education Center, we also build upon our interprofessional culture to construct the next phase – preparing students to work on collaborative teams to improve health.
The Setting for the QEP

The University of Texas Medical Branch, the state’s first academic health center was founded in 1891 on Galveston Island. Known then as the “Wall Street of the Southwest,” Galveston was a major commercial port of entry and therefore the logical location for a visionary health sciences center. The island city and UTMB have shared challenges and successes for over a century. They share a bright future of hope and service locally, statewide, and beyond.

UTMB has grown to influence world-wide health and has experienced significant growth over the years. In 2016, the Jennie Sealy Hospital opened, reinforcing UTMB’s commitment to provide the best possible care for patients. Our practitioners collaborate in an interprofessional setting that nurtures and enriches the learning experience for all of our students, while providing state-of-the-art healthcare.

Lining one wall of the new hospital are plaques and photos that chronicle the institution’s history and the resounding mission of providing a healing environment to patients. Contained in the words of the plaques, shared in the following paragraphs, is a commitment to foster interprofessional education and practice as part of the institutional culture.

UTMB Professional Programs

“It has always been about the patient. Since John Sealy Hospital opened in 1891 as UTMB’s first teaching hospital. Since the first nursing and medical students began their journeys of learning and service. Our focus has been on defining the future of healthcare to improve health and improve lives. Our knowledge, our methods, and even our facilities evolve over time. But what never changes is the dedication of physicians, nurses, health professionals, scientists, educators, and those in support roles to the healing and well-being of the patient.”

We provide below a brief description of our schools and their affiliated programs as displayed on our public plaques. A comprehensive description of each of the UTMB schools is located in Appendix A.

Health Professions

“1968. The UTMB School of Health Professions opened as the first allied health school in the Southwest. It provides formal structure to the training of clinical laboratory scientists, physical and occupational therapists, respiratory care therapists, physician assistants, and other vital members of the interprofessional healthcare team. In UTMB’s spirit of progress, innovation, and collaboration, the school has established programs of advanced study to ensure continual ability to provide a well-trained, ample healthcare work force for the communities UTMB serves.”
Nursing

“Pioneering contributions to nursing education and practice have taken place on the UTMB grounds since 1890 and becoming part of UTMB in 1896. Galveston’s John Sealy Hospital Training School for Nurses was the first school of nursing in the Southwest and the first to join a university. A leader in distance education and in advance training for clinicians, educators, and researchers, the school strives to ensure well-prepared health care work force for the future. Today’s nurses learn and practice as part of interprofessional teams focused on the whole patient. With UTMB, the School of Nursing and the Health System have chosen to be at forefront of this change.”

Medicine

“Twenty-three medical students. Thirteen faculty recruited from premier institutions. One classroom facility and one teaching hospital. So began The University of Texas Medical Branch in the Ashbel Smith Building classroom on October 5, 1891. Since then, UTMB students, alumni, and faculty physicians have continually redefined the art and science of health care – driving progress in medical education and practice, combining expertise with compassion, and joining with colleagues to usher in the new era of interprofessional teamwork for the benefit of patients and their families.”

Research

“From Day 1 in 1891, UTMB’s research enterprise has been about discovery; finding the underlying causes of disease; developing new ways to prevent, treat, and cure conditions that diminish human health, productivity, and quality of life. This discovery takes place in our classrooms – in the programs of our Graduate School of Biomedical Sciences – which began in 1969 to formalize graduate training at UTMB. It takes place in our laboratories – some among the best in the world. And it takes place at the patient’s bedside where we strive to translate findings into practical methods for improving health and improving lives.”
In 2015, a QEP Leadership Team was formed with faculty and student representation from the four schools in addition to staff and administration from the UTMB Health System. One of the key objectives of the QEP Leadership Team was to ensure that the QEP was developed with broad-based involvement of institutional constituencies and addressed issues that were meaningful to our institution’s members and to its mission.

Presentations were made at the university’s faculty senate and at the Student Government Association meetings to inform stakeholders about the importance and significance of the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) reaffirmation. They were also informed about the specifics of the QEP. Faculty, students and staff were invited and encouraged to submit QEP topic ideas on the QEP blog or to any faculty or staff on the QEP Leadership Team.

To further canvass ideas, a topic query was distributed in April 2015 to a broad spectrum of stakeholders that included course and program directors, faculty members, and administrative staff. Participants in the survey were asked to identify an area, process, or concept related to student learning or the environment supporting student learning that they believed to be a valid and viable topic for the new QEP. The respondents were asked to provide information about the effect that their ideas would have on student learning or the student learning environment. (Appendix B)

**Student Input and Involvement**

The survey was sent to the students in each of the four schools. Students addressed many issues and presented diverse learning ideas. Working through their responses, it was clear that students were exposed on some level to the interprofessional culture of UTMB; however, they stated a desire and need to participate in increased activities, simulations, and team-based clinical experiences in an interprofessional environment. They suggested that “an appropriate focus for the new QEP would be to expand interprofessional education among all of the UTMB professional schools.”

Students representing all four schools, at varied educational levels and clinical pathways, met with members of the Academic Enterprise to share their ideas of improving the student learning environment now and for the future. Their comments reflected a need to understand how different healthcare professionals effectively work as a team to improve patient care:

“Working with other disciplines sounds like a wonderful opportunity to learn about the ways we can support one another across the field of medicine. Since we will be working closely throughout our careers, this will benefit us to begin building teamwork skills.” – Karli R.

“I want to gain experience working with other disciplines to be a more effective practitioner.” – Bethany G.
Selecting the QEP Topic

As healthcare is moving in the direction of interprofessional care teams, I see learning teamwork while in school an invaluable opportunity to gain early exposure to that model.” – Tyler O.

Students stated that in order to work on an interprofessional team they must have the opportunity to practice in a collaborative environment. Professionalism, communication, and patient safety were key components that they believed could be best acquired in an interprofessional setting with faculty who demonstrated and taught team skills.

With data and input from a broad-based sample of faculty, students, and staff, the QEP Leadership Team began to review and consider the possible course of action and program choices. The resounding vote was for interprofessional education.

Analysis of Findings

The results of the surveys were categorized by common themes and tagged words. Response to the survey featured ideas and suggestions that focused on advancing interprofessional education to an application/practice level. Other topics that emerged included competency-based education, patient safety, and development for students to hone basic healthcare skills and clinical competence.

Survey respondents then met collectively for a “Think Tank” discussion to share their ideas and advocate for the QEP topic.
Developing IPE²Practice

The QEP Leadership Team

The process to develop IPE²Practice was led by a team of dedicated representatives of the health system, faculty, and student organizations. Officially charged as the “Quality Enhancement Plan Leadership Team,” the group spent 18 months collecting and organizing information to form the framework to advance interprofessional education and practice. The team developed the plan through evaluation of our previous QEP, extensive research and discovery including a canvass of national trends, institutional data, state efforts, and accreditations standards from each school. The team reviewed this information in light of UTMB’S mission and vision to provide alignment for the planned QEP initiatives.

Getting the Word Out

After the topic was selected, the QEP Leadership Team began collective monthly meetings with sub-committee meetings held intermittently throughout the process. Team members were responsible for sharing news about the QEP with their programs, faculty, and staff. In addition, QEP updates were provided to the Council of Deans, Faculty Senate, student organizations, and various committees.

Meetings:

- School of Nursing Leadership – May 2, 2016
- UTMB Student Government Association (SGA) Senate – June 15, 2016
- Professionalism Committee – June 16, 2016
- School of Nursing Faculty – July 11, 2016
- School of Health Professions – July 27, 2016
- Interprofessional Scholars Program – February 8, 2017 and September 4, 2017
- Faculty Senate – July 10, 2017
- UTMB School of Nursing Clinical Partners – June 26, 2017
- Interprofessional Communications Course Ad Hoc Committee—September 9, 2017
- School of Health Professions – November 30, 2017
- Council of Deans – May 23, 2017
- Faculty Senate - July 10, 2017
- UTMB School of Nursing Clinical Partners - June 26, 2017
- School of Health Professions (Update) - November 30, 2017
Developing IPE² Practice

Members of the QEP Team:

- Jennifer Anderson, Administrative Operations Manager, Primary Care Services Group
- Riddhi Bodani, Student, School of Medicine
- Jose Barral, MD, PhD, Associate Professor Departments of Neuroscience & Cell Biology, and Biochemistry & Molecular Biology, Graduate School of Biomedical Sciences
- David Del Pino, MS, Assistant Director, Business/Academic Systems
- Christopher Edwards, PhD, RN, Assistant Professor, School of Nursing
- Connie Heard, DNP, APRN, FNP-C, Assistant Professor, School of Nursing
- Michael Leger, PhD, MBA, RN, Director - Quality Management and Patient Safety, Health System
- Arlene Macdonald, PhD, Assistant Professor, Institute of Medical Humanities
- John C. McKee, PhD, Associate Vice President of Institutional Effectiveness, Office of Vice President of Interprofessional Education and Institutional Effectiveness
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- Nick Viator, MA, Strategic Planning Analyst, Office of Strategic Management
- Lane Warmbrod, Student, Graduate School of Biomedical Sciences
- Patience Wieland, MS, Course Builder, Medical Branch Library
- Majka Woods, PhD, Director of Educational Development, School of Medicine
- Elizabeth Yoes, MS, Director of Knowledge Management and Data Resources, Knowledge Management and Data Resources
Developing IPE²Practice

IPE²Practice: Supported by Institutional, National, and State Interprofessional Ideals

Institutional Data from synergy

The prior UTMB QEP, synergy, obtained data collected across a variety of activities and through the annual student satisfaction survey. The results of the latter survey demonstrate consistent opportunities to engage in a variety of interprofessional activities while learning about others and their professional roles and skillsets.

In addition to internal institutional data, externally collected national data show that UTMB has provided interprofessional activities above that reported nationally. Since 2011, over 94% of responding UTMB School of Medicine students have answered ‘yes’ to the question, “Have you participated in any required extra-curricular activities where you had the opportunity to learn with students from different health professions?”

Figure 1: UTMB Student Satisfaction Survey—(Percentage of respondents selecting agree/strongly agree)
To extend this analysis to the specific interprofessional learning activities of students engaged with other health professions students, we observe that UTMB has offered substantially more activities centered on patient care and case problems than other AAMC schools. This pattern holds as we move to more applied activities such as clinical simulations and team skills learning, attesting to the variety of activities offered. However, active engagement with patients, the most applied activity, shows UTMB to lag behind other AAMC schools in providing opportunities for students to learn with other health professions students in the practical application of skills in active engagement with patients in an interprofessional environment. This is further demonstrated when we graph the absolute differences between UTMB and the sample of AAMC schools. The absolute differences show substantial differences by activity type favoring UTMB. However, the active engagement with patients lags far behind and is actually a negative difference when compared to the universe of medical students.
What was the nature of the learning experience(s) with other health professions students?
(Select all that apply)

Figure 3 Comparison of Survey Outcomes between American Associate of Medical Colleges Survey
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UTMB’s The Road Ahead

According to the World Health Organization, “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.” (World Health Organization, 2010) Today, UTMB embodies that definition through its institutional vision and the daily implementation of collaborative efforts in the triad complexity of education, research, and healthcare systems. The vision shared among UTMB constituencies is “working together to work wonders as we define the future of healthcare and strive to be the best in all of our endeavors”. IPE²Practice further defines this vision with a comprehensive plan designed to address the future of healthcare by creating interprofessional opportunities so that students will learn today how to work on the healthcare teams of tomorrow.

“The Road Ahead,” UTMB’s Institutional Vision for 2016-2018, states that collaboration is a hallmark of our vision to deliver high-quality outcomes that improve education, research, and healthcare. According to “The Road Ahead,”

Excellence in UTMB education programs has led to steadily increasing enrollment. Well-trained in how to work effectively in interprofessional teams, these students will go on to help address growing shortages in the health professions work force as they improve health in their communities and beyond.

IPE²Practice is a forward-thinking initiative that reverberates the vision, mission, and culture of UTMB. However, this complex planning process does not rely on this natural fit alone. The leadership team utilized the foundation set in our previous QEP and set the tempo to increase our interprofessional capabilities in order to enhance and ensure the fulfillment of the institution’s mission and trends in interprofessional education and practice.

Building upon synergy

Interprofessional Education had its formal beginnings at UTMB through its original QEP, synergy, which was launched in 2008. Following the five-year initiative, interprofessional education and practice has been sustained with a dedicated office staffed by a director of Interprofessional Education and Practice under the leadership of the Vice President of Interprofessional Education and Institutional Effectiveness.

Also sustained and strengthened through the prior QEP is the Interprofessional Scholars Program. The Interprofessional Scholars Program allows students to collaborate on scholarly, mentored projects that advance the insights and goals of
Developing IPE²Practice

interprofessionalism. As part of the program, faculty members serve as mentors for students of a school other than their own to increase understanding among the disciplines. The participation and interest of these students demonstrate a continued demand for interprofessional experiences as students realize the need to learn on interprofessional teams and how it will affect their future successes.

In addition to the Interprofessional Scholars program, the previous QEP achieved the following institutional goals that serve as a bridge to this proposed QEP:

1. Developed a framework that supports the implementation of interprofessional education platforms.
   - Established a charter for the IPE Curriculum Committee.
   - Identified temporary office space in the School of Nursing/School of Health Professions Building with plans for the office to be moved to the Health Education Center upon completion in 2019.

2. Established model for faculty involvement and recognition to participate in Interprofessional Education
   - Created model for all faculty to record interprofessional education involvement in the faculty compensation system
   - Established procedure to recognize and document interprofessional education instructional activities for budgetary and administrative staff

The Health Education Center

Pivotal to the process of creating the plan for IPE²Practice is the Health Education Center (HEC) scheduled to open in 2019. The HEC is a five-story building with 160,000 square feet dedicated to moving UTMB’s educational mission in innovative directions. The building was designed to provide technology-advanced training to all disciplines and support an interprofessional, collaborative environment. The building will feature:

1. A simulation center that will enable students to practice a wide-range of skills in a low-risk, high-fidelity environment. The center will feature patient care units, birthing and operating suites, a community medical

Figure 4: UTMB’s Health Education Center
Developing IPE²Practi ce

home environment, and labs for learning specific patient-care skills. Simulated patient situations will allow students to interact with highly-realistic human simulators and make patient-care decisions.

2. A series of simulation debriefing rooms designed for faculty to help students assess performances and outline strategies for improvement.

3. Collaborative instructional spaces to accommodate the planned growth of UTMB’s interprofessional education programs.

New Directions in Interprofessional Education and Practice

The QEP Team also examined emerging trends in interprofessional knowledge, evidence, and efforts. Since the implementation of synergy, new resources, practices, and guidelines have emerged at the national level. For our planning purposes, we highlight four national efforts, a review of discipline-specific accreditations, and TeamSTEPPS® that have helped propel interprofessional efforts and are a pivotal part of our new plan. We also considered common barriers and solutions experienced by the nature of infusing interprofessional teaching concepts into traditionally self-contained schools.

Interprofessional Education Collaborative (IPEC)

In 2009, six national education associations of schools of the health professions formed a collaborative team. The aim of this team is to promote and encourage constituent efforts that would advance substantive interprofessional learning experiences to help prepare future health professionals for enhanced team-based care of patients and improved population health outcomes. The purpose of the collaborative is to:

1. Serve as the thought leader for advancing interprofessional education.
   - Develop and promote core competencies for interprofessional collaborative practice.
   - Create a repository of interprofessional educational tools and resources.
   - Develop and promote assessment tools and resources to evaluate the impact and effectiveness of IPE efforts.

2. Promote, encourage and support the academic community in advancing IPE efforts.
   - Prepare faculty for teaching students how to work effectively as part of an interprofessional team.
Developing IPE²Practice

- Prepare leaders to advance interprofessional education and interprofessional practice efforts within their institutions.
- Convene communities of interest to create, promote and share ideas and practices.

3. Inform policy makers and key influencers about the important contribution IPEP makes to address the healthcare needs of the nation.

- Advance understanding and support of IPEC, interprofessional education, and interprofessional practice among key government agencies.
- Advance understanding and support of IPEC, interprofessional education, and interprofessional practice among university leadership.
- Advance understanding and support of IPEC, interprofessional education, and interprofessional practice among health system leaders.

The collaborative was charged with creating core competencies for interprofessional collaborative practice designed to guide curriculum development across health professions schools. The competencies and implementation recommendations subsequently published in the “2011 Core Competencies for Interprofessional Collaborative Practice” have been broadly disseminated and have built on each profession’s expected disciplinary competencies. The development of interprofessional collaborative competencies necessarily required moving beyond profession-specific educational efforts to engage students of different professions in interactive learning with each other. In 2016, an update was issued affirming the core competencies.

