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Four Themes to Enhanced Interprofessional Education Integration: Lessons Learned from Early Implementation and Curricular Redesign

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ABSTRACT
With the release of the Accreditation Council for Pharmacy Education (ACPE) Standards 2016, interprofessional education (IPE) has become more formalized and needs to be embedded into the curricula of colleges and schools of pharmacy. While IPE is not new to the practice and training of pharmacists, the call for IPE has become more robust over the last several years creating challenges to widespread implementation. The purpose of this Case Study Report is to describe a twelve-year progression of IPE implementation at a college of pharmacy without an academic medical center. Focused strategies for the development, integration, and expansion of IPE are provided through the context of four themes: working through program differences; collaborators and effective collaboration; attention to implementation planning; and prebriefing and debriefing. Each theme is defined and reviewed using specific examples and lessons learned. Finally, in consideration of the ACPE Standards 2016, potential next steps are discussed.

KEYWORDS: Interprofessional education, simulation, curricular development, multidisciplinary, pharmacy education

INTRODUCTION
While interprofessional collaboration between pharmacists and professionals of other health care disciplines is not new, the continued focus and rapid evolution of interprofessional education (IPE) is increasingly evident, particularly through clear emphasis in the most recent Accreditation Council for Pharmacy Education (ACPE) accreditation standards (hereafter, Standards 2016).[1] Specifically defined by the World Health Organization (WHO) in 2010, IPE "occurs when two or more professionals learn about, from and with each other to enable effective collaboration and improve health outcomes."[2] Further translating the WHO definition into educational strategy, the Interprofessional Education Collaborative (IPEC) defined core competencies (hereafter, IPEC Competencies) for interprofessional collaborative practice in 2011, with foundational and collective support from medical, nursing, dental, pharmacy, and public health education professions.[3] The ACPE Standards 2016 are congruent with both the WHO definition and IPEC competencies, with specific delineation of IPE curricular necessities noted in Standard 11.[1]

Fortunately for those in pharmacy education, the increasing supply of IPE literature has undoubtedly aided implementation efforts, providing further definitions, broad suggestions for implementation, and/or summaries of commonly observed barriers to IPE.[4-6] However, less is

available regarding practical examples and strategies to implement IPE, particularly within the constructs of the Standards 2016 and IPEC Competencies. The purpose of this Case Study Report is to describe one college's endeavor to implement IPE over a period of twelve years, and to provide the reader with related suggestions for rapid development, integration, and expansion of IPE in a way that both meets the Standards 2016 and aligns with the IPEC Competencies.

DESCRIPTION OF CASE
We are a large 600 student program spanning two locations. First and second year students are located on the main campus, which is 60 minutes from third year students. Fourth year students are located throughout the state. On the main campus, there are a number of other healthcare programs; however, the small number of students in these programs makes collaboration difficult. Additionally, our program is not connected to a major health system, which also hinders direct collaboration. Faced with these obstacles, it was necessary to be resourceful and inventive.

Tables 1 and 2 on pages 7 and 8 describe the timeline of implementing IPE courses, events and activities at Ferris State University College of Pharmacy (FSU COP) from 2003 to present. Table 1 illustrates implementation of both elective and required courses into the Doctor of Pharmacy curriculum, whereas Table 2 explains co-curricular activities and events in which pharmacy students can participate.

As Table 1 shows, activities initially started with a small number of students and many have grown to encompass an entire class of 150 students. Early initiatives mainly centered on elective courses, which only included small subsets of

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students. Over time, activities have been incorporated into required courses allowing all students to participate. Likewise, as activities have moved from elective to required courses, the nature of the activities has evolved (i.e. from mock codes to home visits to standardized patient cases). As experience was gained, involvement of second year students increased. Generating IPE activities with the third year students has historically been much easier, since their campus has a College of Human Medicine, College of Health Professions, and a major medical center located nearby. Faculty with a vested interest in IPE have worked to expand activities on the main campus, initially partnering with the nursing program at FSU COP and eventually reaching out to other institutions. Finally, Table 1 shows the lack of "documented" involvement in the first and fourth years of the program. The focus with the first year students is laying the foundation (i.e. knowledge of team roles and communication skills) and preparing them for future IPE. The fourth year students are immersed in interprofessional practice (IPP) during their various Advanced Pharmacy Practice Experiences (APPE).