The IPEC Core Competencies are:

**Competency 1** - Work with individuals of other professions to maintain a climate of mutual respect and shared values. *(Values/Ethics for Interprofessional Practice)*

**Competency 2** - Use the knowledge of one’s own role and those of other professions to appropriately assess and address the healthcare needs of patients and to promote and advance the health of populations. *(Roles/Responsibilities)*

**Competency 3** - Communicate with patients, families, communities, and professionals in health and other fields in a responsive and responsible manner that supports a team approach to the promotion and maintenance of health and the prevention and treatment of disease. *(Interprofessional Communication)*

**Competency 4** - Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan, deliver, and evaluate patient/population-centered care and population health programs and policies
Developing IPE²Practice

that are safe, timely, efficient, effective, and equitable. *(Teams and Teamwork)* *(Interprofessional Education Collaborative, 2016)*

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**The National Center for Interprofessional Practice and Education (Nexus)**

The National Center for Interprofessional Practice and Education was formed in October 2012, funded by a cooperative agreement with the U.S. Department of Health and Human Services, Health Resources and Services Administration. The National Center is also funded in part by the Josiah Macy Jr. Foundation, the Robert Wood Johnson Foundation, the Gordon and Betty Moore Foundation and the University of Minnesota. The center was formed to address the gap that exists between health professions education and health care delivery in the U.S. The goal of the National Center Nexus is to bridge this gap by creating a deeply connected, integrated learning system to transform education and patient care together.

The Nexus is able to critically examine current evidence and practices and create practical models that can then be effectively integrated into different clinical and learning environments to achieve what has become known as the “Triple Aim” of creating better experiences, improving health, and reducing costs. It is a unique public-private partnership charged by its funders to provide the leadership, evidence, and resources needed to guide the nation on the use of interprofessional education and collaborative practice as a way to enhance the experience of health care, improve population health and reduce the overall cost of care. This is accomplished by aligning interprofessional education and collaborative practice (the “new IPE”) with transforming health care delivery.

IPE²Practice will utilize NEXUS, benefitting by its resource center of shared publications, a professional directory for networking, faculty development opportunities, and IPE assessment tools. (https://nexusipe.org)

**Measuring the Impact of Interprofessional Education – IOM Report**

“Measuring the Impact of Interprofessional Education on Collaborative Practice and Patient Incomes,” a 2015 Institute of Medicine report, addresses the future of interprofessional education and collaborative practice *(Institute of Medicine, 2015)*. In the past, research focused on IPE in the classroom leaving a gap in evidence linking IPE to patient outcomes. The committee creating the report was charged with analyzing data to determine best methods for measuring IPE’s link to performance in practice, including patient, population health, and healthcare delivery system outcomes. The committee identified the following four areas that, if addressed, would create a strong foundation for measuring IPE impact on collaborative practice/patient outcomes:
1. More closely aligning the education and health care delivery systems: To create alignment, the committee suggests active participation of major health professions and the health system in which students and practitioners learn together.

2. Developing a conceptual framework for measuring the impact of IPE. Discovering a need for a framework, the committee created a conceptual model that encompasses the education-to-practice continuum.

3. Strengthening the evidence base for IPE.

4. More effectively linking IPE with changes in collaborative behavior.

The committee recommends that interprofessional stakeholders, funders, and policy makers should commit resources to coordinate well-designed studies of the association between IPE and collaborative behavior.

![Figure 5: IOM Model](image)

*The Triple Aim*
Developing IPE²Practice

At the 2013 Josiah Macy Foundation’s conference, “Transforming Patient Care: Aligning Interprofessional Education with Clinical Practice Redesign,” it was noted that the Affordable Health Care Act spurred redesign in the healthcare delivery to improve the Triple Aim, the framework developed by The Institute for Healthcare Improvement (Figure 4). The Macy Foundation states its belief that educational reform must coordinate with healthcare delivery redesign. The two entities must not work in isolation. Instead the educational system must incorporate team-based healthcare delivery and the health system must include an educational mission. The foundation recommends the design, implementation and evaluation of models that link interprofessional education and collaborative practice. (Cox and Naylor, 2013)

Accreditation Standards

An additional trend is the increasing occurrence of interprofessional standards as part of accreditation requirements of specific schools and programs. Evidence supporting interprofessional education is part of the accrediting process in every program at UTMB. For example, The School of Medicine requires through its accreditation standards in the Liaison Committee of Medical Education (LCME), 7.9 that:

…the faculty of a medical school ensure that the core curriculum of the medical education program prepares medical students to function collaboratively on healthcare teams that include health professionals from other disciplines as they provide coordinated services to patients. These curricular experiences include practitioners and/or students from the other health professions.

(A complete list of the accrediting bodies and the standards addressing interprofessional education is located in Appendix C.)

Interprofessional Education in Texas

The Texas IPE Consortium

The QEP Leadership Team also considered the unique resources of the Texas IPE Consortium. Originally formed as the Texas IPE Task Force in 2015, the group was created in response to a mandate by the Texas Legislature to “Explore Opportunities for the Institutions to Work Together.” Since its inception, the Texas IPE Consortium has sought to unite institutions throughout the state to share IPE initiatives, experiences, and lessons learned. The Consortium has focused on:

1. Championing statewide implementation of the Fundamentals of TeamSTEPPS ® for Health Professions Education
2. Enhancing Interprofessional Education and Practice in clinical and advanced practice settings
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Baylor College of Medicine
Houston Methodist
Rice University
Texas A&M University Health Science Center
Texas Christian University
Texas State University
Texas Tech University Health Sciences Center
Texas Tech University Health Sciences Center El Paso
Texas Woman’s University
University of Houston
University of North Texas Health Science Center

3. Developing a statewide conference/symposium for interprofessional training

The following institutions have joined forces to accelerate efforts to achieve excellence in IPE and safety for health professions education in Texas:

TeamSTEPPS © (Team Strategies & Tools to Enhance Performance & Patient Safety)

Members of The Texas IPE Consortium have presented recommendations to their respective institutions to create capacity for TeamSTEPPS® as a resource for effectively developing team performance to increase patient safety and improved healthcare outcomes. TeamSTEPPS® is an evidenced-based program developed by the Department of Defense and the Agency for Healthcare Research and Quality (AHRQ) that incorporates effective safety tools developed by national defense programs and the airline industry. The techniques have been adapted and applied to healthcare environments to improve quality, safety, and efficiency in patient care.

UTMB joins with the consortium’s recommendations to incorporate TeamSTEPPS® into our faculty development and student learning objectives as part of IPE²Practice. The first TeamSTEPPS® faculty development pilot has been planned for spring 2018. In addition, TeamSTEPPS® training will be utilized in simulations and practice settings. We will utilize the program’s assessment tools to mark progress on the implementation of the curriculum components.
Developing IPE²Practice

The literature and institutions’ experiences are replete with examples and issues that create challenges for implementing interprofessional educational models that merge complex systems. It is important to recognize and understand these barriers in order to create innovative solutions in the design and implementation of interprofessional education and practice. Commonly-encountered challenges across institutions include psychosocial issues such as moving students and faculty from “professional silos” into teams requiring increased communication and understanding of each other’s roles. Logistical issues such as disparate schedules and academic calendars with crowded curriculum highlight the need for cross-curricular planning and communication by faculty who are willing to support interprofessional teamwork. Students in varying backgrounds and educational levels add to the complexity. In addition, faculty structure is traditionally school-based with resources dedicated specific to the discipline.

As IPE²Practice progresses so will solutions to the barriers that interprofessional education encounters. Through the plan, early exposure to interprofessional education and practice will help students understand the roles of teams before roles become too narrowly defined. Well-planned interprofessional events with specific learning objectives centered on the core competencies will bring students together and create a new sense of belonging. Students will see themselves as belonging to diverse groups instead of specific siloes. Interprofessional simulations and clinical experiences will allow students to understand different roles while sharing responsibilities for patient safety and health outcomes.

Also addressing the issue, will be the reworking of the current Interprofessional Scholars Program. For our new plan, the scholars program will include increased rigor so that students who choose to be in the program, will meet the requirements of the three-phase model of “Introduction”, “Integration”, and “Immersion”. To qualify for Interprofessional Scholar distinction and receive a medal at graduation, students must receive digital badges in each phase. The culmination of the program will yield an Immersion project completed with an interprofessional team and based on involvement on a interprofessional team.
Overview of UTMB’s Quality Enhancement Plan

The following table outlines the IPE² practice plan including the program goal and student learning goal. Objectives, methods, outcomes, and assessments are briefly identified with further explanation contained within this document.

<table>
<thead>
<tr>
<th>Goals</th>
<th>Objectives</th>
<th>Methods</th>
<th>Outcomes</th>
<th>Assessment</th>
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</table>
| 1. Enhance the learning environment to prepare students for work on interprofessional teams | Prepare faculty to innovate, model, and deliver interprofessional education | A. Implement linkages of IPEP goals to IPEC Core Competencies  
B. Facilitate faculty development in IPEP pedagogy  
C. Include one new IPEP track in Academy of Master Teachers (AMT) track | Train Faculty: 10% Yr 1  
20% Yr 2  
30% Yrs. 3-5 | A. Monitor participation in IPEP Professional Development  
B. Professional Development Survey  
C. Interprofessional Facilitation Scale (IPFS)  
D. Monitor AMT for participation in PEP track |
| Infuse IPEP in: a. Core education programs  
b. Experiential education programs | A. Utilize the Interprofessional Curriculum Committee to delineate opportunities for cross multi-educational programs  
B. Develop new courses | A. Identify one course to modify for IPEP.  
B. Identify one experiential course  
C. Develop one new IPE course to improve team-based learning | Monitor number of new courses |
| Create mechanisms for sharing, acknowledging, and rewarding interprofessional involvement | A. Create an interprofessional activities registry  
B. Implement a digital badges program  
C. Provide an annual symposium to showcase interprofessional achievements | A. Increase awareness and participation in interprofessional activities  
B. Students and faculty will have a mechanism for recording interprofessional participation  
C. Faculty and students will participate together in IPEP symposium | Monitor participation in the registry, digital badge program, and symposium |
| Interactive Skills: Teamwork Communication | Provide opportunity for student to be introduced to team-working skills | Interprofessional collaboration workshop at all-school orientation | IPEC Competency Self-Assessment Tool |
| Interprofessional Values: Ethics Roles & Responsibilities | Develop cross-institutional course on interprofessional communication | Implementation of Interprofessional Communication Course | A. Reflections  
B. Knowledge-based exams built on module objectives |
| Interprofessional Values: Ethics Roles & Responsibilities | Design large-group activity to highlight interprofessional ethics | Annual IPEP Day focusing on ethical issue | Pre/post attitudes survey that best measure the topic of the annual activity |
| Interactive Skills: Teamwork Communication | Design a collaborative activity to highlight roles and responsibilities | “What’s Wrong with Warren?” – an interprofessional case study | Pre/Post RIPLS |
IPE²Practice’s Mission, Goals and Objectives

**IPE²Practice Mission:** UTMB will prepare students to work in collaborative, interprofessional teams to enhance patient-centered healthcare through a continuum of educational and practice opportunities.

**Goals:** Two overarching goals have been identified. The first goal focuses on the program designed to improve student learning. The second goal identifies specific student learning outcomes to enhance student learning.

- **Goal 1:** Enhance the learning environment to prepare students for work on interprofessional teams.
- **Goal 2:** Equip students to graduate with necessary skills to work on interprofessional teams.

**Goal 1 – Program Goal and Operational Objectives**

Our program goal for IPE²Practice is to enhance the student learning environment to prepare students to work on interprofessional teams. In order to achieve this goal, we have three operational objectives with specific activities related to each of the three objectives. Figure 6 below outlines the goal and operational objectives with explanations of the operational objectives following the outline.

- **Operational Objective 1:** Prepare faculty to innovate, model, and deliver interprofessional education.
- **Operational Objective 2:** Infuse interprofessional education and practice into core and experiential programs.
- **Operational Objective 3:** Create mechanisms for sharing, acknowledging, and rewarding interprofessional involvement.

*Figure 7 - Goal 1*
Operational Objective 1: Prepare faculty to innovate, model, and deliver interprofessional education.

Preparing faculty to lead interprofessional experiences is a basic goal of our QEP and crucial to the success of IPE²Practice. As we work to acculturate our students into an interprofessional practice, training will be provided for our facility with the following focuses:

1. Increased awareness of the benefits of interprofessional education and practice.
2. Increased understanding among faculty about each other’s roles and responsibilities and the particulars of their schools and programs.
3. Tools to enhance collaboration among interprofessional groups of faculty and students.
4. Understanding of the importance and utilization of the IPEC Core Competencies.
5. Recognition and utilization of faculty expertise from across the disciplines to create engaging, interprofessional educational opportunities and activities.
6. Influencing student attitudes towards IPE by modeling, promoting, educating, and bringing opportunities into the curriculum and clinical practice.

Faculty will have the opportunity to engage in a variety of faculty development activities including:

Train-the-Trainer

The QEP Leadership Team’s research and investigation identified the Train-the-Trainer Interprofessional Faculty Development Program (T3-IFDP) as a major component of the faculty development for IPE²Practice. T3-IFDP is a nationally-recognized faculty development designed with a focus on interprofessional practice and education for clinical educators and collaborative practice partners. The 3.5-day workshops are hosted at three university sites around the country: the University of Washington (Seattle, WA), the University of Virginia (Charlottesville, VA), and the University of Missouri (Columbia, MO). Objectives of the program are to:

1. Develop and customize IPE activities across the learning continuum (from academia to practice).
2. Utilize methods and approaches to evaluate and assess the effectiveness of IPE across the learning continuum.
3. Develop emerging IPE and collaborative practice leaders to champion cultural changes within educational and healthcare systems.
4. Create IPE and collaborative practice activities grounded in the concepts of team dynamics and culture change.
5. Utilize and model innovative teaching approaches to facilitate IPE and collaborative practice.
6. Implement plans for leading and sustaining meaningful IPE and collaborative practice at their own
IPE²Practice’s Mission, Goals and Objectives

7. Utilize communication tools and techniques that facilitate discussions and interactions that enhance team function and improve patient safety.
8. Establish an interprofessional peer network to help expand the capacity of faculty who can successfully lead and facilitate IPE and interprofessional collaborative practice in the U.S.

The longitudinal program provides training to interprofessional teams with the goal of implementing an interprofessional education, interprofessional collaborative practice or practice transformation project at the participating team’s home institution.

Leadership tools are included in the training so that teams can implement effective interprofessional education and collaborative projects. The participants will be able to train future IPE leaders to increase IPE capacity and sustainability. The IPE²Practice budget specifically provide for this training to be delivered.

Lunch and Learn Series

The Office of Interprofessional Education and Practice will host quarterly IPEP Lunch and Learn faculty development events each year. As reflected in the timeline, these events will provide opportunities for faculty from across the disciplines to meet with each other for interprofessional collaboration. Participants will have the opportunity to learn about each other’s programs and map ways to coordinate efforts to create interprofessional learning opportunities for students. In addition, the series will help participants actively learn about the IPEC Core Competencies and ideas for pedagogical application. Also included in the series will be topics that help faculty integrate interprofessional ideas into existing programs and activities, and how to assess the outcomes for meaningful use. The overarching goal is to allow time for faculty to build collaborative relationships to directly impact the development of collaborative, practice-ready health professionals.

TeamSTEPPS®

TeamSTEPPS is an evidence-based teamwork system to improve communication and teamwork skills among healthcare professionals. The system was developed by Department of Defense's Patient Safety Program in collaboration with the Agency for Healthcare Research and Quality and is widely used to provide interprofessional faculty development and student learning opportunities. Included in the program are online modules, face-to-face interventions, and reliable and viable assessment tools.

Operational Objective 2: Infuse interprofessional education and practice into core and experiential programs.
The Interprofessional Curriculum Committee, composed of representatives from each of the school’s curriculum committees, will oversee the identification of interprofessional opportunities. The charge of the committee will be to infuse interprofessional education and practice into core education courses and experiential education programs. Specifically, the committee will identify existing courses, similar in nature, that transcend individual school curriculums. For example, a form of medical ethics is currently taught in all four schools. These courses could possibly be reconfigured to include interprofessional students being taught by interprofessional faculty. Other courses for investigation are informatics, anatomy, and professionalism.

Additionally, the committee will identify experiential education programs that can be modified to create interprofessional teamwork opportunities. Currently students from each of the schools are involved in a variety of experiential learning activities including simulations, standardized patients, community service, and a student-run clinic for the underserved population. Assessments will vary according to the scope of activities and programs.

**Operational Objective 3: Create mechanisms for sharing, acknowledging, and rewarding interprofessional involvement.**

Creating and implementing interprofessional education activities and learning opportunities are tasks that involve immense planning, collaboration, and the overcoming of barriers such as time constraints, curriculum logistics, and resources. To reap maximum benefits from interprofessional learning opportunities, it is important to have a system to share and communicate the interprofessional offerings available to students and faculty. It is equally important for students to document their interprofessional involvements for schools and program coordinators. Students will also highlight interprofessional practices in their curriculum vitas, where IPE practice is highly valued by future employers and residency programs. As part of IPE²Practice, these objectives will be accomplished by three methods:

1. Interprofessional Activities Registry
2. Digital Badging for Faculty and Students
3. A symposium to showcase interprofessional work and recognize outstanding faculty and students who have modeled interprofessional excellence

**Interprofessional Activities Registry**

For IPE²Practice, we are modeling our Interprofessional Activities Registry after the online site hosted by the Texas Tech University Health Science Center. The institution is also part of the Texas IPE Consortium that promotes shared resources. The registry is designed by our internal Information Technology/Services Department and will be located on the IPEP website managed by the Office of IPEP. Faculty can register for interprofessional course, events, community engagements, and trainings. The Office of IPEP will review the registration form for compliance of the requirements for
inclusion on the registry.