Table 2 shows a variety of co-curricular activities. While activities started as early as 2004, there has been a major surge in IPE in the last five years. With these activities, there has been participation amongst all of the classes.

Student Perceptions
Evolution of IPE opportunities over time has eventually led to collaborations with three state universities, which include healthcare professions in medicine, nursing, physical therapy, occupational therapy, speech, physician assist, athletic training, medical assistant, optometry, public health, registered dietician, respiratory therapy, social work, medical billing, medical coding, pharmacy technician, and therapeutic recreation. Currently, there are two required experiences for all second and third year students, which have been designed to address roles/responsibilities and teams/teamwork, respectively.

The overall student perceptions and satisfaction with the required IPE events have been positive. Participants in IPE events have been surveyed following the experiences. For the roles/responsibilities event (in 2014 and 2015, respectively), students either strongly agreed or agreed that the session was useful (93% and 95%) and that they were interested in other sessions (87% and 89%). The second-year case-based simulation event has only taken place in 2015, but the response has been positive as well. The vast majority of students either strongly agreed or agreed that the session was useful (96%) and that they were interested in other sessions (92%). Data on the third-year experience reflects similar results.

These results are similar to other reports in IPE. Reeves et al. conducted a systematic appraisal of the evidence related to IPE and described six reviews published from 2000-2008.[7] This review outlined that IPE was being conducted in a variety of programs with mixed methods and durations.[7] Additionally, the assessment concluded that a majority reported positive learner focused outcomes such as perceptions/attitudes.[7]

CASE IMPLEMENTATION THEMES
In a review article by Buring et al., the authors explored well known barriers to IPE implementation.[4] Barriers related to administrators, faculty, and students must be overcome for successful IPE.[4] Common barriers may include lack of perceived value/support, not enough resources/space/time, increased workload, personality clashes, issues with scheduling/coordinating, remoteness from other healthcare professions, and inconsistent evaluation techniques.[4] The authors propose several requirements for IPE development, which include making IPE a goal of the college, determining IPE advocates, making connections with other healthcare professions, preparing IPE education, providing faculty development and appreciation for involvement, and assessing outcomes.[4]

At FSU COP, comparable barriers to the integration of IPE were identified. These barriers required focused strategies for the development, integration, and expansion of IPE. An examination of the barriers encountered resulted in identification of four themes: working through program differences; collaborators and effective collaboration; attention to implementation planning; and prebriefing and debriefing. In the following sections, each theme is defined and reviewed using specific examples and lessons learned.

Working through Program Differences
In this analysis, environment refers to the differences amongst disciplines/institutions that must be acknowledged and addressed. In IPE, whether as a single event or part of ongoing didactics, there are many environmental factors to consider, such as clinical hours/credit requirements, scheduling, and IPE expectations. In IPE, environmental considerations should be one of the first considerations as it may lead to varying approaches to educational opportunities and patient care.

Clinical hour requirements and scheduling need to be considered. In a collaborative course involving nursing, occupational therapy (OT), and pharmacy students, the nursing students were required to achieve a specific number of clinical hours in the course, whereas the OT and pharmacy students did not have this requirement. Given the nursing student requirements, the course was modified to meet the clinical patient care hours required by the bachelor's level

nursing program. Additionally, there were instances when simulation events and patient care occurred at the same time as a required course. On one occasion, a required course had an exam at the same time as a simulation event and the students were not excused from the required course to attend the elective opportunity. Differences will trigger vital discussions. Be prepared to clarify responsibilities, logistics, and program expectations as early as possible; be open to creative scheduling to allow for more opportunities for interprofessional learning; and be willing to advocate for IPE.