Requirements for approved IPE Learning Activities:

- Involvement of two or more professions
- Opportunities to learn about, from, and with one another
- Significant interactivity between participants
- Teaching and learning about interprofessional practice and education is intentionally integrated into the activity
- Interprofessional practice and education constructs are targeted with IPE learning objectives (IPE learning objectives below) and are also discussed, trained, reviewed, and/or assessed as part of the learning activity.

Note: All criteria must be met to register the IPE learning activity. Information gathered in the registration process includes:

A complete registration form is located in Appendix D.

**Digital Badging to Share, Acknowledge, and Reward IPEP Involvement**

A digital badge is an electronic means to record an individual’s achievements. These badges can be embedded into a CV, e-portfolio, or social media such as LinkedIn. Digital badges are valued by employers looking for evidence that future employees have mastered life skills and competencies not reflected in a transcript. (Mehta et al., 2013) Badges are motivators for a technology-immersed generation. As part of the goals to encourage and share interprofessional involvement, digital badges will be awarded to students upon completion of each phase. The badge will provide information such as the activities, skill level, objectives, and assessments.

**Interprofessional Symposium**

Beginning in the second year of IPE²Practice, the Office of IPEP will organize and implement an annual interprofessional symposium. The purpose of the event is to showcase the interprofessional accomplishments of students, faculty, educators, and practitioners through posters and oral presentations. Each annual symposium will feature a current interprofessional topic with objectives related to the topic. Each year, the symposium will include a poster session, a keynote speaker, oral presentations, and interprofessional awards.
**Goal 2 – Student Outcomes**

The second goal for IPE²Practice emphasizes student learning outcomes and states that our plan will equip students to graduate with necessary skills to work on interprofessional teams. Healthcare students are immersed in clinical skills necessary to perform their duties, however; the skill set addressed in this plan will focus on interprofessional skills needed to work in collaborative teams. The four student outcomes are directly related to the four IPEC Core Competencies used as the foundation of our IPE²Practice model. Goal 2 and the student outcomes are outlined in the figure 7 below. The student outcomes have been divided into two categories: interprofessional values and interactive skills. The division of these outcomes helps to assess the students learning when applying the IPEC Competency Self-Assessment Tool (Dow, DiazGranados, Mazmanian, & Retchin, 2014; Lockeman, Dow, DiasGrandos, McNeilly, Nickol, Koehn, & Knab, 2016).

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**Figure 8 - Goal 2**

- **Student Outcome 1: Values and Ethics**: Students will be equipped to determine values and ethics that create an environment of diversity, honesty, and respect. (Interprofessional Value)

- **Student Outcome 2: Role and Responsibilities**: Students will understand their roles and those of other healthcare professionals on a collaborative team. (Interprofessional Value)

- **Student Outcome 3: Interprofessional Communication**: Students will demonstrate the ability to communicate effectively on an interprofessional healthcare team. (Interactive Skill)

- **Student Outcome 4: Teams and Teamwork**: Students will apply the principles of team and relationship-building dynamics on an interprofessional healthcare team. (Interactive Skill)
The goals of IPE²Practice have been applied to a model (Figure 8) that includes three phases of interprofessional team development, beginning when students first enter UTMB. The model is built upon the IPEC Core Competencies of Values & Ethics, Roles & Responsibilities, Interprofessional Communication and Teams & Teamwork. The complete IPEC Core Competencies are located in Appendix E. Assessments begin at the introductory level with attitudes regarding interprofessional education and move to practice-based assessments at the Immersion level.

UTMB will offer a three-phase model that creates a continuum of teaching - from the introduction of IPEC Core Competencies to an immersion in practice-based settings.

*Figure 9 IPE²Practice Model*
Phase 1 - Introduction Phase:

Building upon the strengths of UTMB’s current Interprofessional Education program, this innovative plan will improve the learning environment by rooting the introductory phase for all students into the curricula through our Interprofessional Communications Course and IPE Days. IPE Days are annual one-day, conference-style events that unite all four schools together to focus on a healthcare topic designed around an interprofessional agenda.

Faculty will help provide additional, applicable interprofessional learning activities that meet with their course objectives and student learning levels. Through this plan, our learning environment will be improved by providing mandatory and elective interprofessional learning experiences that are meaningful for students enrolled in UTMB for their professional education. Upon completion of Phase One or the Introduction Phase, each student will be awarded a digital badge that can be used to explain and detail the involvement and rigor of the competency-based activities.

Team Approach to Interprofessional Activities

Currently, an all-school orientation is held during a weekend each August for all entering students. The existing agenda will be reorganized to include a time for students to meet within small interprofessional teams. These groups will be created prior to the all-school orientation. At the orientation, students will have the opportunity to meet the members of their assigned interprofessional team and will learn about the IPE²Practice program goals, a brief introduction to the IPEC Core Competencies, and the value of UTMB’s interprofessional culture.

Students will understand that UTMB is dedicated to a culture that cultivates interprofessional training. They will also learn that they will embark on a year-long journey delving into the IPEC Core Competencies. To better understand how these competencies are interwoven into best practices of a healthcare team, the interprofessional groups will be participatory. Learners will engage in hands-on, applicable activities that emphasize the importance of teamwork.

Interprofessional Communications Course

Students will be required to participate in this course, facilitated by an interprofessional team of faculty. Currently the course is under development in preparation for the implementation of IPE²Practice. The Council of Deans has approved the course and an ad hoc committee has been formed with faculty representation from each of the schools. Together, the committee members have reviewed each of the school’s accreditation standards regarding interprofessional communication and created objectives for the course. Included will be modules that cover crucial communications, public communications, problem-solving techniques, technology impact, delivering bad news, confronting unprofessional behavior, cultural communications, and healthcare literacy.

Healthcare Literacy is a completed module and has been piloted with two groups of interprofessional students. This module is designed to help students understand health literacy, identify factors that influence health literacy, and improve existing patient publications to advance health outcomes. As part of the pilot, students took a pre- and post-survey so
that facilitators could assess the course topic and contents. Figure 3 is a question from the survey indicating the students’ accord with health literacy as a topic for interprofessional communication.

Comments from students who attended the Health Literacy pilot:

- “Although I think an online module is good, I think the most benefits come from the in class session that is interprofessional. The online modules provide a good background, but could also be improved by setting up interprofessional groups before the in class meeting in order to discuss what people from different programs have had to deal with/ how they have handled the situations.” 5/9/2017 11:27 AM

- “We should work as an interprofessional group to improve health literacy.” 5/9/2017 10:10 AM

- “I really like the idea of discussing healthcare literacy. Often times, I think healthcare workers (especially those with masters/doctorate degrees) have a tendency to speak at far more advanced levels than they should. This intimidates patients and their families, which could lead to an avoidance of proper healthcare altogether. Understanding this could help to bridge the gap between us and our patients. This is so important.” 5/9/2017 10:02 AM
**IPE Days**

IPE Days are planned to provide interprofessional support to existing curricula throughout the schools. Two IPE days will be held each year – one in the fall semester and one in the spring semester.

IPE Day #1 - The Fall session is designated to address Goal 2, Student Outcome 1, Values and Ethics. Each interprofessional group of students will work through ethical issues to increase their understanding of diversity, honesty, and respect within a healthcare environment. The content will change annually to address a variety of current ethical issues facing healthcare. Faculty will write the case studies or program content and the Office of IPEP will work with the creators to construct facilitators' guides and faculty training to prepare for the event. As part of IPE Day, guest speakers with experience on the topic will provide keynote speeches. Pre- and post-surveys will be used to assess the students' interprofessional values and ethics.

IPE Day #2 - “What’s Wrong with Warren? – an interprofessional study, will be an annual event held in the Spring session with participation of early learners throughout all disciplines. The event will focus on Student Outcome 2, Roles and Responsibilities. Students will work collaboratively through an interactive case study to understand the contributions of care made by multiple disciplines.

The objectives of the event are for students to:

1. Learn the roles and responsibilities of the student’s own discipline.
2. Learn the roles and responsibilities of the other healthcare disciplines.
3. Explore three phases of care – acute, community, and convalescent.

The specified IPE Days will be created and implemented through the Office of IPEP with direction from the Interprofessional Internal Advisory Committee and input from faculty participants. Faculty from each of the schools will be recruited to serve as facilitators for the events. Faculty development and training will help ensure that interprofessional objectives, theories and best practices are understood and practiced for the events.

Although we expect flexibility with IPE Days, the events will be constructed to meet the following criteria:

1. The activity must meet the requirements found in the definition of interprofessional education with two more professions working together.
2. The activity must address at least one of the IPEC Core Competencies.
3. The activity must prove significant interactivity between participants.
4. A facilitator must be responsible for coordinating the activity.
5. The activity must include an assessment component.
Phase 2 – Integration:
As part of this phase, students will have the opportunity to work in high fidelity, low risk interprofessional simulations to build team skills that can be transferred to real-world situations. Interprofessional simulated experiences will be an important component of the curriculum providing an ideal means for students to engage in team building skills that include all of the IPEC Core Competencies. Integrating students in simulated, real life experiences will give students opportunities to practice critical thinking, decision making, delegation, teamwork, assessment, psychomotor skills, and interprofessional communication.

In its implementation, IPE²Practice will focus on the following goals in this phase:

- Link IPEC Core Competencies to interprofessional simulations
- Introduce two interprofessional simulations by Year 2 and increase by two each year
- Assess simulations based on the IPEC Core Competencies
- Provide faculty development to increase interprofessional simulation experiences
- Share IPEP simulations through the IPEP Activities Registry

Although UTMB currently incorporates simulations to support cognitive, technical, and behavioral objectives, interprofessional simulation experiences are limited in scope and occurrence. Through IPE²Practice, the number of interprofessional simulations will be increased, validated assessments will be used to measure the impact of the IPEC Core Competencies used in the simulation, faculty development will include training in interprofessional simulations, and the simulations will be shared through the Interprofessional Activities Registry for greater awareness and participation.

Clinical Simulations
Through the goals set forth in the QEP, we will utilize the new Health Education Center to increase interprofessional simulation opportunities. Skills labs will be equipped so that learners from different disciplines can together acquire skills that are commonly performed. In these instances, learners may receive instruction by faculty from multiple disciplines.

The simulation areas can be configured for different patient care situations such as an emergency room setting, complete with an adjacent ambulance bay with care being provided by a host of students from several health professions. Other simulation areas can challenge learners in settings that are equipped with critical care equipment such as ventilators, patient-care monitors, and patient simulators programmed to display complex conditions.
Simulations are not limited to the Health Education Center (HEC). The community settings, such as St. Vincent’s clinic run by UTMB medical residents and healthcare students, provide learners from all disciplines with an environment where they can learn to work together to improve healthcare services, assist with health promotion and recovery from illness.

The Office of Interprofessional Education and Practice will work with the Director of HEC and Simulation Directors to create interprofessional simulations and communicate the simulation availabilities through the Interprofessional Education and Practice website repository of IPE activities.

Two existing activities that have been piloted for use in IPE²Practice are:

**Clinical Skills Experience**

Preparing School of Medicine students for clinical rotations provides an opportunity for interprofessional practice with School of Nursing students at the Clinical Skills Experience. In the high-fidelity, interactive environment, nursing students serve as instructors and coaches for the medical students who learn basic procedures and how to manage high acuity situations. These collaborative efforts will yield honed skills, professional awareness, and an understanding of each other’s roles and responsibilities in health. The Clinical Skills Experience is a required course for School of Medicine students to prepare for clinical rotations in their third and fourth years of school. In this course, the students learn basic procedures such as peripheral intravenous catheter insertion, venous blood draw, nasogastric tube insertion, urethral catheterization, hand hygiene, and point-of-care testing. In addition, students practice electronic medical record navigation and write SOAP (Subjective, Objective, Assessment, and Plan) notes to be included in the medical records. School of Nursing students in their fourth and final semester at UTMB are enrolled in the Leadership and Practice/Capstone course and are trained in these basic procedures.

**Patient Mobility Clinic**

This simulation involves early mobility of ventilated patients in the intensive care unit (ICU). In this simulation, respiratory care students will work with physical therapy students to treat patients who are intubated and mechanically ventilated. Treatment often includes range of motion exercises and transferring patients to and from the bed. Faculty designed the activity so that the students could provide mutual teaching as well as demonstrate competence in interprofessional communication. The activity requires that students not only discuss their individual roles and responsibilities, but that they must also communicate with one another and plan the transfer of a mechanically ventilated patient to the bedside safely. The respiratory care students explain the airway, primary ventilator modes, settings, and alarms they may experience when moving a patient. The physical therapy students provide a plan to evaluate the patient’s ability to assist in the transfer, describe the importance and rationale for range of motion exercises, and coordinate how to
accomplish the transfer with proper body mechanics. After devising the plan of care, the students sit the patient at the bedside. During the transfer, the facilitator triggers the ventilator alarm and engages the students to determine the alarm’s cause and the appropriate action to take. This early mobility activity allows the students to learn with, from, and about each other.

**Community Simulations**

- **Disaster Day** – In preparation for IPE²Practice, students in the Interprofessional Scholars Program created a large-scale simulation of a natural disaster. This simulation was designed to teach interprofessional teams of healthcare students to work together in an adverse situation. The students collaborated on an existing disaster response activity, “The Hydrofluoric Acid Symposium,” simulating a toxic chemical release caused by the landfall of a tropical storm. Learning objectives included the IPEC Core Competencies, emphasizing interprofessional teamwork. Student participants learned about interprofessional communication, the triage system and how to effectively prioritize and organize their teams to provide effective healthcare in an emergency.
  
  In the pilot program, third- and fourth-year medical and nursing students teamed up as first responders who “treated” patients affected by the acid release. The patients were student volunteers. The event will be part of IPE²Practice beginning the first year of the plan’s implementation with plans for all disciplines to participate.

In addition to Disaster Day, two community simulations will also be added to our plan in order to create options and flexibility for student learning. Those simulations are:

- **Poverty Simulation**
  
  The Office of Interprofessional Education and Practice will partner with Global Health to provide poverty simulations. The simulation provides interactive experiences that allows students to play the roles of low-income family members who experience various real-life scenarios. The simulation helps students understand the impact of poverty on health care and includes the IPEC Core Competencies focusing on Values & Ethics.

- **Pandemic Simulation**
  
  Preparing for a pandemic allows interprofessional teams of students to work through a simulated case encouraging interprofessional teamwork. Through the emergency simulation, students will understand their
professional roles and those of others on the team. An ethical component will help students better understand the IPEC Core Competency, Values & Ethics.

**Phase 3 - Immersion:**

In the immersion phase of our learning continuum, students practice or share their clinical experience on interprofessional teams. Students will work with an interprofessional team to complete a quality improvement or scholarly project. Part of our QEP plan is to accurately map our clinical and practice endeavors and identify areas that present interprofessional opportunities. When natural linkages are identified, learning levels can be identified and specific experiences can be put in place. The Director of IPEP will work with the Interprofessional Practice Committee to identify, develop, and assign clinical practice opportunities. The Director of IPEP will be responsible for adding two interprofessional sites per year beginning in 2019.

**Currently Identified Activities:**

Medical Mission Trips: UTMB offers several mission trips each year that promote interprofessional collaboration in medical treatment to the underserved. *Frontera de Salud* and *Hands and Feet* are two specific philanthropic organizations that organize these trips.

St. Vincent’s House - St. Vincent’s Student Clinic is a free clinic that treats uninsured patients. In partnership with UTMB, St. Vincent’s House provides care for the underserved in the areas of general medicine, rheumatology, dermatology, psychiatry, neurology, obstetrics and gynecology. The clinic is supervised by a faculty adviser. An interprofessional team of students serves as senior directors, clinical directors, non-clinical directors, and lab directors. Together they focus on the prevention, diagnosis, and treatment of adult diseases such as diabetes and hypertension. Students have the opportunity to practice point-of-care testing and providing healthcare. Upper level students and directors are present at all times to assist underclassmen.

Clinical Safety and Effectiveness – Students are invited to participate in the Health Systems Clinical Safety and Effectiveness (CS&E) that includes quality improvement projects completed by an interprofessional team.

Progression of Care Rounds (POCR) - The UTMB Health System provides this interprofessional care model that includes the patient’s primary nurse, case managers, and social workers, who help reconcile whether a request for a particular medical treatment will be covered by the patient’s insurance coverage plan. The team works closely with patient care facilitators and a combination of physical/occupational therapists, pharmacists, nutritionists, and respiratory technologists. By meeting several times each week, the group has ongoing discussions about the patient’s plan of care.
They also discuss the value each brings to patient care and discharge.

Texas Area Health Education Center (AHEC) - The AHEC Scholars Program is designed for students interested in gaining additional training and team-based clinical experiences working in rural areas and/or underserved populations. AHEC Scholars will practice interprofessional collaboration and better position themselves to join a well-prepared, diverse and culturally competent primary care workforce.

Global Health – The UTMB Center for Global Health Education (CGHE) provides training to health professionals to work with vulnerable populations locally and abroad. UTMB’s Center for Global Health Education provides interprofessional learning opportunities on campus while working with long-term partners to provide safe, well-supervised, and meaningful international electives for learners.

The global health partnerships that are at the crux of our program include field sites in Kenya, Uganda, Peru, and the Dominican Republic. Students’ collaborative projects add significant value to collaborative efforts. As part of the CGHE, the Global Health Interprofessional Core Course (GHICC) is an elective course offered to students from all four schools at UTMB. The curriculum provides an overview of critical issues in understanding global health challenges in contemporary society within a multidisciplinary, interprofessional learning environment. Small groups will be formed and cover each module. The GHICC is taught by a multidisciplinary team of UTMB and guest faculty with experience in the topic areas which include:

1. Introduction to global health and international development
2. Human rights and social justice
3. Public health and socio-economic determinants of health
4. Non-governmental associations and civil society
5. International aid and humanitarian assistance
6. Medical volunteerism and cultural competency

The course is designed to encourage reflection on the local as well as the global applications of the topics. Medical students participating in the Global Health Track are required to attend GHICC sessions during their first-year. However, medical students do not receive academic course credit. Students in Occupational Therapy, Physical Therapy, Clinical Lab Sciences, Physician Assistant Studies, and Graduate School of Biomedical Sciences may be able to receive academic course credit.

Clinical Partners in Medically Underserved Areas of Texas - A recent grant awarded to The School of Health
Professions offers a timely program that complements the efforts of IPE²Practice. The grant is aimed at bridging the diversity gap by providing opportunities to increase and retain minority students while providing quality clinical sites in underserved areas of Texas so that these students can practice on interprofessional teams. The objectives of the program work synchronously to meet the needs of students and patients. Health education programs are encouraged to increase enrollment to meet the shortages of health care providers but increased enrollments creates demand for clinical sites. For optimum learning, a clinical site should include strong interprofessional educational components so students can participate in real-world, team-based approaches to health care delivery. Currently, interprofessional learning activities at UTMB are limited to the classroom/campus environment. For true, authentic learning, it is important to translate these experiences into clinical settings so students can practice patient-centered care delivered by an interprofessional team. Objectives of the program are:

1. Increase overall enrollment among five programs in the School of Health Professions (SHP) by 135 with a 4% increase in African American students and a 5% increase in Hispanic students with a 90% retention rate among all of the SHP programs
2. Development and implement a core interprofessional curriculum for clinical education
3. Develop new clinical sites in medically underserved areas of Texas

The Directors of Clinical Education for physical and occupational therapy, clinical lab sciences, respiratory care, and physician assistant studies will collaborate to develop the clinical sites and the interprofessional curriculum. Recruitment for participants in the program will focus on diversity and equal representation from each participating department. Training sessions for clinical instructors will be developed and retention efforts will include tutoring peer mentors. Methods of data collection and evaluation will include survey of experiences, assessment forms from disciplines, competency testing curriculum evaluation with focus groups, and attitude change surveys. The Office of Interprofessional Education will support this effort by rewarding efforts through the Interprofessional Scholars Program.
Digital Badging and the Interprofessional Scholars Program

Students will have the opportunity to manage digital badging through Blackboard. These badges will be awarded by faculty following an assessment of the requirements for the badges. Design and infrastructure will begin in the first year of IPE²Practice implementation.

Each phase will have a designated badge that will include information such as a description of the phase, the requirements needed to achieve the badge, the interprofessional activities involved in the phase, skill sets, and IPEC Core Competencies addressed in the activities. This system will serve for students’ use in their curriculum vitas in today’s healthcare job market and residency programs that places value in interprofessional competencies.

To earn the badges, student must complete the following:

Introduction:

Participate in:

- All-School Orientation Interprofessional Introduction - “Team Approach to Interprofessional Activities”.
- IPE Day - Ethical Training.
- IPE Day - “What’s Wrong with Warren?” - interprofessional case study.
- Interprofessional Communications Course.

Integration:

- Participate in an interprofessional simulation with at least two professions. (The simulations must be approved and part of the Interprofessional Activities Registry.)
- Participate in an interprofessional debrief.

Immersion Phase:

- Work on an interprofessional team in a practice setting that is approved and part of the Interprofessional Activities Registry.
- With the team create a scholarly or quality improvement project based on the Immersion Project Rubric.
- Present the project to related audience/stakeholders.

The Interprofessional Scholars Program

Students who receive a badge from each of the phases (three badges collectively) will have the opportunity to become Interprofessional Scholars. Participants in the program will present their cumulative work on an e-portfolio that will be evaluated by faculty. Students who meet the requirements will be presented with a medal at graduation and recognized in the ceremony program.
The activities in the timeline correlate to the Program Goals and Student Learning Outcomes

<table>
<thead>
<tr>
<th>Goal</th>
<th>Activities</th>
<th>Responsibility</th>
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</table>
| 1    | Recruit and name IPE²Practice Leadership  
      A. Interprofessional Internal Advisory Committee  
      B. Interprofessional Curricula Committee | Office of IPEP |
| 1.1  | Provide faculty development opportunities:  
      A. Lunch and Learn Series (2)  
      B. Train the Trainer (1)  
      C. TeamSTEPPS® Training (1) | Office of IPEP |
| 1.1  | Survey faculty to determine interprofessional faculty development needs and interests | Office of IPEP/OEI |
| 1.2  | Create a sub-committee of the Interprofessional Internal Advisory Committee to organize an interprofessional symposium for year 2 of IPE²Practice | Interprofessional Internal Advisory Committee |
| 1.3  | Design a digital badge for Introduction Phase | Office of IPEP |
| 1.3  | Collaborate with IT Department to create Interprofessional Activities Registry infrastructure  
      A. Work with Interprofessional Internal Advisory Committee to create criteria for inclusion of activities  
      B. Create online form for registering interprofessional activity | Office of IPEP/IT |
| 2.1  | Introduce entering students to IPEC Core Competencies with the implementation of the following activities:  
      A. All-School Orientation Interprofessional Introduction/Team Approach to Interprofessional Activities  
      B. IPE Day – Values & Ethics Topic  
      C. “What’s Wrong with Warren” an interprofessional case study focusing on Roles & Responsibilities | Office of IPEP  
      Interprofessional Internal Advisory Committee  
      Faculty |
| Charge | Interprofessional Curricula Committee to:  
      A. Prepare to launch Communications Course in Year Two  
      B. Compare each school’s/department’s accreditation standards for IPEP  
      C. Create commonalities of IPEP accreditation standards  
      D. Identify core and experiential courses that offer opportunities to restructure for interprofessional dissemination | Interprofessional Curricula Committee  
      Office of IPEP/OIE |
# Timeline for Implementation

## YEAR TWO

<table>
<thead>
<tr>
<th>Goal</th>
<th>Activities</th>
<th>Responsibility</th>
</tr>
</thead>
</table>
| 1.1. | Continue faculty development opportunities:  
   A. Lunch and Learn Series  
   B. Train the Trainer  
   TeamSTEPPS | Office of IPEP |
| 1.1  | Provide faculty/preceptor training on interprofessional topic based on survey from Year One | Office of IPEP  
   Interprofessional Internal Advisory Committee |
| 1.2  | Add two interprofessional simulations  
   A. Clinical simulation  
   B. Community simulation  
   Assess the simulations with interprofessional instrument  
   Begin application process for Immersion Phase | Interprofessional Curricula Committee  
   Office of IPEP  
   OIE |
| 1.2  | Director of IPEP collaborates with clinical directors to map existing sites and identify two new interprofessional practice sites | Office of IPEP |
| 1.3  | Provide digital badge for Introduction Phase  
   Create digital badge for Integration Phase | Office of IPEP |
| 1.3  | Execute Interprofessional Symposium to recognize interprofessional contribution of faculty and students | Office of IPEP |
| 1.3  | Roll out Interprofessional Activities Registry | Office of IPEP |
| 2.1  | Continue Introduction Phase from Year One  
   Introduce Interprofessional Communications Course | Office of IPEP  
   Interprofessional Curricula Committee |
| 2.2  | Maintain scheduled meetings with  
   A. Interprofessional Internal Advisory Committee  
   - Assessment of Year 1  
   B. Interprofessional Curricula Committee  
   - Launch Interprofessional Communications Course  
   - Design one core and one experiential course | Office of IPEP |
### Timeline for Implementation

<table>
<thead>
<tr>
<th>YEAR THREE</th>
<th>YEAR THREE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal</strong></td>
<td><strong>Activities</strong></td>
</tr>
</tbody>
</table>
| 1.1 | Continue faculty development opportunities:  
A. Lunch and Learn Series  
B. Train the Trainer  
C. TeamSTEPPS® | Office of IPEP |
| 1.1 | Provide faculty/preceptor training on interprofessional topic based on survey from Year Two | Office of IPEP |
| 1.2 | Continue Introduction Phase from Year Two. Assess Interprofessional Communications Course | Interprofessional Curricula Committee Office of IPEP OIE |
| 1.2 | Add two interprofessional simulations  
A. Clinical simulation  
B. Community simulation  
C. Assess the simulations with interprofessional instrument  
Add an interprofessional core course | Interprofessional Curricula Committee Office of IPEP OIE |
| 2.1 | Place students on teams for Immersion Phase – Cohort #1 | |
| 2.2 | Director of IPEP continues to collaborate with clinical directors to identify two interprofessional practice sites | Office of IPEP |
| 1.2 | Continue Introduction Phase from Year Two. Assess Interprofessional Communications Course | Interprofessional Curricula Committee Office of IPEP OIE |
| 1.3 | Provide digital badge for Integration Phase  
Create digital badge for Immersion Phase | Office of IPEP |
| 1.3 | Host annual Interprofessional Symposium to recognize interprofessional contribution of faculty and students. | Office of IPEP |
| 1.3 | Publicize Interprofessional Activities Registry to increase activities and utilization | Office of IPEP |
| 1.3 | Maintain scheduled meetings with  
A. Interprofessional Internal Advisory Committee  
B. Interprofessional Curricula Committee  
   - Assessment of Year 2  
   - Pilot interprofessional core and experiential course with a student focus group. Analyze data  
   - Investigate opportunities for additional interprofessional courses | Office of IPEP |
## Timeline for Implementation

<table>
<thead>
<tr>
<th>Goal</th>
<th>Activities</th>
<th>Responsibility</th>
</tr>
</thead>
</table>
| 1.1  | Continue faculty development opportunities:  
    A. Lunch and Learn Series  
    B. Faculty will served as trainers in institutional Train the Trainer  
    C. TeamSTEPPS® | Office of IPEP |
| 1.1  | Provide faculty/preceptor training on interprofessional topic based on survey from Year Three | Office of IPEP |
| 1.2  | Continue Introduction Phase from Year Three adjusting to meet ongoing evaluation and recommendations. | Interprofessional Curricula Committee  
Office of IPEP  
OIE |
| 1.2  | Add two interprofessional simulations  
A. Clinical simulation  
B. Community simulation  
C. Assess the simulations with interprofessional instrument  
D. Immersion Phase #1 Cohort Presents Projects  
E. Immersion Phase #2 begins | Interprofessional Curricula Committee  
Office of IPEP  
OIE |
| 2.1  | Director of IPEP continues collaborates with clinical directors to identify interprofessional practice sites | Office of IPEP |
| 1.3  | Provide digital badge for all phases  
Assess digital badge program | Office of IPEP |
| 1.3  | Host annual Interprofessional Symposium to recognize interprofessional contribution of faculty and students. | Office of IPEP |
| 1.3  | Publicize Interprofessional Activities Registry to increase activities and utilization | Office of IPEP |
|      | Maintain scheduled meetings with  
A. Interprofessional Internal Advisory Committee  
   • Assessment of Year 3  
B. Interprofessional Curricula Committee  
   • Launch core and experiential courses  
   • Investigate opportunities for additional interprofessional courses | Office of IPEP |

**YEAR FOUR**
<table>
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<tr>
<th>Goal</th>
<th>Activities</th>
<th>Responsibility</th>
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<tbody>
<tr>
<td>1.1</td>
<td>Continue faculty development opportunities:</td>
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<tr>
<td></td>
<td>A. Lunch and Learn Series</td>
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<td></td>
<td>B. Faculty will served as trainers in institutional</td>
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<tr>
<td></td>
<td>Train the Trainer</td>
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<tr>
<td>1.1</td>
<td>Provide faculty/preceptor training on interprofessional</td>
<td>Office of IPEP</td>
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<tr>
<td></td>
<td>topic based on survey from Year Four</td>
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<td>1.2</td>
<td>Continue Introduction Phase from Year Four adjusting to meet</td>
<td>Interprofessional Curricula Committee</td>
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<td></td>
<td>ongoing evaluation and recommendations</td>
<td>Office of IPEP OIE</td>
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<tr>
<td>1.2</td>
<td>Add two interprofessional simulations</td>
<td>Interprofessional Curricula Committee</td>
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<td></td>
<td>A. Clinical simulation</td>
<td>Office of IPEP OIE</td>
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<tr>
<td></td>
<td>B. Community simulation</td>
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<tr>
<td>2.1</td>
<td>Assess the simulations with interprofessional instrument</td>
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<tr>
<td>2.2</td>
<td>Immersion Phase – Cohort #2 Presents Projects</td>
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<td>2.3</td>
<td>Cohort #3 begins</td>
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<td>2.4</td>
<td>Director of IPEP continues collaborates with clinical</td>
<td>Office of IPEP</td>
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<td></td>
<td>directors to identify interprofessional practice sites</td>
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<tr>
<td>1.3</td>
<td>Provide digital badge for all phases</td>
<td>Office of IPEP</td>
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<tr>
<td></td>
<td>Assess digital badge program</td>
<td></td>
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<tr>
<td>1.3</td>
<td>Host annual Interprofessional Symposium to recognize interprofessional</td>
<td>Office of IPEP</td>
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<tr>
<td></td>
<td>contribution of faculty and students</td>
<td></td>
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<tr>
<td>1.3</td>
<td>Publicize Interprofessional Activities Repository to increase activities</td>
<td>Office of IPEP</td>
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<tr>
<td></td>
<td>and utilization</td>
<td></td>
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<tr>
<td></td>
<td>Maintain scheduled meetings with</td>
<td></td>
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<td></td>
<td>A. Interprofessional Internal Advisory Committee</td>
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<td></td>
<td>• Assessment of Year 3</td>
<td></td>
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<tr>
<td></td>
<td>• Prepare for QEP five-year report</td>
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<td></td>
<td>B. Interprofessional Curriculum Committee</td>
<td></td>
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<tr>
<td></td>
<td>• Review data from core and experiential course. Adapt course based</td>
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<td></td>
<td>on feedback</td>
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<tr>
<td></td>
<td>• Investigate opportunities for additional interprofessional courses</td>
<td></td>
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<tr>
<td></td>
<td>Office of IPEP OIE</td>
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</tbody>
</table>
Organizational Chart

Figure 11 - IPE²Practice Organizational Chart
Committee streamlining is an effort to create a more efficient and effective system for deliverables. The IPE²Practice organizational structure mirrors this goal by incorporating a system building on established resources and institutional-supported committees. As a result, IPE²Practice can successfully be implemented, with the mission and strategic plan incorporated into the structure.

*The President’s Office*

IPE²Practice embraces the strategic plan, and the President’s Office is included as part of the QEP organizational structure. The president is responsible for oversight of the Office of Development, leading our "Innovations in Mind" campaign that funds the Health Education Center. This office is also responsible for community leadership and the overall institutional strategic plan.

*The Provost’s Office*

The Office of Interprofessional Education, and Practice will report directly to the Office of the Provost. The office provides leadership and support to the four UTMB schools known as the Academic Enterprise. The Provost Office staff works to ensure excellence in education, research, and patient care and that the best interests of students, residents, faculty, and staff are central to its overall mission of improving health. The goals of the Provost’s Office include recruiting and retaining exemplary and diverse faculty and staff; and providing the best possible resources in support of excellent teaching, research, and clinical endeavors.

*The Office of Interprofessional Education and Practice*

The hub of the organizational structure will be the Office of Interprofessional Education and Practice (Office of IPEP). This department will have direct impact on the creation, planning and execution of interprofessional activities for students and faculty.

The Office of IPEP will be responsible for:

- Representation on committees to further collaborative, interprofessional efforts.
- Interprofessional activity coordination.
- Faculty Development - A major focus of IPE²Practice is creating a strong team of interprofessional faculty equipped with the knowledge and skills of organizing and executing interprofessional activities and curriculum.
- Budget – The Office of Interprofessional Education and Practice maintains a current budget and will monitor IPE²Practice budget.
- Interprofessional Scholars Program.
Institutional Capacity

- IPE²Practice Assessments – The Office of IPEP will work in concert with OIE and the Office of Education to assess IPE²Practice educational activities.

The Vice President of Interprofessional Education, and Institutional Effectiveness, and Director of the Health Education Center

The Vice President of Interprofessional Education, and Institutional Effectiveness, and Director of the Health Education Center will provide oversight and leadership for the ongoing development and implementation of IPE²Practice and will be an active member of institutional strategic and planning committees. The person in this position will be responsible for oversight for the IPE²Practice assessments and evaluations and will lead the direction and actions of the QEP based on institutional data.