Student expectations are another consideration. When students from various educational programs are assigned to work together, they bring different educational levels and exposure to teaching techniques. It is important to consider the baseline education of the students involved. Nursing students may be in a licensed practical nurse (LPN), registered nurse (RN), bachelor science in nursing (BSN), master level, or nurse practitioner (NP) program. When partnering pharmacy and nursing students, a discrepancy in the knowledge base may occur if students are not aligned at comparable levels. Additionally, some professions have simulation built into their program from the first year, while others do not. With some IPE simulation events, nursing and medical students have been more comfortable with the simulation environment, while our students seemed intimidated due to their limited exposure. It is important to understand the baseline education of each programs' students, as well as ensure each student has an adequate self-identity before attempting to have them operate in interprofessional teams.

While the environment of the disciplines/institutions is expected to vary, one unexpected factor FSU COP encountered was the environment in the classroom, which was described by Hewstone.[8] Each program has a set of rules, written or unwritten, that they adhere to. Our pharmacy students have a professional dress code, strict classroom expectations, and address their professors by their title. Classroom dynamics quickly changed in an IPE course, when other students arrived to the class not meeting expected dress code guidelines. Briefing students ahead of time may help with this.

Overall, whether planning IPE events or facilitating an IPE course, be sure to anticipate differences and set expectations prior to the event or first day of class. Proper consideration of environmental factors will allow for a more successful IPE experience.

Collaborators and Effective Collaboration
At FSU COP, collaboration is viewed as a logical pairing of healthcare professions and professionals. For example, pharmacy pairs well with medical, nursing, and physician

assistant professions. However, like-minded student learners are not always available for collaboration and clinicians may be utilized as needed to carry out IPE. Collaboration is going to be different for each discipline/institution depending on the opportunities, needs, and resources available.

At the beginning of IPE implementation, a faculty member was approached by an Advanced Cardiac Life Support simulation team to share equipment (i.e. mannequins, monitors, crash carts, etc.) and design methods for collaboration. At this early stage, it was an opportunity to work with a medical education group that we shared classroom space with and practice with other professionals. Although this was not a large scale IPE event, faculty embraced it. This collaboration then led to a relationship with faculty from another local university who had simulation equipment they were willing to share. Though started many years ago, these relationships still exist today. Being in the right place at the right time with the right people may lead to ongoing collaborations. In addition to taking advantage of available external partners, acknowledge that it's reasonable to start with small scale collaboration.

When trying to expand IPE, think about all that is needed to do so. A faculty member was working with fourth year students on an internal medicine APPE, as well as other local healthcare professional students, to perform simulated bedside rounds with standardized patients. The simulation started off small with a handful of pharmacy students, but led to a desire for greater pharmacy involvement. This ultimately developed into a collaboration with another faculty member at our institution. Third year students from our longitudinal patient course were recruited for the experience. As the IPE journey continues, think about courses that are already available and see if a small scale experience can be applied to an entire course.

As IPE expands, more resources may be needed to carry out a successful experience. Although FSU COP has firm IPE relationships in place, the sheer number of partners involved with some of the events has created barriers to collaboration. This has led to creative solutions and utilization of technology, such as Dropbox[TM] (San Francisco, CA), to share data, cases, assessment tools, and scholarship between other professions and universities. Utilize technology available to facilitate communication, as well as create and share documents needed for IPE events.

Overall, when just starting out with IPE or even trying to expand IPE, be sure to think about disciplines to work with as well as the goal for the collaboration. However, be realistic about those actually available to work with and the resources available to you. Start small, seek out resources and

relationships, work with other faculty and clinicians, and be purposeful.