Director of Interprofessional Education

The Director of Interprofessional Education will report to the Vice President of Interprofessional Education. This position is currently in place and when IPE²Practice begins, the Director will be responsible for:

- Overseeing the interprofessional activities and events to help meet the student learning objectives and the program goals.
- Developing a repository of interprofessional activities for IPE learning activities that have been approved by faculty and leadership.
- Directing data collection and maintenance and the implementation of digital badging.
- Collaborating with faculty across the institution to assist with development and implementation of interprofessional activities.
- Provide oversight for the Interprofessional Scholars Program.
- In addition, the Director of IPEP will implement placement of students in interprofessional practice environments.

Interprofessional Curricula Committee

This newly-formed committee will fill the gap for an overarching curricula oversight body with representatives from each of the schools’ curriculum committees. The committee will be charged with identifying and infusing interprofessional education and practice opportunities in the curricula.
Interprofessional Internal Advisory Council

Members of the current QEP Leadership will be invited to serve on the newly-formed Interprofessional Advisory Council. The committee will also include additional members of the faculty, student body, Health System, and community. The Director of Interprofessional Education, and Practice, and the Associate Vice President of Institutional Effectiveness will serve as an ex-officio member.

This council will be charged with oversight of sub-council teams – assessment, organizational, actions to be implemented, and portfolio management.

Anticipated Budget

The institution remains committed to IPEP at UTMB. Below is a schedule of anticipated expenditures:

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
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<td><strong>Salaries &amp; Benefits</strong></td>
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<td>Key Personnel - Executive Director</td>
<td>34,439</td>
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<td>Key Personnel - Director</td>
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<td>114,750</td>
<td>118,200</td>
<td>121,734</td>
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<td>Personnel - Administrative Assistant</td>
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<td>41,254</td>
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<td>Institutional Effectiveness Analyst</td>
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<td>9,000</td>
<td>9,000</td>
<td>9,000</td>
<td>9,000</td>
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<tr>
<td><strong>Salaries &amp; Benefits Total</strong></td>
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<td>198,639</td>
<td>200,307</td>
<td>205,815</td>
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<td><strong>Services and Others</strong></td>
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<td>Faculty Development</td>
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<td>7,000</td>
<td>7,250</td>
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<td>Student Activities</td>
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<td>6,615</td>
<td>6,945</td>
<td>7,293</td>
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<td>Director/Staff (Travel, Conferences, workshops)</td>
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<td>2,575</td>
<td>2,650</td>
<td>2,750</td>
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<td>Program Support</td>
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<td>12,450</td>
<td>12,500</td>
<td>12,550</td>
<td>2,600</td>
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<td>Monthly Fees (Telecomm, Copier Rental, Contract IT)</td>
<td>1,000</td>
<td>6,000</td>
<td>6,000</td>
<td>6,000</td>
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<td><strong>Services and Others Total</strong></td>
<td>26,850</td>
<td>32,275</td>
<td>42,715</td>
<td>35,195</td>
<td>35,943</td>
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<td><strong>Anticipated Budget Grand Total</strong></td>
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<td>235,914</td>
<td>248,022</td>
<td>246,010</td>
<td>252,929</td>
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</table>

* 2018 reflects half of fiscal year.
Explanation for Anticipated Expenditures

Through a joint effort of members of the QEP Leadership Team and our financial administrators, the anticipated QEP budget was created to provide sufficient financial support for IPE²Practice. The anticipated budget covers a five-year plan that considers 961 faculty and 3,238 students (undergraduate, graduate, and professional) (2016 data). The budget reflects a five-year plan to cover salaries and benefits of the Office of IPEP, supplies, services, and faculty participation. It begins mid-fiscal year 2018 and continues for five years with anticipated increased enrollment, faculty, and business costs.

The anticipated QEP budget, in addition to the funds discussed above, will provide for the following program support:

Salaries and Benefits – Currently, the Office of Interprofessional Education and Practice receives support for one full time director (1 FTE) and a part-time administrative assistant (.4 FTE).

Supplies – This category encompasses day-to-day business operational needs. In addition, student recognition items such as the Interprofessional Scholars medals are provided.

Services and Other – Telecommunications contracts, student activities and faculty development. A key component of the IPE²Practice plan is providing faculty development to participating faculty from the four schools. Included costs will cover “brown bag” information sessions, and registration and travel for national conferences.

Physical Resources – The Health Education Center will provide physical space for the Office of IPEP to include the Vice President of Interprofessional Education and Institutional Effectiveness and Director of the HEC, the Director of Interprofessional Education. In addition, the building will provide interprofessional simulations labs, debriefing rooms, and classroom space to foster interprofessional team-based learning.
An assessment plan has been created to determine successful student learning and the enhancement of the student learning environment. A comprehensive plan will ensure that the mission, goals, and educational outcomes are being met. The assessment plan includes specific measurements of each of the two goals of IPE²Practice. In addition, measurements in the three phases of the IPE²Practice will contribute to the assessment process. Measurement sources are institutionally hardwired meaning that the tools and procedures are in place or readily available. In addition, we will utilize nationally-recognized valid and reliable interprofessional assessment instruments.

The Director of Interprofessional Education is responsible for assessment of the expected program goals and student learning objectives, in collaboration with the Office of Institutional Effectiveness. The Director of IPEP will be responsible for tracking the data and publishing the results of the formative assessment in the QEP Annual Report.

Assessment by Goals:

**Goal 1. Operational Objective 1 - Prepare faculty to innovate, model, and deliver interprofessional education**

Faculty development will be assessed in three categories: monitoring the participation in faculty development activities and the feedback from the professional developments surveys, the Interprofessional Facilitation Scale, and monitoring involvement in the Academy of Master Teachers Interprofessional Track. Assessment data will be included in the QEP Annual Report and shared with the Interprofessional Internal Advisory Committee for review. The review process will be conducted quarterly to evaluate progress in faculty development through program participation, mentoring, and an increase in IPE learning opportunities.

The areas of faculty assessment include:

1. Participation/Faculty Development Survey - The Director of IPEP will track attendance of the faculty at each of the interprofessional development activities, through the registration and sign-in process. Faculty development will be necessary to be considered for the Interprofessional Faculty Leader Award.

   Faculty who participate in interprofessional development activities will complete the Professional Development Survey. The survey is managed in the Redcap system, and uses a five-point scale. Responses range from “Strongly Agree” to “Strongly Disagree” regarding statements about the training’s objectives, program design, and presentation. In addition to the statements, several open-ended questions will allow faculty to comment on the training sessions and interprofessional faculty development as a whole. The Director of IPEP will compile the results of the surveys and share the formative summaries with the developers and presenters of the training, in addition to the IPEC Advisory Council. This feedback will help improve subsequent trainings. The summaries will collectively become part of the QEP Annual Report, and provide summative assessment of overall interprofessional faculty development. – The Faculty Participation Model has been created to make explicit the manner in which faculty are recognized and receive teaching credit for IPEP student learning activities. The model draws upon the capabilities of
POWER, UTMB’s software that records faculty teaching credits. Currently only 5.4 percent of the faculty record IPEP involvement. Using that percentage as the baseline, we plan to increase faculty by 20 percent each year.

2. The Interprofessional Facilitation Scale (IPFS) – The IPFS is a 15-item tool with a 4-point scale used to assess interprofessional education facilitation (Appendix F). This instrument contains two subscales: one focuses on interprofessional facilitation, and the other on collaborative patient centered practice. The IPFS helps assess educators who are evolving their practice from a traditional, didactic role to a more interactive facilitator-of-learning role. IPFS helps assess educator effort and skills acquisition during this transition. This scale measures facilitation skills and competencies to quantify the necessary skillset for interprofessional facilitation. This tool can be used to further enhance interprofessional facilitation competencies.

3. The Academy of Master Teachers – Interprofessional Education will become a specialized track within the AMT in which participants focus their involvement on IPEP. These participants will be listed in the catalog of faculty interests in the AMT website. Currently 10 percent of the participants are recognized with IPEP interests. We plan to increase the participation by 10 percent each year.

**Goal 1. Operational Objective 2 – Infuse interprofessional education and practice into core and experiential programs**

The Interprofessional Curricula Committee will be responsible for inventorying existing courses in each of the schools. Currently there are no courses that are identified as “interprofessional” with designated IPEP course numbers. The committee will identify courses that can be transformed into interprofessional courses. The Director of IPEP will work with the curricula committee to monitor and measure this objective.

**Goal 1. Operation Objective 3 – Sharing, Acknowledging, and Rewarding interprofessional involvement**

Symposiums – For each symposium, we will monitor participation based on registration. We will evaluate the success by the total number of attendees, poster presentation, and project presentations. The first symposium will yield our baseline measure with the goal of increasing participation by 10 percent each year.

Digital Badges – We will monitor participation by the number of digital badges awarded to students and faculty. The Director of IPEP will track participation and report the findings in the QEP Annual Report.

Interprofessional Activity Registry - Success of the Interprofessional Activity Registry will be measured by the number of registrants and the number of activities. The first year of implementation will create the baseline. Our goal is to increase the number of participants and activities by 20 percent per year.
Digital Badging: Students and faculty can receive digital badges by applying for them through the Office of IPEP. The office will track the number of applicants and the number of digital badges awarded.

Interprofessional symposium: A symposium will be used to showcase interprofessional education and practice events, activities, and opportunities. We will measure success by participation in the symposium. As the activities increase, we anticipate increased participation in the symposium. We will measure the symposium’s success by counting the number of participants in the symposium, the number of posters in the poster session, and by the results of a survey designed to capture participants’ feedback.

Faculty IPE Participation Model: Participation will also be documented in the Faculty IPE Participation Model. The Faculty Participation Model has been created to make explicit the manner in which faculty are recognized and receive teaching credit for IPEP student learning activities. The model draws upon the capabilities of POWER, UTMB’s software that records faculty teaching credits. Currently only 5.4 percent of the faculty record IPEP involvement. Using that percentage as the baseline, we plan to increase faculty by 20 percent each year.

**Goal 2. Student Objectives 1 and 2 - Interactive Skills**

- **IPEP at Orientation** - Entering students will complete the IPEC Competency Self-Assessment Tool (Lockeman et al., 2016) (Appendix H) at an all-school orientation held prior to the Interprofessional Collaboration Workshop. This instrument uses individual self-assessment to assess competencies related to collaborative practice. The original tool measured students’ self-efficacy on 42 statements relating to the IPEC Core Competencies. These 42 statements included concepts in the four domains – Values & Ethics, Roles & Responsibilities, Interprofessional Communication, and Teams & Teamwork. Additional research resulted in a revised, shorter instrument with items clustered into two strong factors – Interprofessional Interactions and Interprofessional Values. For IPE²Practice, the revised instrument will be utilized. The compiled scores from this tool will be used as a baseline measure of student attitudes and self-efficacy. The students will complete the survey again at the end of the Introduction Phase, allowing a comparison of pre and post responses. Overall trends in the survey data will be used to improve activities and practices involving all faculty and students, as well as student learning outcomes in the IPE Scholars Program.

- **Interprofessional Communications Course** - The Interprofessional Communications course will involve a variety of assessment tools to measure student learning based on specific learning objectives of the modules. Faculty will utilize students’ written reflections and knowledge-based exams to measure the student understanding of interprofessional communication. Interprofessional faculty teams will be provided with the Interprofessional Reflection Guide (Appendix I) and the Interprofessional Reflection Rubric (Appendix J).
Goal 2. Student Objectives 3 and 4 - Interprofessional Values

Uniting all four schools twice each year for IPE Days provides opportunities to explore the four IPEC Core Competencies in an interprofessional setting. These events are designed to help students understand Interprofessional Values. Believing that attitudinal change is necessary for behavioral applications, we will utilize instruments that measure “attitudinal competency”.

IPE Day #1 - Ethics Training - This event will focus on an ethical exercise. Assessment of this activity will evaluate students’ attitudes on the ethical subject. Additionally, an end of activity program evaluation survey will be completed by faculty and students to determine strengths and challenges in the exercise. The participant feedback will be used for program improvements.

IPE Day #2 – “What’s Wrong with Warren?” - The interprofessional case study has specific objectives to help students understand their roles and responsibilities in addition to those of other professions. Students will take pre- and post-assessments, using the “Readiness for Interprofessional Learning Scale” Questionnaires (RIPLS; McFadyen, Webster, Strachan, Figgins, Brown, & McKechnie, 2005) to measure their attitudes about professional roles (Appendix G). The pre and post surveys will be used to determine the impact of the case study on student perceptions of interprofessional teamwork as it relates to understanding each other’s roles. In addition, follow-up activities and assessments will be conducted within discipline-specific courses.

Simulations. Integration Phase - Students participating in simulations labs will be assessed on their abilities to work on an interprofessional teams with the TeamSTEPPS® 2.0 Team Performance Observation Tool (Appendix K). This tool provides feedback to help students who are working in an interprofessional simulation. Instructors facilitating the simulation will administer the Team Observation Tool.

Immersion Project – Immersion Phase Students who chose to become part of the Immersion Phase with the goal of becoming an Interprofessional Scholar will complete a major scholarly project with an interprofessional team. An interprofessional faculty committee will assess the projects based on the rubric located in Appendix L.
### Table of Assessments

<table>
<thead>
<tr>
<th>Goal</th>
<th>Activity</th>
<th>Assessment</th>
</tr>
</thead>
</table>
| 1. 1 | Faculty Development and Participation | A. Monitor Participation  
B. Faculty Development Survey  
C. Interprofessional Facilitation Scale (IPFS)  
D. Monitor Academy of Master Teacher participation in IPEP Track |
| 1.2  | Infuse IPEP in core and experiential courses | Monitor number of course  
TeamSTEPPS® Team Observation Tool  
Immersion Project E-Portfolios |
| 1.3  | Sharing, acknowledging, and rewarding interprofessional involvement | Monitor student and faculty participation |
| 2.4  | All-School Orientation - “Team Approach to Interprofessional Activities” | IPEC Competency Self-Assessment Tool |
| 2.3  | Interprofessional Communications Course | Reflections  
Knowledge-based exams |
| 2.1  | IPE Day - Ethics Training | Attitudes survey based on topic |
| 2.2  | IPE Day - “What’s Wrong with Warren?” | Readiness for Interprofessional Learning Scale |

### Additional Measurements:

In addition to the utilization of reliable, viable assessment tools, attendance records will be analyzed after each event with projected targets, including a 10% increase each year. Program evaluation surveys will be designed based on the curricular content to determine areas of strength and improvement.

An annual tool, The Student Satisfaction Survey, has served to benchmark IPE activities and will continue as a viable source of data flow to measure and align the Quality Enhancement Plan.

The digital badging is a unique system that will not only reward student participation, it will also be used to assess IPE²Practice. We will monitor the number of students who receive badges. The following table details the outcomes to measure.
Evaluation and Assessment

<table>
<thead>
<tr>
<th>Source</th>
<th>Measure</th>
<th>Collection Approach</th>
<th>Baseline</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Badges</td>
<td>Number of Students completing badges per phase</td>
<td>Online recording</td>
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<tr>
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<td>90%</td>
<td>90%</td>
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<tr>
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<td>0</td>
<td>75%*</td>
<td>75%*</td>
<td>75%*</td>
</tr>
<tr>
<td>Integration</td>
<td></td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>50%*</td>
<td>50%*</td>
</tr>
</tbody>
</table>

* Digital Badge participation is based on 90% of entering student population completing the Introduction Phase. Seventy-five percent of the Introduction Phase will complete the Immersion Phase and 50% of the students who completed the Immersion Phase will complete the Integration Phase. The Timeline for Implementation describes the roll-out system for the badges based on the three phases.

The Impact Report

We will submit our formative QEP Impact Report to SACSCOC following the five-year implementation of IPE²Practice. Included in the report will be reference information from the initial document, adjustments made to the plan based on collected data, and achievements made as a result of broad-based involvement in student learning and student outcomes. Included in the report will be reflections of the impact of IPE²Practice as an integral part of interprofessional team building at UTMB.
The basic concept of using interprofessional teams in clinical settings started in the 1960s (Thistlethwaite, 2011), predating the development of programs and curricula promoting interprofessional education in health profession colleges and universities (Baldwin, 1996). In the early 1990s, the journal known as Holistic Medicine became The Journal of Interprofessional Care, with an editorial board that included representatives from the United Kingdom, Canada, United States, Denmark, Germany, Spain, Australia, and New Zealand. While that journal and other publications in the 1990s and early 2000s continued to emphasize team-centered and interdisciplinary/interprofessional health care, it took years for academic institutions to begin the process of overcoming “overwhelming barriers of disciplinary territoriality and systems inertia.” (Baldwin, 1996)

In 2003, the Committee on the Health Professions Education Summit at the Institute of Medicine (IOM) published Health Professions Education: A Bridge to Quality (Institute of Medicine, 2003). The Health Professions Education Summit (HPES) Committee recommended five core competencies that they believed should be adopted by institutions engaged in the education of health professionals. One of these competencies was working in interdisciplinary teams to “cooperate, collaborate, communicate, and integrate care…to ensure that care is continuous and reliable.” (Institute of Medicine, 2003).