Attention to Implementation Planning

At FSU COP, implementation is seen as the logistics of planning an IPE event or course, including the financial commitment, facilities available, the necessary personnel, and a clearly defined plan for assessment. Each of these elements must be planned in detail to provide a framework for the learners to achieve the desired outcomes of the experience.

The financial costs of running an event, such as standardized patients, materials, and facilities tend to be expected; however, there may be additional factors outside of the actual event itself that should be considered. In developing an IPE experience for the second year pharmacy students, FSU COP partnered with another university located fifty miles from campus. To participate, it was necessary to transport students in an efficient manner. The faculty members involved worked with the Dean to secure a university vehicle. Anticipating costs, such as transportation, will allow for advanced planning and accurate budget requests.

Additionally, it is critical to plan far in advance for some components that may become more complex with a large-scale educational initiative with many partners. For instance, if planning research with multiple universities, obtaining institutional review board approval, as well as obtaining student consent when recording an event, may take significant time to navigate.

Debriefers should be trained before the event to increase comfort with the materials and to allow for questions to be addressed. Third year pharmacy students participated in a simulated patient case focusing on roles and responsibilities with seven other health professions. Over 400 learners were divided amongst three locations utilizing 2-3 faculty debriefers at each location. Challenges arose when faculty from each discipline were not available at each location, leading to discomfort amongst some of the debriefers. Not all faculty are skilled at or comfortable with debriefing interprofessional experiences. When planning an event, it is important to determine the debriefing approach to be will be utilized. If a debriefer from each profession is not available, talking points should be developed to serve as a guide.

As part of an IPE assessment plan, student perceptions are often gathered using various validated instruments. However, there is often non consensus on the best tool to be used. For example, IPE activities in the P1 and P2 year use one assessment tool and activities in the P3 year use another one. In developing an assessment plan for IPE, it is important to gather information on the measurements being used. Consensus as to the best tool to evaluate the learners across the curriculum should be determined. Additionally, student perception data has limitations, as students often overestimate their ability to collaborate interprofessionally. Anecdotally, with P3 simulations, there is a disconnect at times between student perceptions of performance and evaluator observations. When conducting student perception surveys, retrospective pre/post surveys may minimize the over inflation of student scores allowing for a more accurate representation of student growth following an experience.[9] Additional assessment measures should be considered, such as team assessments and peer evaluations. Time should be allocated for the completion of the assessment measures within the event, as well as data collection and analysis after the event.

Overall, attention to implementation planning requires a great deal of preparation, time, and resources and should be an area of emphasis in IPE. It is important to ensure a member of your team is adept at managing the logistics involved in IPE endeavors.

Prebriefing and Debriefing

Execution is the final step, the actual occurrence of the IPE event or course. With execution, student preparation and expectations significantly impact the success of the event. As they prepare the students, faculty must consider the learner-centered objectives and desired outcomes of the activity. Preparation materials combined with pre-briefing and debriefing help to maintain the focus of the activity and provide a more rewarding learning experience.

In an initial collaboration between third year pharmacy students, medical students, and nursing students, an event was created to simulate a patient care experience utilizing standardized patients. Prior to the event, students were only instructed to work with their team to develop a patient care plan. The intention of the event was to evaluate the student's performance and gauge their overall ability to practice interprofessionally in a medically complex, "real life" scenario. During the simulation, however, the students were uncertain of the expectations, which resulted in anxiety, frustration, and a lack of focus. Subsequently, the faculty revised the overall approach to preparing the students and opted to provide all of the patient case materials in advance. Faculty also clarified the specific IPEC competency focus (i.e. teamwork) of the event. With purposeful direction and competency focus, the students felt more comfortable and prepared for the experience in subsequent years.