Comprehensive searches of the interprofessional literature from covering the year 2005-2010 (Abu-Rish, et al., 2012) and 2000-2012 (Weaver, Sydney, & Rosen, 2014) suggest a rapid growth of interprofessional education in the health professions during the early 2000s. The majority of the references cited in these articles focus on efforts to implement educational programs and activities related to mutual respect, role knowledge, communication issues, and models for integrating interprofessional education into existing health professions curricula. Clinical settings, outside of the use of simulation and standardized patients, are relatively rare.

In 2008, the UTMB faculty and students selected an interprofessional education program, synergy, as the topic of their Quality Enhancement Plan (QEP). A PubMed search undertaken for that year in a specified range of publication types, including U.S. government sponsored research, case reports, congresses and conferences, government publications, historical articles, and reviews, lists 861 citations for the general key words “interprofessional education” (without modifiers). By 2015, using the same criteria, the number of publications had grown to 1,117. Not only had the interest in interprofessional education increased, but in spite of the fact that there were now journals dedicated to interprofessional education, there was also an increase in the number of journals that published one or more articles on the topic.

The Josiah Macy Jr. Foundation convened a conference in 2013 in Atlanta, Georgia, to address aligning interprofessional education with clinical practice. That conference promoted the concept of “Triple Aim,” moving toward
an integrated combination of “better care, better health, and lower costs.” In this model, the patient becomes an integral member of an interprofessional team, thereby linking interprofessional education, collaborative practice, and community health care (Cox & Naylor, 2013). The Triple Aim model placed new demands on academic health care institutions and on the health care system itself (Earnest & Brandt, 2014). Not only do the institutions have to provide opportunities for interprofessional practice, but existing providers and preceptors have to change policies and procedures to allow for interdisciplinary teams (Anderson, Ford, & Kinnair, 2016; Chen, Rivera, Rotter, Green, & Kools, 2016; Long, Dann, Wolff, & Brienza, 2014; Lutfiyya, Brandt, Delaney, Pechacek, & Cerra, 2016)

In response to these new demands, academic health profession institutions have introduced a wide range of initiatives to expand interprofessional education from introductory and integrative programs to clinical practice (Reeves et al., 2016). Didactic and small group strategies designed to improve communication among students from different professions continue, but they are increasingly being supplemented by efforts to expand opportunities not only for communication but also for collaboration in clinical settings. (Thistlethwaite, 2011).

Studies
The following literature review includes a sample of qualitative and quantitative educational intervention studies, government studies, and policy and program reviews published between 2013 and 2016. The focus is on programs worldwide that have implemented integrative and/or immersive activities into their health professions programs and curricula. In addition to limiting search to articles in English, other criteria for inclusion were that: (1) the publications had to include students from two or more pre-licensure health professions; (2) the emphasis of the study or review had to be upon interprofessional skills and/or competencies; (3) learning outcomes had to be included in the study or review; and (4) students had to be engaged in an actual or simulated clinical setting for at least a portion of the study or as the focus of the review.

English language studies listed in PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Google Scholar were searched for this review. The key words were “interprofessional education” as qualified by one or more of the following terms: “clinical,” “practice,” “simulation,” “standardized patients,” and “service learning.”

Integration
As with the pre-2013 literature, many of the studies and reviews published between 2013 and 2016 related to improving communication and teamwork. The majority focused on medical and nursing students to the exclusion of other health professions (West et al., 2016). In these studies, simulation and the use of standardized patients emerged as significant strategies to promote teamwork and improve communication between and among different health professionals. The scenario usually focused on patients with complex clinical problems that would benefit from comprehensive...
interprofessional care and case management. As examples, Liaw, Zhou, Lau, Siau, and Chan (2014) designed a simulation-based interprofessional education program for improving medical and nursing students’ communication skills in caring of a patient with physiological deterioration. Bays et al. (2014) used standardized patients in an attempt to improve communication skills between physicians and nurses in giving bad news and expressing empathy to patients and their families.

Educational strategies that included other health professions besides medicine and nursing similarly selected patients with complex problems and comorbidities. Researchers Smithburger, Kane-Gill, Kloet, Lohr, and Seybert (2013) utilized a high-fidelity simulation model with teams of medical, pharmacy, nursing, physician assistant, and social work students. They worked together in a controlled environment with complex and varied simulation scenarios of a patient in hypertensive crisis as the patient progressed through several transitions of care. Grand Valley State University researchers used a virtual patient interprofessional simulation activity with students from physician assistant, physical therapy, and occupational therapy. The students were asked to develop a comprehensive treatment plan based on the simulation (Shoemaker, Platko, Cleghorn, and Booth, 2014).

The outcomes of these studies varied. Liaw et al. (2014) found that both medicine and nursing groups demonstrated a significant improvement in communication in self-confidence and perception on post-test score from pre-test score with no significant differences detected between the two groups. Bays, et al. (2014) also found that improvement in communication skills did not vary by trainee characteristics. Smithburger, et al. (2013) found that students perceived the simulated activity improved their ability to communicate with other professions and gave them more confidence to work in an interprofessional team. Shoemaker, et al. (2014) reported that students showed a greater awareness of other professions and of collaborative patient care at the end of their interprofessional experience.

These findings differ from those cited in a review by Michalec, Giordano, Arenson, Antony, and Rose (2013). They found that for students who entered interprofessional education programs with negative perceptions of other health professions, an introduction to interprofessional education has the potential to exacerbate those perceptions. The problems cited earlier with integrating interprofessional activities in health profession curriculum were repeated by Smithburger, et al. (2013), who found similar difficulties in spite of generally positive outcomes of their study.

**Immersion**

A service-learning project targeting students across eight disciplines (physician assistant, medicine, pharmacy, dietetic internship, physical therapy, master in health administration, nursing and biomedical science) at the Medical University of South Carolina partnered with a local Area Health Education Center (AHEC) to coordinated student interprofessional learning (Buff, et al., 2015). Students found the most value in learning with students from other professions as part of the
activity, but they gave less value to the ability of the project’s ability to increase their own knowledge about their profession’s role in interprofessional work.

An interactive and longitudinal clinic experience at an inner-city charitable clinic included 13 different professions: medicine (medical and physician assistant), dentistry (dental and dental hygiene), nursing (undergraduate and clinical nurse specialist), public health, pharmacy, physical therapy, occupational therapy, nutritional sciences, speech and language pathology, and social work (Thompson, et al., 2016). While students included pharmacists, nurses, and physicians as part of the care team at all time points, they significantly increased their inclusion of dentistry, public health, social work, and physician assistants as members of the healthcare team from pre- to post-intervention.

An interprofessional student-led geriatric care clinic in Australia also used a wide range of health profession student, including dietetics, medicine, nursing, occupational therapy, pharmacy, physiotherapy, podiatry, social work, and speech pathology (Kent, Drysdale, Martin, & Keating, 2014). The students were charged with supporting patients 70 years of age and older who had been recently discharged home from an acute care hospital. Students not only reported that they gained knowledge about other disciplines and enhanced their interprofessional communication skills, they also reported that they had a greater perspective on issues that affect the health of older people.

A semester-long interprofessional elective course at Ohio State University included a service component where students provided patient care in an interprofessional student-run free clinic. Researchers found that students who provided patient care in that clinic reported a positive effect on their self-assessment of interprofessional competencies (Sevin, Hale, Brown, & McAuley, 2016). Another study in a student-run free clinic initially had a different outcome (Sick, Sheldon, Ajer, Wang, & Zhang, 2014). It involved three groups of students: volunteers in the clinic, students who volunteered but were not accepted into the clinic, and students who never volunteered. The results showed a decrease in attitudes and skills related to interprofessional learning and relationships across all three groups. Over the next two years, surveys charted an improvement among the students who were accepted as volunteers over those who volunteered and were not accepted. The latter group became more similar to those who never applied, suggesting a protective effect against declining interprofessional attitudes and skills among those who volunteered and were accepted.

A comparison of outcomes for uniprofessional and multiprofessional (medicine, physician assistant, occupational therapy, and pharmacy) groups in a student-run clinic found that the participation in multiprofessional groups challenges misconceptions and sensitizes students to patient experiences, health systems, advocacy, and social responsibility (Lie, Forest, Walsh, Banzali, & Lohenry, 2016).

Because each health profession specialty has different learning objectives and patient assessment methodologies, a
study at the University of Texas Medical Branch provided an opportunity for medical, nursing, occupational therapy, and physical therapy to work together in a neurology clinic in order to learn about each other’s roles in patient care delivery (Shanina, Smith, Aranha, Seale, & Rosen, 2016). In post-activity surveys, all students agreed that neurology patients benefitted from coordinated interprofessional therapy and that shared learning increased students' understanding of the clinical problems associated with neurology patients. However, student self-assessment of interprofessional communication competency was significantly lower than peer assessment, suggesting a lack of confidence or low comfort level in interprofessional communication.

Sheppard, et al. (2015) evaluated the impact of interprofessional clinical experience on attitudinal change among students in seven professions (dentistry, medicine, nursing, nutrition, occupational therapy, optometry and social work). The students participated in developing a comprehensive care plan for older adults in a nursing home setting. The post-experience assessment evaluated the trainees' perception of potential team members' roles and attitudes about interprofessional team care of the older adult. Attitudes toward interprofessional teamwork and the older adult were found to be generally positive.

The increase in distance education creates new challenges for interprofessional education. Faculty teams from the University of Arizona’s colleges in medicine, nursing, pharmacy, and public health joined with allied health college at other Arizona universities to examine the use of interprofessional team training in a virtual classroom (Weinstein, et al., 2010). The resulting T-Health Amphitheater was one of the first to utilize telecommunications for interprofessional education, but many other schools have continued to examine the use of various electronic media, including social media, for interprofessional education (Costello, Corcoran, Barnett, Birkmeier, & Cohn, 2014; Mckay, Sanko, Shekhter, & Birnbach, 2014).

In response to the complexity of implementing interprofessional education and practice, the University of Virginia established a center that included the schools of nursing and medicine and the university’s health system (Brashers, Owen, & Haizlip, 2015). The lessons learned from that experience is described in one of a series of interprofessional education and practice guides published in the Journal of Interprofessional Care and that are available for use by other institutions. The guides cover topics such as faculty development, evaluation, and program development, implementation, and sustainment.

**Evaluation**

According to Thistlethwaite, Kumar, Moran, Sanders, and Carr (2015), evaluation of interprofessional education has primarily focused on outcomes related to improved collaboration and quality of care. They found that evaluations tended to rely on students’ self-rated perceptions through surveys, focus groups, and interviews. This holds true for many of the

Buff, et al. (2015) developed a post-test experimental design to determine how the activity affected student appreciation and knowledge of their own and other professions, their interaction with other professional students, and student teamwork skills. As part of the evaluation by Thompson, et al. (2016), researchers used healthcare professionals circles diagrams (HPCDs), a unique tool that indicated student conceptualization of a healthcare team caring for a complex patient. Kent, et al. (2014) used a mixed-methods approach to evaluate both the effects of experience at a geriatric clinic on both the students and educators, followed by focus groups designed to evaluate learning outcomes. Sheppard, et al. (2015) used both the UCLA Geriatric Attitudes Scale and a post-experience assessment to evaluate the impact of interprofessional clinical experience on attitudinal change.

**Triple and Quadruple Aim**

The suggestion by Thistlethwaite, et al. (2015) that evaluation should be expanded from just studying interprofessional education into the study of interprofessional practice is supported by Bodenheimer and Sinsky’s (2014) suggestion that the Triple Aim—enhancing patient experience, improving population health, and reducing costs—should be expanded into a Quadruple Aim by adding the goal of improving the work life of health care providers in order to reduce widespread burnout and dissatisfaction among physicians and other members of the health care workforce. This expansion towards the Quadruple Aim is repeated by Sikka, Morath, and Leape (2015), who argue that the safety of patients is threatened by burnout among members of all health professions, a burnout that is exacerbated by the lack of teamwork, disrespect among colleagues, and lack of workforce engagement.


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Appendix A

UTMB – The setting for IPE²Practice

Established in 1891 as the University of Texas Medical Department, the University of Texas Medical Branch (UTMB) has grown from one building, 23 students and 13 faculty members to one of the nation’s leading university health sciences centers. Today, UTMB numbers approximately 3,000 students, more than 500 residents and 12,000 employees (including 1,000 faculty).

UTMB’s 84-acre Galveston campus is home to four health sciences schools (Medicine, Nursing, Health Professions, and Graduate Biomedical Sciences), three institutes for advanced study, a major medical library, and one of only two national laboratories dedicated to the safe study of infectious threats to human health. There are more than 25,000 living UTMB alumni, with 4,500 graduates practicing medicine in Texas, the highest number from any of the state’s medical schools.

UTMB is a component of the University of Texas System and, as the state’s first academic health center, has been defining health care in Texas for generations by providing a diverse and highly-skilled health professions work force, advancing the understanding and treatment of illness and injury, and serving as a leading source of medical care for patients from throughout the state.

UTMB lies on Texas’ Gulf Coast and its operations have been tested a number of times. The response philosophy was forged after the devastating 1900 Storm when a University of Texas Board of Regents wrote these words, “The University of Texas stops for no storm.” The words were echoed again UTMB’s several times as the UTMB community has been faced with challenges.

On September 13, 2008 UTMB suffered a direct hit from Hurricane Ike leaving one million square feet of business space flooding and resulting in 41 million dollars in damages. The storm proved to be no match for the dedication and resolve of our faculty, staff, students, alumni and supporters in the Houston/Galveston region and beyond. Most recently, Hurricane Harvey, which made landfall in Southeast Texas on August 25, 2017, left a path of destruction throughout our coastal region. Resilience, innovation, collaboration and excellence have defined our campus community. If there is a silver lining to these storms, it is the countless ways in which the storms underscored the importance of UTMB’s many contributions to the health and well-being of the region and Texas as a whole.

UTMB enjoys a unique position among the health science centers in the state of Texas in that it operates its academic, research and patient care programs under a single integrated leadership team. The hallmarks of this administrative model are interdisciplinary teamwork, a culture of professionalism, a bold vision for the future and fiscal transparency. The institution is also a proud member of the Texas Medical Center, collaborating with other great Houston-area medical institutions.
The School of Medicine – Danny O. Jacobs, M.D., M.P.H., FACS, Executive Vice President and Provost, Dean of the School of Medicine

UTMB has been educating physicians since 1892. Today, the School of Medicine (SOM) enrolls 230 students each year. Students are awarded a Doctor of Medicine degree upon completion of a four-year integrated medical curriculum that includes small group problem-based learning, laboratory/basic skill application, clinical rotations, practice of medicine courses, and clinical skills. To enhance clinical skills training, the SOM has a Standardized Patient Center and a Dedicated Clinical Assessment Center providing hands-on experience and expert guidance.

The SOM has 24 specialties in its residency program and 33 subspecialties in its fellowship programs. Scholarly Concentration Tracks provide interested students with opportunities to receive expanded learning experiences in non-specialty-based areas of emphasis while completing the four-year Integrated Medical Curriculum. These tracks include:

<table>
<thead>
<tr>
<th>Aerospace Medicine</th>
<th>Physician Healer</th>
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<tbody>
<tr>
<td>Bilingual Health</td>
<td>Public Health</td>
</tr>
<tr>
<td>Geriatric Health</td>
<td>Rural Health Care</td>
</tr>
<tr>
<td>Global Health</td>
<td>Translational Research</td>
</tr>
<tr>
<td>Medical Humanities</td>
<td></td>
</tr>
</tbody>
</table>

The School of Nursing - Deborah Jones, RN, MSN, PhD, Senior Vice President and Dean, School of Nursing

The University Of Texas Medical Branch School Of Nursing (SON), established in 1890, is the oldest nursing school west of the Mississippi River in continuous existence. Known at the time as the John Sealy Hospital Training for Nurses, the institution graduated six nurses in its inaugural class of 189, all of whom were hired by the hospital at a salary of $3.50 per month.

In 1896, UTMB became the first nursing school in the United States that affiliated with a university when it became part of The University of Texas. In 1952, the SON established the first Master of Science in Nursing program in Texas. An RN to BSN program in addition to a distance education program was established in the 1980’s. The nursing PhD and the first Texas online graduate level nursing program were established in 1997 and 1998 respectively. The Nursing Interprofessional Simulation Center and Smart Hospital opened in 2011, followed by the establishment of the Doctor of Nursing Practice (DNP) program in 2012.

The SON celebrated its 125th anniversary in 2015 and now includes the following programs:
• Bachelor of Science in Nursing (BSN)
  ◦ Pre-licensure (traditional) BSN
  ◦ RN to BSN – This program is for licensed registered nurses seeking a BSN degree
  ◦ Honors – Applicants chosen for this program focus on policy issues as they relate to the underserved population in Texas

• Masters of Science in Nursing (MSN) – The MSN program consists of seven tracks: Family Nurse Practitioner (FNP), Adult Gerontology Acute Care Nurse Practitioner (AGACNP), Adult Gerontology Primary Care Nurse Practitioner (AGPCNP), Neonatal Nurse Practitioner (NNP), Clinical Nurse Leader (CNL), Executive Nurse Leader (ENL) and Nurse Educator (NE).

• Doctor of Nursing Practice (DNP) - This programs helps prepare candidates with skills in clinical competencies, science, leadership, and inquiry.

• Doctor of Philosophy (PhD) - The BSN to PhD and the MSN to PhD programs prepare students to become researchers, educators, and administrators in nursing.