Purposeful pre-briefing can improve the educational yield of an IPE experience. In a collaboration between third year pharmacy, physical therapy, and physician assistant students, participants were instructed to develop a patient care plan as

a team. The teams met prior to the simulation to review a virtual case and then came together again for a patient simulation to develop their plan. During the activity, it was evident that the physical therapy and physician assistant students were very comfortable with their "role" on the team. The pharmacy students, however, performed poorly and did not engage with the patient or team unless specifically asked a question. Although pharmacy students had the background clinical knowledge regarding the patient disease, they did not have a firm self-identity as a pharmacist. Students need adequate opportunity to practice their role as a pharmacist in similar case scenarios before participating with an interdisciplinary team. Faculty can use appropriate pre-briefing as a tool to help set the tone and manage student expectations for the activity.

An IPE activity in the P3 year involved simulation with standardized patients in a mock hospital setting. The patient was admitted to the hospital for a congestive heart failure exacerbation, but the students also discovered depression as an underlying problem. As the P3 students were in the midst of their therapeutics coursework, there seemed to be a natural gravitation during debriefing to discuss clinical recommendations of heart failure and depression. Debriefers need to balance the therapeutics and the primary objective (i.e. teamwork in the IPE collaboration). Purposeful and appropriate debriefing activities can help maintain this balance. Effective debriefing requires training and practice to ensure students understand the findings of other team members and techniques for integrating all disciplines into the overall team plan.

Overall, when executing an IPE activity, faculty should prepare the students as much as possible, and utilize appropriate pre-briefing and debriefing to allow for a successful IPE learning experience.

CASE IMPACT
As we continue to construct IPE curriculum, we have begun to think of the work as a continuum and cultural change, rather than as a single isolated activity. As discussed, IPE is more than the event; it requires intentional pre-event didactic education followed by sufficient opportunities to apply these concepts and to debrief.   In addition, the student's IPE knowledge should progress and develop as the student moves through the curriculum. Evaluation of student IPE knowledge and skill set is necessary to document progress toward the desired outcomes. To some extent, the IPE process is never complete. The students are continually changing and there is no limit to the amount of learning that can occur.

Figure 1 demonstrates a general approach to IPE implementation or expansion we have utilized, which includes the following steps: inventory, assessment, implementing changes, and reassessing changes. As a starting point, we found it imperative to complete an inventory of the events that students participate in currently. These IPE events could then be assessed against specific programmatic outcomes to determine gaps and unnecessary duplication. After this assessment, it was necessary to incorporate additional IPE events, refine current offerings, or discontinue events that did not align with current outcomes. Any changes that are implemented were assessed to determine, if they met the current outcomes. We recommend that these processes be completed on a continuous basis.

Current Process and Next Steps
The time and energy required to complete and assess events of this magnitude is extensive. As a result of elements revealed during the process, it became necessary to change the FSU COP approach to IPE, which was previously unsystematic. A self-selected group of faculty organized an IPE workgroup that was tasked with the goal of organizing IPE for the college. During this process, the workgroup was very deliberate in aligning the current IPE experiences with Standards 2016.

Over time, the college has successfully implemented IPE activities for all learners at multiple points throughout the curriculum. Additional elements of an appropriate baseline for IPP (i.e., communication and teamwork skills) must also be in place and in an appropriate sequence to best support the requirements of Standard 11.

Due in large part to the release of Standards 2016, the college has chosen to undergo a comprehensive rebuild of the curriculum, including a more integrated approach to IPE throughout the curriculum. In addition, recognizing a new curriculum will not launch for several years, the team has focused on where additional pieces need to be added to the current curriculum to create a bridge until 2017.

This process has identified a great deal of the IPE curriculum lies in practice/simulation based experiences. These experiences incorporate focused IPEC competencies and provide exposure to a variety of health professions. Currently, complementary foundational knowledge is being built to support and prepare students to participant in IPE experiences. In addition, focused debriefing following IPE experiences will be constructed. Fourth year students will be focusing on Standard 11.3 IPP.

Although enhancing development of clinical knowledge is not typically the primary goal of an IPE experience, enhanced development of professional attitudes, behaviors and clinical skills may be very appropriate for the IPE setting. Assessing

attitudes, behaviors, and skills during an IPE event, however, is substantially different from the format of traditional assessment approaches, such as multiple choice-based written exams. Existing IPE assessment strategies have largely revolved around grading rubrics that were developed for each unique activity. While the rubrics appeared to be helpful per the instructors' feedback, there was little consistency among assessments of different events. Discussions over the last year concluded that many of the attitudes, behaviors, and skills assessed during IPE overlap with didactic curricular activities. For instance, oral communication is assessed during multiple didactic courses, experiential activities, and is further assessed during IPE. By tracking oral communication skills using the same rubric in various settings, the students will be able to note areas of improvement, as well as see their progress. Therefore, we plan to harmonize our assessment strategies, perhaps by uniform assessment tools, so that longitudinal assessment will be simpler and more accurate.

Also prior to the curricular rebuild, several instructors working with IPE and/or clinical skills instruction in the laboratory setting began meeting. Discussion involved key themes of assessment that exist both inside and outside of IPE events. For instance, in the first semester of the first year, current curriculum involves several group projects to help facilitate teamwork development. While there are differences in teamwork when a team is exclusively comprised of pharmacy students as opposed to an interprofessional student team, there may be value in assessing teamwork in a consistent fashion both within and outside of IPE. Therefore, the potential for using consistent assessment strategies (i.e. rubrics or assessment questions) to assess threads of attitudes, behaviors, or skills (i.e. teamwork) that may exist in both IPE and non-IPE activities is being discussed. Finally, in an effort to harmonize assessment tactics between program years, courses, and events, the group is considering strategies for expanding the college's use of the "rubrics" feature in ExamSoft© (Dallas, TX). Through ExamSoft©, the hope is that it will be logistically simpler to track progress development throughout the curriculum, including through IPE activities.

Finally, the team plans to work on capturing student IPP exposure during the fourth year in accordance with Standard 11.3. The Office of Experiential Education has updated the student and faculty evaluation forms utilized on the required patient care electives to capture the interprofessional practice occurring on rotation. Students will identify the type of IPP, as well as their level of involvement. .

CONCLUSIONS
Following twelve years of evolving IPE, the themes influencing IPE advancement were examined, defined and illustrated with examples. These themes included: working through program differences; collaborators and effective collaboration; attention to implementation planning; and prebriefing and debriefing. Students' IPE abilities are continually evolving as are IPE events and overall IPE curricula continual modifications and quality improvement are necessary to keep IPE advancing and meet students' educational needs.

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Table 1: Timeline of IPE Implementation: Required and Elective Courses in the Doctor of Pharmacy Curriculum

Year(s)	~Number of PharmD Students per Academic Year	PharmD Student Professional Year	Other Professions Involved	Description of Course, Event or Activity
2003 – present	24	P3	MD, NUR, PA, RT	Advanced Cardiac Life Support (ACLS) elective; mock codes **(elective course)***
2009 – 2011	20	P3	NUR	IPE elective course; pharmacy and nursing students paired up to conduct home visits **(elective course)***
2013 – present	70	P3	MD, NUR, PT	Longitudinal Patient Introductory Pharmacy Practice Experience (IPPE) course; students from four disciplines are put together to care for a standardized patient **(required course)***
2013 – present	70	P3	PA, PT	Longitudinal Patient Introductory Pharmacy Practice Experience (IPPE) course; students work together on a virtual patient case, submit a patient care plan, and work together as a team to determine discharge for a standardized patient **(required course)***
2013 – present	20 (2013), 25 (2014)	P3	NUR, OT, SLP	IPE elective course; students work together on team building exercises, meet with patients in the community, and reflect on experiences as part of an interprofessional team **(elective course)**
2013 – 2014	40	P2	NUR	Longitudinal Patient Introductory Pharmacy Practice Experience (IPPE) course; students were put into groups to follow a patient throughout the academic year **(required course, one section with IPE format, three sections with standard format)***
2014 – present	30 (2014), 150 (2015)	P2	MD, NUR, PT, PA, SW, SLP	Longitudinal Patient Introductory Pharmacy Practice Experience (IPPE) course; roles and responsibilities event with two other institutions focusing on the importance of IPE, roles/responsibilities on the healthcare team, and clarifying stereotypes **(elective course - 2014; required course - 2015)**
2015 – present	150	P3	MA, MD, NUR, OT	Longitudinal Patient Introductory Pharmacy Practice Experience (IPPE) course; roles and responsibilities event with two other institutions focusing on legal and ethical roles amongst the healthcare team which is assessed through a team-based case **(required course)**
2015 – present	150	P2	AT, MD, NUR, PT, PA, SW, SLP	Practice Skills Lab course; case-based simulation event with two other institutions where students are put into groups of 8-10 with various disciplines and complete a patient case **(required course)**