As it relates to interprofessional education, the SON includes the goal of graduating nurses who will "demonstrate the ability to collaborate in interprofessional healthcare team to create a therapeutic and safe environment that results in high-quality patient outcomes". The SON’s strategic goals include advancing interprofessional education and collaborating with the School of Medicine, Graduate School of Biomedical Sciences and School of Health Professions to develop and implement interprofessional learning opportunities and implement into curricula of the four schools.

The Graduate School of Biomedical Sciences - David Niesel, PhD, Dean, Senior Vice President and Chief Research Officer

The Graduate School of Biomedical Sciences (GSBS) at UTMB advances human understanding and knowledge in health-related disciplines through scholarly teaching and research in the biomedical sciences, promoting excellence in academic pursuits and activities, and developing individual leadership, communication, motivation, and scholarship in all students. This mission had its early beginnings in 1920 when a professor of biological chemistry asked the president of the University of Texas to form a committee to develop graduate courses at UTMB for a master’s degree program. Graduate students would serve as research and teaching assistants to the faculty, thereby easing the teaching burden and increasing research productivity. The University of Texas regents authorized the UTMB departments of biochemistry, bacteriology, preventive medicine, and physiology to supervise the work of students who could earn master’s degrees. Research degree programs resulted in steady increase in the number of preclinical faculty with PhD degrees and in the provision of laboratory facilities and equipment for experimental studies.

Today GSBS boasts an enrollment of over 325 students and offers the following programs:

• Biochemistry & Molecular Biology MS, PhD
GSBS has received over $128 million in grants and contracts and was ranked 51st in NIH funding in 2016. To respond to the demand for more broadly-trained biomedical scientists, the GSBS is working towards an integrated approach to scientific education.

The School of Health Professions – Vicki Freeman, PhD, Interim Dean, School of Health Professions, Professor, School of Health Professions, Chair, Clinical Laboratory Sciences
Secondary – Department of Pathology

The mission of the School of Health Professions (SHP) is to provide and promote quality education, research, and service in an environment that fosters collaboration and mutual respect with an emphasis on interprofessional education. As a result, the curricula emphasize the creation of a diverse work force of health professionals who can work as a team to better lives of their patients and their communities.

Since 1968 the School of Health Professions has granted degrees and certificates to more than 11,000 graduates in six health professions departments with over 30 degree programs.

Included in the School of Health Professions are:

- Clinical Laboratory Sciences
- Nutrition and Metabolism
- Occupational Therapy
- Physical Therapy
Appendices

- Respiratory Care
- Physician Assistant Studies
Appendix B
QEP Topic Survey

The Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) requires member institutions to develop a Quality Enhancement Plan (QEP) that focuses on learning outcomes and/or the environment supporting student learning.

For our last re-affirmation, we created synergy which focused on inter-professional education. This initiative lasted five years and was recently accepted by the SACSCOC as a completed QEP.

It is now time to develop a new QEP. To that end we would like to ask you for your input, ideas and proposals.

Please take a few minutes and respond.

For questions or other issues, please contact John C. McKee, PhD, at jmckee@utmb.edu or 409-747-9983.

Thank you!

1. What area, process or concept, related to student learning or the environment supporting learning, do you see as a candidate for a new QEP?

2. Would students across the institution be broadly exposed to this process, area or concept?

3. Describe briefly how this process, area or concept could be enhanced and what metrics could be developed to measure improvement?

4. Are you aware of any educational literature that would support, clarify or otherwise illustrate your idea?

5. Please let us know who you are so we may follow up.

Name:

School:

Email Address:

Phone Number:
Appendix C
Accreditation Standards

The table below includes interprofessional standards of national accrediting bodies.

<table>
<thead>
<tr>
<th>School /Department</th>
<th>Accrediting Board</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>School of Medicine</td>
<td>Liaison Committee on Medical Education (LCME)</td>
<td>7.9: The core curriculum of a medical education program must prepare medical students to function collaboratively on health care teams that include other health professionals. Members of the health care teams from other health professions may be either students or practitioners.</td>
</tr>
<tr>
<td>Physical Therapy</td>
<td>Commission on Accreditation in Physical Therapy Education (CAPTE)</td>
<td>6F: The didactic and clinical curriculum includes interprofessional education learning; learning activities are directed toward the development of interprofessional competencies including, but not limited to values/ethics, communication, professional roles and responsibilities, and teamwork. NOTE: This element will be effective Jan. 1, 2018.</td>
</tr>
<tr>
<td>Occupational Therapy</td>
<td>Accreditation Council for Occupational Therapy Education (ACOTA)</td>
<td>B.5.21 Effectively communicate and work interprofessionally with those who provide services to individuals, organizations, and/or populations to clarify each member’s responsibility.</td>
</tr>
<tr>
<td>Respiratory Care</td>
<td>Commission on Accreditation (CoARC)</td>
<td>4.05 Graduates must be able to function within interprofessional teams. Evidence of compliance: Evaluations that document the student’s ability to communicate effectively in a variety of patient care settings and to interact well with other members of the health care team.</td>
</tr>
<tr>
<td>Physician Assistant</td>
<td>Accreditation Review Commission on Education for Physician Assistant, Inc. (ARC-PA)</td>
<td>B1.08 The curriculum must include instruction to prepare students to work collaboratively in interprofessional patient-centered teams.</td>
</tr>
<tr>
<td>School /Department</td>
<td>Accrediting Board</td>
<td>Standard</td>
</tr>
</tbody>
</table>
|--------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
| School of Nursing        | CCNE              | The Essentials of Baccalaureate Education for Professional Nursing Practice  
• Standard VI: Interprofessional Communication and Collaboration for Improving Patient Care Outcomes  
  – The baccalaureate program prepares the graduate to:  
    Compare and contrast roles  
    Use interprofessional communication and collaboration to provide evidence-based care  
    Use effective communication including negotiation and conflict resolution  
    Demonstrate teambuilding and collaborative strategies  
The Essentials of Master’s Education for Advanced Practice Nursing (AACN, 1996; revised in 2011)  
• Standard VII: Interprofessional Collaboration for Improving Patient and Population Health Outcomes  
  – The master’s degree program prepares the graduate to:  
    Understand other health profession’s scopes of practice and maximize contributions within the health care team  
    Employ collaborative strategies in the design, coordination, and evaluation of patient-centered care.  
    Use effective communication strategies to develop, participate, and lead interprofessional teams and partnerships  
    Functions as effective group leader  
The Essentials of Doctoral Education for Advanced Nursing Practice (AACN, 2006)  
• Standard VII: Interprofessional Collaboration for Improving Patient and Population Health Outcomes  
  – The DNP program prepares the graduate to:  
    Employ effective communication and collaborative skills in the development and implementation of care models, peer review, practice guidelines, health policy, standards of care, and/or other scholarly products.  
    Lead professional teams in the analysis of complex practice and organizational issues.  
    Employ consultative and leadership skills with intra professional and interprofessional teams to create change in health care and complex healthcare delivery systems.  |
Appendix D
Copy of Online Interprofessional Activity Registration Form

Register an Interprofessional Activity

Section 1: Criteria

1. Title of IPEP Learning Activity
2. Criteria met by this IPEP Learning Activity
   ◊ Involvement of two or more professions.
   ◊ Opportunities to learn about, from, and with one another.
   ◊ Significant interactivity between participants.
   ◊ Teaching and learning about interprofessional practice and education is intentionally integrated into the activity. Interprofessional practice and education constructs are targeted with IPEP learning objectives.

   All criteria must be met to register the IPEP learning activity. By checking the box, you confirm each criteria will be implemented in the IPEP learning activity. If further assistance to meet these four criteria, staff of the Office of IPEP can provide guidance in the development of the activity.

3. Type of Learning Activity (Check all that apply)
   ◊ Case-based or problem-based learning
   ◊ Clinical observation learning
   ◊ Collaborative research project
   ◊ Competition or contest
   ◊ Interprofessional journal club
   ◊ Pilot program or project
   ◊ Service learning/community engagement
   ◊ Simulation
   ◊ Controversy discussions and/or mock debates learning
   ◊ Team-building event
   ◊ Didactic learning
TeamSTEPPS® training within an interprofessional environment
◊ Experiential and/or clinical learning
◊ Workshop, interactive demo, or small group activity
◊ International/global health experience
◊ Other type of learning activity

4. Location of Activity

Section 2: Participation

5. Average Number of Participants in Learning Activity

6. Target Audience (check all that apply)
◊ Graduate School of Biomedical Science
◊ School of Nursing
◊ School of Medicine
◊ School of Health Professions
List specific class or sub group:

7. Learners/professions from outside UTMB.
Please list.

Section 3: Learning Objectives – Please indicate the IPEP learning objectives for the activity. The activity must contain at least one of the learning objectives. Check all that apply.

Values and Ethics for Interprofessional Practice
◊ Place interest of patients and populations at the center of interprofessional healthcare delivery.
◊ Respect the dignity and privacy of patients while maintaining confidentially in the delivery of team-based care.
◊ Embrace the cultural diversity and individual differences that characterize patients, populations, and the health team.
◊ Respect the unique cultures, values, roles/responsibilities, and expertise of other health professions and the impact these factors can have on health outcomes.
◊ Work in cooperation with those who receive care, those who provide care, and others who contribute to or support the delivery of prevention and health services and programs.
◊ Develop a trusting relationship with patients, families, and other team members.
◊ Demonstrate high standards of ethical conduct and quality of care in contributions to team-based care.
◊ Manage ethical dilemmas specific to interprofessional patient/population centered care situations.
◊ Act with honesty and integrity in relationships with patients, families, communities and other team members.
◊ Maintain competence in one’s own profession appropriate to scope of practice.

Roles and Responsibilities

◊ Communicate one’s roles and responsibilities clearly to patients, families, community members, and other professionals.
◊ Recognize one’s limitations in skills, knowledge, and abilities.
◊ Engage diverse professionals who complement one’s own professional expertise, as well as associated resources, to develop strategies to meet specific health and healthcare needs of patients and populations
◊ Explain the roles and responsibilities of other providers and how the team works together to provide care, promote health, and prevent disease.
◊ Use the full scope of knowledge, skills, and abilities of professionals from health and other fields to provide care that is safe, timely, efficient, effective, and equitable.
◊ Communicate with team members to clarify each member’s responsibility in executing components of a treatment plan or public health intervention.
◊ Forge interdependent relationships with other professions within and outside of the health system to improve care and advance learning.
◊ Engage in continuous professional and interprofessional development to enhance team performance and collaboration.
◊ Use unique and complementary abilities of all members of the team to optimize health and patient care.
◊ Describe how professionals in health and other fields can collaborate and integrate clinical care and public health interventions to optimize population health.

Interprofessional Communication

◊ Choose effective communication tools and techniques, including information systems and communication technologies, to facilitate discussions and interactions that enhance team function.
◊ Communicate information with patients, families, community members, and health team members in a form that is understandable, avoiding discipline-specific terminology when possible.
◊ Express one’s knowledge and opinions to team members involved in patient care and population health
improvement with confidence, clarity, and respect, working to ensure common understanding of information, treatment, care decisions, and population health programs and policies.

◊ Listen actively, and encourage ideas and opinions of other team members.
◊ Give timely, sensitive, instructive feedback to others about their performance on the team, responding respectfully as a team member to feedback from others.
◊ Use respectful language appropriate for a given difficult situation, crucial conversation, or conflict.
◊ Recognize how one’s uniqueness (experience level, expertise, culture, power, and hierarchy within the health team) contributes to effective communication, conflict resolution, and positive interprofessional working relationships.
◊ Communicate the importance of teamwork in patient-centered care and population health programs and policies.

**Teams and Teamwork**

◊ Describe the process of team development and the roles and practices of effective teams.
◊ Develop consensus on the ethical principles to guide all aspects of team work.
◊ Engage health and other professionals in shared patient-centered and population focused problem-solving.
◊ Integrate the knowledge and experience of health and other professions to inform health and care decisions, while respecting patient and community values and priorities/preferences for care.
◊ Apply leadership practices that support collaborative practice and team effectiveness. TT6. Engage self and others to constructively manage disagreements about values, roles, goals, and actions that arise among health and other professionals and with patients, families, and community members.
◊ Share accountability with other professions, patients, and communities for outcomes relevant to prevention and health care.
◊ Reflect on individual and team performance for individual, as well as team, performance improvement.
◊ Use process improvement to increase effectiveness of interprofessional teamwork and team-based services, programs, and policies.
◊ Use available evidence to inform effective teamwork and team-based practices.
◊ Perform effectively on teams and in different team roles in a variety of settings

**Section 4: Type of Assessment Administered** (Check all that apply) Please indicate if learners will complete an assessment associated with the learning activity. Check all that apply. Include supporting details or documents when applicable.

◊ Attitudinal Survey
◊ Formative
◊ Summative
◊ Knowledge Pre and Post
Self-efficacy or confidence scaling
Skills assessment
Self-reflection
None

Other type of assessment:

Formal Assessment Protocol used, if Applicable

500 word(s) left

Type of Program Evaluation Administered (Check all that apply)

Please indicate how learners will receive feedback related to their participation in the learning activity. Include supporting details or documents when applicable.

- Activity feedback/evaluation – from faculty and/or preceptors
- Activity feedback/evaluation 0 from other learners
- Facilitated debrief
- Focus Group
- Follow-up Survey
- Planning Committee Feedback
- Pre- and Post-Test
- None

Other Type of Program Evaluation

Section 5: Program Contact

Provide details on the potential Sustainability of the Learning Activity
Roles of Faculty/Staff in Learning Activity (e.g., Planning Committee, Facilitators, Instructors, Mentors, etc.)

Learning Activity Organizer (Check all that apply)

- Office of Interprofessional Education
- School of Nursing
- Graduate School of Biomedical Sciences
- School of Health Professions
- Office of Diversity
- School of Medicine
- Simulation Center
- Office of Global Health
Appendix E
IPEC Core Competencies for Interprofessional Collaborative Practice

Work with individuals of other professions to maintain a climate of mutual respect and shared values. (Values/Ethics for Interprofessional Practice)

Values/Ethics Sub-competencies:

VE1. Place interests of patients and populations at center of interprofessional health care delivery and population health programs and policies, with the goal of promoting health and health equity across the life span.

VE2. Respect the dignity and privacy of patients while maintaining confidentiality in the delivery of team-based care.

VE3. Embrace the cultural diversity and individual differences that characterize patients, populations, and the health team.

VE4 Respect the unique cultures, values, roles/responsibilities, and expertise of other health professions and the impact these factors can have on health outcomes.

VE5 Work in cooperation with those who receive care, those who provide care, and others who contribute to or support the delivery of prevention and health services and programs.

VE6 Develop a trusting relationship with patients, families, and other team members (CIHC,2010).

VE7. Demonstrate high standards of ethical conduct and quality of care in contributions to team-based care.

VE8 Manage ethical dilemmas specific to interprofessional patient/population centered care situations.

VE9. Act with honesty and integrity in relationships with patients, families, communities, and other team members.

VE10. Maintain competence in one’s own profession appropriate to scope of practice.

Use the knowledge of one’s own role and those of other professions to appropriately assess and address the health care needs of patients and to promote and advance the health of populations. (Roles/Responsibilities)

Roles/Responsibilities Sub-competencies:

RR1. Communicate one’s roles and responsibilities clearly to patients, families, community members, and other professionals.

RR2. Recognize one’s limitations in skills, knowledge, and abilities.

RR3. Engage diverse professionals who complement one’s own professional expertise, as well as associated resources, to develop strategies to meet specific health and healthcare needs of patients and populations.

RR4. Explain the roles and responsibilities of other providers and how the team works together to provide care, promote health, and prevent disease.
RR5. Use the full scope of knowledge, skills, and abilities of professionals from health and other fields to provide care that is safe, timely, efficient, effective, and equitable.

RR6. Communicate with team members to clarify each member’s responsibility in executing components of a treatment plan or public health intervention.

RR7. Forge interdependent relationships with other professions within and outside of the health system to improve care and advance learning.

RR8. Engage in continuous professional and interprofessional development to enhance team performance and collaboration.

RR9. Use unique and complementary abilities of all members of the team to optimize health and patient care.

RR10. Describe how professionals in health and other fields can collaborate and integrate clinical care and public health interventions to optimize population health.

Communicate with patients, families, communities, and professionals in health and other fields in a responsive and responsible manner that supports a team approach to the promotion and maintenance of health and the prevention and treatment of disease. *(Interprofessional Communication)*

Interprofessional Communication Sub-competencies:

CC1. Choose effective communication tools and techniques, including information systems and communication technologies, to facilitate discussions and interactions that enhance team function.

CC2. Communicate information with patients, families, community members, and health team members in a form that is understandable, avoiding discipline-specific terminology when possible.

CC3. Express one’s knowledge and opinions to team members involved in patient care and population health improvement with confidence, clarity, and respect, working to ensure common understanding of information, treatment, care decisions, and population health programs and policies.

CC4. Listen actively, and encourage ideas and opinions of other team members.

CC5. Give timely, sensitive, instructive feedback to others about their performance on the team, responding respectfully as a team member to feedback from others.

CC6. Use respectful language appropriate for a given difficult situation, crucial conversation, or conflict.