2015 – present	150	P3	MB, MC, PhT	Integrated Case Studies course; case-based communications event with one other institution focusing on identifying and demonstrating communication style(s) and completing a patient case **(required course)**

Key: Athletic Training (AT), Medical Assistant (MA), Medical Billing (MB), Medical Coding (MC), Medical Doctor (MD), Nursing (NUR), Occupational Therapy (OT), Pharmacy (PharmD) Pharmacy Technician (PhT), Physical Therapy (PT), Physician Assistant (PA), Respiratory Therapy (RT), Social Work (SW), Speech-Language Pathology (SLP),
*Resulted in poster/presentation/publication/award(s)

Table 2: Timeline of IPE Implementation: Co-Curricular Activities Available to Pharmacy Students

Year(s)	~Number of PharmD Students (per academic year)	PharmD Student Professional Year	Other Professions Involved	Description of Course, Event or Activity
2004 – present	30-60	P1, P2, P4	NUR, OPT	Interprofessional diabetes clinic; underserved diabetes patients are assessed by faculty and students from each discipline and a report is sent to the primary care physician **(co-curricular event)***
2010	20	P3, P4	OT, PT	Students work together as a team to determine discharge for a standardized patient **(co-curricular event)**
2012	12	P4	MD	Pharmacy students serve as standardized pharmacists that third year medical students call for recommendations on antibiotic therapy **(co-curricular event)**
2013 – present	Variable (2-10)	P3, P4	MD, NUR, OT, PT, PA, SW, SLP	Establishment of Promoting Interprofessional Education for Students (PIPES); students from each health profession share important topics and concepts to better understand other healthcare professions and roles on the team **(co-curricular event/student organization)**
2013 - present	Variable (20-35)	P3, P4	MD, NUR, PA, PT, RD, SLP	Roles and responsibilities event with two other institutions; case-based discussion on roles/responsibilities with the healthcare team **(co-curricular event)**
2014 – present	4 (2014), 7 (2015)	P3	NUR, OT, PH, PT, REC, SW	Collaboration between multiple health professions to develop and present health-related topics to community members/students through a health fair **(co-curricular event)**

Key: Medical Doctor (MD), Nursing (NUR), Occupational Therapy (OT), Optometry (OPT), Pharmacy (PharmD), Physical Therapy (PT), Physician Assistant (PA), Public Health (PH), Registered Dietician (RD), Social Work (SW), Speech-Language Pathology (SLP), Therapeutic Recreation (REC)
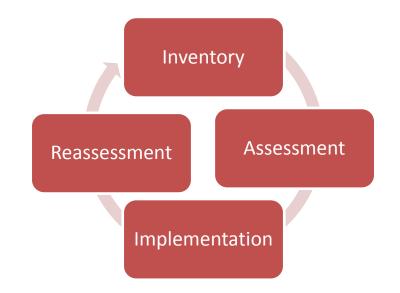*Resulted in poster/presentation/publication/award(s)

Figure 1: General Approach to IPE Implementation or Expansion