CC7. Recognize how one’s uniqueness (experience level, expertise, culture, power, and hierarchy within the health team) contributes to effective communication, conflict resolution, and positive interprofessional working relationships (University of Toronto, 2008).

CC8. Communicate the importance of teamwork in patient-centered care and population health programs and policies.

Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to
plan, deliver, and evaluate patient/population centered care and population health programs and policies that are safe, timely, efficient, effective, and equitable. (Teams and Teamwork)

Team and Teamwork Sub-competencies:

TT1. Describe the process of team development and the roles and practices of effective teams.

TT2. Develop consensus on the ethical principles to guide all aspects of team work.

TT3. Engage health and other professionals in shared patient-centered and population focused problem-solving.

TT4. Integrate the knowledge and experience of health and other professions to inform health and care decisions, while respecting patient and community values and priorities/preferences for care.

TT5. Apply leadership practices that support collaborative practice and team effectiveness.

TT6. Engage self and others to constructively manage disagreements about values, roles, goals, and actions that arise among health and other professionals and with patients, families, and community members.

TT7. Share accountability with other professions, patients, and communities for outcomes relevant to prevention and health care.

TT8. Reflect on individual and team performance for individual, as well as team, performance improvement.

TT9. Use process improvement to increase effectiveness of interprofessional teamwork and team-based services, programs, and policies.

TT10. Use available evidence to inform effective teamwork and team-based practices.

TT11. Perform effectively on teams and in different team roles in a variety of settings.

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Appendix F

Interprofessional Facilitation Scale (IPFS)

Interprofessional Facilitation Scale (IPFS)

The following items reflect some of the facilitation behaviors which has been shown to promote interprofessional and team learning. Please rate your ability at this time to do the following:

1. Describe why interprofessional education is important.
   - Poor
   - Fair
   - Good
   - Excellent

2. Explain how interprofessional collaboration can enhance patient-centered practice.
   - Poor
   - Fair
   - Good
   - Excellent

3. Role-model positive interactions with other health professionals and how professionals can work together, for example, by working collaboratively with the co-facilitator.
   - Poor
   - Fair
   - Good
   - Excellent

4. Create a learning environment in which the principles of interprofessional education were demonstrated or clearly explained (e.g., did not focus on 1 provider group; acknowledged all professionals’ contributions; acknowledged, respected, celebrated diversity in group).
   - Poor
   - Fair
   - Good
   - Excellent

5. Openly encourage participants to learn from other health providers’ views, opinions, and experiences (e.g., asked questions that generated free exchange of ideas, openness, and sharing among all professions).
   - Poor
   - Fair
   - Good
   - Excellent

6. Use learning and facilitation methods that encouraged participants from different professions to learn with, from, and about each other (e.g., icebreaker games, case studies, group discussions).
   - Poor
   - Fair
   - Good
   - Excellent

7. Invite other professions to comment and share their experiences/perspectives as questions or comments that were made in the large group.
   - Poor
   - Fair
   - Good
   - Excellent

8. Use appropriate facilitator skills to keep discussion topics on track.
   - Poor
   - Fair
   - Good
   - Excellent

9. Acknowledge and respect others’ experiences and perceptions.
   - Poor
   - Fair
   - Good
   - Excellent

10. Encourage members of all professions to contribute to decisions and seek opinions from others in the group during case or patient discussions and decision-making activities.
    - Poor
    - Fair
    - Good
    - Excellent
11. Ask participants to share their professional opinions, perspectives, and values relative to patient care and collaborative practice.

<table>
<thead>
<tr>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
</table>

12. Identify professional differences in a positive manner as participants offered their professional experiences and perceptions.

<table>
<thead>
<tr>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
</table>

13. Ask health professionals to indicate their profession and discuss each other's roles and responsibilities in the delivery of patient care.

<table>
<thead>
<tr>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
</table>

14. Listen to and acknowledged participants' ideas without judgment or criticism.

<table>
<thead>
<tr>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
</table>

15. Ask questions to encourage participants to consider how they might use each other's professional skills, knowledge, and experiences.

<table>
<thead>
<tr>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
</table>

16. Help participants work through differences in a spirit of openness and collaboration when differing opinions (e.g., led the discussion and ensured that all participants has an opportunity to express their views openly).

<table>
<thead>
<tr>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
</table>

17. Use effective communication skills to clarify and resolve misunderstanding and conflict, if

<table>
<thead>
<tr>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
</table>

18. Discuss issues related to hidden power structures, hierarchies, and stereotypes that may exist among different health professionals.

<table>
<thead>
<tr>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
</table>

Appendix G
Readiness for Interprofessional Learning Scale (RIPLS)

Readiness for Interprofessional Learning Scale (RIPLS)
A. K. McFadyen et al. (2005)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Learning with other students will help me become a more effective member of a health care team</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Patients would ultimately benefit if health-care students worked together to solve patient problems</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Shared learning with other health-care students will increase my ability to understand clinical problems</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Learning with health-care students before qualification would improve relationships after qualification</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Communication skills should be learned with other health-care students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Shared learning will help me to think positively about other professionals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. For small group learning to work, students need to trust and respect each other</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. Team-working skills are essential for all health-care students to learn</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Shared learning will help me to understand my own limitations</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. I don’t want to waste my time learning with other health-care students</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>11. It is not necessary for undergraduate health-care students to learn together</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>12. Clinical problem-solving skills can only be learned with students from my own department</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. Shared learning with other health-care students will help me to communicate better with patients and other professionals</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. I would welcome the opportunity to work on small-group projects with other health-care students</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>15. Shared learning will help to clarify the nature of patient problems</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>16. Shared learning before qualification will help me become a better team worker</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>17. The function of nurses and therapists is mainly to provide support for doctors</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>18. I’m not sure what my professional role will be</td>
<td>1</td>
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<td>5</td>
</tr>
<tr>
<td>19. I have to acquire much more knowledge and skills than other health-care students</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
</tbody>
</table>

A. K. McFadyen et al. (2005)
Appendix H
IPEC Competency Self-Assessment Tool

IPEC Competency Self-Assessment Tool
VERSION 3 (July 2015)

INSTRUCTIONS: Based on your education or experience in the health care environment, select/circle the number that corresponds with your level of agreement or disagreement on each item.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am able to choose communication tools and techniques that facilitate effective team interactions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. I am able to place the interests of patients at the center of interprofessional health care delivery</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I am able to engage other health professionals in shared problem-solving appropriate to the specific care situation.</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. I am able to respect the privacy of patients while maintaining confidentiality in the delivery of team-based care.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I am able to inform care decisions by integrating the knowledge and experience of other professions appropriate to the clinical situation.</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>6. I am able to embrace the diversity that characterizes the health care team.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. I am able to apply leadership practices that support effective collaborative practice.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. I am able to respect the cultures and values of other health professions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. I am able to engage other health professionals to constructively manage disagreements about patient care.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. I am able to develop a trusting relationship with other team members.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. I am able to use strategies that improve the effectiveness of interprofessional teamwork and team-based care.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. I am able to demonstrate high standards of ethical conduct in my contributions to team-based care.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. I am able to use available evidence to inform effective teamwork and team-based practices.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. I am able to act with honesty and integrity in relationships with other team members.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. I am able to understand the responsibilities and expertise of other health professions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. I am able to maintain competence in my own profession appropriate to my level of training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

For more information, contact Kelly Lockman, PhD, Virginia Commonwealth University (klockman@vcu.edu).
Appendices

Appendix I
Interprofessional Reflection Guide

<table>
<thead>
<tr>
<th>Levels of Reflection</th>
<th>Questions that Guide Reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe the event</td>
<td>What happened?</td>
</tr>
<tr>
<td></td>
<td>What was your professional and team role in the event?</td>
</tr>
<tr>
<td>Personal/Team</td>
<td>What was your emotional response to the event? Other team members?</td>
</tr>
<tr>
<td></td>
<td>How does the event relate to your personal ethics or values? Other team members?</td>
</tr>
<tr>
<td></td>
<td>What expectations/assumptions did you/your team have? Were they confirmed or challenged?</td>
</tr>
<tr>
<td></td>
<td>What were your personal or professional strengths and/or limitations in relation to the event? Other team members?</td>
</tr>
<tr>
<td></td>
<td>What other factors may have affected the event?</td>
</tr>
<tr>
<td>Context</td>
<td>How does your interpretation align with external sources such as:</td>
</tr>
<tr>
<td></td>
<td>• Feedback from patients, community members, facilitator, team members, mentor, or peers?</td>
</tr>
<tr>
<td></td>
<td>• Core Competencies</td>
</tr>
<tr>
<td></td>
<td>• Your profession’s standards of practice or code of ethics?</td>
</tr>
<tr>
<td></td>
<td>• What organizational, historical, or sociological implications does the event have?</td>
</tr>
<tr>
<td>Practice Implications</td>
<td>What implications does the event have for your future practice?</td>
</tr>
<tr>
<td></td>
<td>What knowledge or expertise is needed to support your future practice?</td>
</tr>
<tr>
<td></td>
<td>How will you acquire that knowledge?</td>
</tr>
<tr>
<td></td>
<td>How will you approach a similar event in the future?</td>
</tr>
<tr>
<td></td>
<td>Are there any factors from this experience that remain uncertain or unclear? How</td>
</tr>
</tbody>
</table>

## Appendix J
### Reflection Rubric

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Reflective Practitioner</th>
<th>Aware Practitioner</th>
<th>Reflective Novice</th>
<th>Unacceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth of Reflection</td>
<td>Reflection demonstrates an in-depth personalization of the event. It was meaningful to the student with viewpoints and interpretations that are well-supported with evidence from the event.</td>
<td>Reflection demonstrates general personalization of the event. It was meaningful to the student with viewpoints and interpretations that are well-supported with evidence from the event.</td>
<td>Reflection demonstrates minimal personalization of the event. Student attempts to demonstrate meaning but it is unclear. Viewpoints are unsupported or supported with flawed arguments.</td>
<td>Reflection demonstrates a lack of personalization. Viewpoints are missing, inappropriate, and/or unsupported.</td>
</tr>
<tr>
<td>Structure/Clarity</td>
<td>Writing is clear, concise, and well organized. There are no more than three spelling, grammar, or syntax errors.</td>
<td>Writing is mostly clear, concise, and well organized. There are no more than five spelling, grammar, or syntax errors.</td>
<td>Writing is unclear and disorganized. There are more than five spelling, grammar, or syntax errors.</td>
<td>Writing is unclear and rambles. There are numerous spelling, grammar, or syntax errors.</td>
</tr>
<tr>
<td>Analysis</td>
<td>Reflection moves beyond description of event and to an analysis of how the event contributed to self-understanding, teamwork, and future application of the concepts learned from the experience.</td>
<td>Reflection demonstrates student attempts to move beyond the description, but it lacks depth.</td>
<td>Reflection demonstrates little analysis of the event. The connection between the event and the attempt is unclear.</td>
<td>Reflection does not move beyond description of event.</td>
</tr>
</tbody>
</table>
Appendix K
TeamSTEPPS®

Team Performance Observation Tool

<table>
<thead>
<tr>
<th>Date:</th>
<th>Rating Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 = Very Poor</td>
</tr>
<tr>
<td></td>
<td>2 = Poor</td>
</tr>
<tr>
<td></td>
<td>3 = Acceptable</td>
</tr>
<tr>
<td></td>
<td>4 = Good</td>
</tr>
<tr>
<td></td>
<td>5 = Excellent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit/Department</th>
<th>Team:</th>
<th>Shift:</th>
<th>Overall Rating – Team Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1. Team Structure</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Assembles a team</td>
<td></td>
</tr>
<tr>
<td>b. Assigns or identifies team members’ roles and responsibilities</td>
<td></td>
</tr>
<tr>
<td>c. Holds team members accountable</td>
<td></td>
</tr>
<tr>
<td>d. Includes patients and families as part of the team</td>
<td></td>
</tr>
<tr>
<td>Comments:</td>
<td>Overall Rating – Team Structure</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Communication</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Provides brief, clear, specific, and timely information to team members</td>
<td></td>
</tr>
<tr>
<td>b. Seeks information from all available sources</td>
<td></td>
</tr>
<tr>
<td>c. Uses check-backs to verify information that is communicated</td>
<td></td>
</tr>
<tr>
<td>d. Uses SBAR, call-outs, and handoff techniques to communicate effectively with team members</td>
<td></td>
</tr>
<tr>
<td>Comments:</td>
<td>Overall Rating – Communication</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Leadership</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Identifies team goals and vision</td>
<td></td>
</tr>
<tr>
<td>b. Uses resources efficiently to maximize team performance</td>
<td></td>
</tr>
<tr>
<td>c. Balances workload within the team</td>
<td></td>
</tr>
<tr>
<td>d. Delegates tasks or assignments, as appropriate</td>
<td></td>
</tr>
<tr>
<td>e. Conducts briefs, huddles, and debriefs</td>
<td></td>
</tr>
<tr>
<td>f. Role models teamwork behaviors</td>
<td></td>
</tr>
<tr>
<td>Comments:</td>
<td>Overall Rating – Leadership</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Situation Monitoring</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Monitors the status of the patient</td>
<td></td>
</tr>
<tr>
<td>b. Monitors fellow team members to ensure safety and prevent errors</td>
<td></td>
</tr>
<tr>
<td>c. Monitors the environment for safety and availability of resources (e.g., equipment)</td>
<td></td>
</tr>
<tr>
<td>d. Monitors progress toward the goal and identifies changes that could alter the plan of care</td>
<td></td>
</tr>
<tr>
<td>e. Fosters communication to ensure that team members have a shared mental model</td>
<td></td>
</tr>
<tr>
<td>Comments:</td>
<td>Overall Rating – Situation Monitoring</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Mutual Support</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Provides task-related support and assistance</td>
<td></td>
</tr>
<tr>
<td>b. Provides timely and constructive feedback to team members</td>
<td></td>
</tr>
<tr>
<td>c. Effectively advocates for patient safety using the Assertive Statement, Two-Challenge Rule, or CUS</td>
<td></td>
</tr>
<tr>
<td>d. Uses the Two-Challenge Rule or DESC Script to resolve conflict</td>
<td></td>
</tr>
<tr>
<td>Comments:</td>
<td>Overall Rating – Mutual Support</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TEAM PERFORMANCE RATING

TeamSTEPPS 2.0          Team Performance Observation Tool – F-21
# Appendix L
## Immersion Project Rubric

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Interprofessional Mastery</th>
<th>Interprofessional Competent</th>
<th>Interprofessional Developing</th>
<th>Interprofessional Minimal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Values/Ethics for Interprofessional Practice</strong></td>
<td>The project reveals mastery of the ability to work with individuals of other professions to maintain a climate of mutual respect and shared values.</td>
<td>The project frequently reveals the ability to work with individuals of other professions to maintain a climate of mutual respect and shared values.</td>
<td>The project occasionally reveals the ability to work with individuals of other professions to maintain a climate of mutual respect and shared values.</td>
<td>The project did not reveal the ability to work with individuals of other professions to maintain a climate of mutual respect and shared values.</td>
</tr>
<tr>
<td><strong>Roles/Responsibilities</strong></td>
<td>The project consistently reveals mastery of effectively using the knowledge of one’s own role and those of other professions to appropriately assess and address the healthcare needs of the patients and populations served or described.</td>
<td>The project frequently reveals the effective use of the knowledge of one’s own role and those of other professions to appropriately assess and address the healthcare needs of the patients and populations served or described.</td>
<td>The project occasionally reveals the effective use of the knowledge of one’s own role and those of other professions to appropriately assess and address the healthcare needs of the patients and populations served or described.</td>
<td>The project did not reveal the effective use of the knowledge of one’s own role and those of other professions to appropriately assess and address the healthcare needs of the patients and populations served or described.</td>
</tr>
<tr>
<td><strong>Interprofessional Communication</strong></td>
<td>The project demonstrates the consistent use of communication with other health professionals in a responsive and responsible manner that supports a team approach.</td>
<td>The project frequently demonstrates the use of communication with other health professionals in a responsive and responsible manner that supports a team approach.</td>
<td>The project occasionally demonstrates the use of communication with other health professionals in a responsive and responsible manner that supports a team approach.</td>
<td>The project did not demonstrate the use of communication with other health professionals in a responsive and responsible manner that supports a team approach.</td>
</tr>
<tr>
<td><strong>Teams and Teamwork</strong></td>
<td>The project revealed the mastery of applying relationship-building values and the principles of team dynamics to perform effectively in different team roles.</td>
<td>The project frequently revealed the application of relationship-building values and the principles of team dynamics to perform effectively in different team roles.</td>
<td>The project occasionally revealed the application of relationship-building values and the principles of team dynamics to perform effectively in different team roles.</td>
<td>The project did not reveal the application of relationship-building values and the principles of team dynamics to perform effectively in different team roles.</td>
</tr>
<tr>
<td><strong>Structure and Clarity</strong></td>
<td>Writing and presentation are clear, concise, and well-organized. Professional citations and references are included and follow APA format.</td>
<td>Writing and presentation are mostly clear, concise, and well-organized. Professional citations and references are included and follow APA format.</td>
<td>Writing and presentation are unclear and disorganized. References are included by not correctly formatted.</td>
<td>Writing and presentation are unclear and rambles. There are no professional references.</td>
</tr>
</tbody>
</table>