“An interprofessional education fingerprint for APPEs: Developing metrics for collaborative interactions”

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Introduction. While many students interact with other healthcare professionals during APPEs, no definitive evidence demonstrates that all students participate as part of a team during their final year of school. Even though students work along side other health care professionals, one cannot assume they are learning to function effectively as a team. ACPE Draft Standards 2016 mandate pharmacy curricula must prepare all students as a contributing member of an interprofessional team; and that all students must participate in “experiential educational activities with prescribers and other team members that are designed to advance interprofessional team effectiveness.” Consequently, an imperative for intentional interprofessional education (IPE) and its associated assessment during APPEs exists. But first, we must understand where opportunities for team interactions exist within each school’s affiliated practice sites.

According to ACCP, the acute care general medicine and ambulatory care APPEs are best suited for team-based care and thus are logical places to require it. Deliberate assessment of current conditions can determine for each school the most appropriate APPEs in which to integrate or require IPE, thus using limited resources wisely. This project was designed to characterize interprofessional interactions during APPEs at all practice sites used by one school of pharmacy to determine which experiences offer opportunity for IPE and the degree to which students are integrated and accountable to health care teams. Metrics used in this project could be used to measure interprofessional team participation opportunities at other institutions which would focus site development efforts in IPE where it makes the most sense.

Methods. In July, 2013, 7 questions about the frequency and scope of interprofessional interactions experienced at APPE sites were embedded into the web-based, end-of-APPE evaluation that all fourth-year (PY4) students complete. To request a copy of questions used, contact the corresponding author at jendan@uw.edu. Questions targeted level of integration with the team (none, observation, shared decision making); frequency/method of interactions; role on the interprofessional healthcare team (no opportunity, passive listening, active participation, full integration); and shared level of accountability.
for patient outcomes (full, partial, none). Students also rated each experience overall on how well it prepared them for collaborative care. Data were continuously collected over a 1-year period. Analysis by gender, type of APPE site, and timing of the APPE was completed using descriptive statistics in Excel and R statistical software, version 2/15.2. Responses were analyzed by type of site (General Medicine, Inpatient, Clinic, Community, other) (see Table 1). Preceptors also evaluated students using two common items: role on the health care team and shared level of accountability for patient outcomes. Comparison to student responses has yet to be completed.

**Results.** All PY4 students (n = 82, 100% response) completed the online evaluations (July 2013 – June 2014) yielding 717 responses for 739 possible data points. Gender differences (33 males, 49 females) did not affect student responses about level of integration or accountability with the team.

Students frequently reported lack of any interaction with physician assistants, nurse practitioners, physical/occupational therapists, social workers, dentists, and dieticians (see Figure 1). They reported sharing decision-making capacity with physicians, nurses, physician assistants and nurse practitioners most (see Figure 2).

Students reported that general medicine (75%), inpatient (78%), and clinic (63%) APPEs prepared them best (“great extent”) to practice collaboratively with non-pharmacy health professionals more often than community (30%) or others (23%). Students reported their role on the team as being fully integrated for general medicine and clinic APPEs most often (see Figure 3). They reported sharing full accountability for patient care outcomes with their teams most often for these same two APPEs (see Figure 4). Students reported a positive change in integration (mean change: 20% increase, range 10-40%) and accountability (mean change: 25% increase, range 10-40%) as the APPE year progressed. In the future, preceptor and student responses for similar items will be compared and analyzed.

**Discussion.** Collecting this data shows potential for benchmarking. For instance, with these results we identified specific sites where students are most integrated into team-based care. We are now using this information to facilitate sharing of best practices. These results also identified two sites where students were not integrated into teams—a useful finding for preceptor development efforts. This data created searchable criteria that helped identify the best sites in which to start a new shadowing program where IPPE students observe teams in action at APPE sites.

Trends in frequency and quality of interactions demonstrated many missed opportu-
nities for IPE and team-based care during APPEs, which suggests the assumption that students are working sufficiently with other professionals in the forth year is false. Additional opportunities for students to interact with prescribers, in addition to physicians, should be sought. Even though students did not interact with physician assistants or nurse practitioners as often as physicians and nurses, they shared decision-making capacity—an optimistic finding for the future of collaborative practice. We should aim future site development efforts at increasing the frequency of these quality interactions with non-physician prescribers. The trend upward in integration and shared accountability with the team over the APPE year suggests that students improve in competence and confidence in team-based practice. Thus, these metrics have value as measures for team-readiness and competence to perform interprofessional patient care.

Unfortunately, we did not measure interactions with students of other health professions. Those questions have been added this year. Additional measures of individual student performance and team effectiveness are needed to prove that every student is learning to function effectively as part of an interprofessional team.

**Conclusion.** Baseline measurement of interprofessional interactions that PY4 students encounter will form the basis for benchmarking across practice sites. These metrics will be used over time to detect impact of interventions designed to enhance IPE training in APPEs. Intentionality about training in team-based care should be integrated into APPEs and actual team performance behaviors measured to demonstrate impact on learning and patient care.

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<th>Table 1. Descriptions of APPE Type</th>
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<th>Type</th>
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| General Medicine                     | An acute care, clinical practice experience in direct patient care where the student sees a variety of disease states in adults (rounding with a medical team is expected)  
(All students are required to complete 1 of these APPEs, but some elect to do more.) |
| Inpatient                            | An acute care, clinical practice experience in direct patient care (often includes specialty services such as infectious disease, critical care, cardiology, psychiatry, pediatrics, geriatrics, etc.)  
(All students are required to complete 1 of these APPEs, but some elect to do more.) |
| Clinic                              | An ambulatory care clinical practice experience in direct patient care in a clinic (or pharmacy within a clinic) where the student has access to the medical chart  
(All students are required to complete 1 of these APPEs, but some elect to do more.) |
| Community                           | A outpatient practice experience in a community pharmacy performing direct patient care and other practice management activities that promote advanced practice for pharmacists  
(All students are required to complete 1 of these APPEs, but some elect to do more.) |
| Other                               | All other APPEs that do not fall into previous descriptions. Includes non-patient care experiences.  
(All of these APPEs are elective experiences.) |

REFERENCES

Interprofessional education (IPE) occurring during Advanced Pharmacy Practice Experience (APPE) rotations offers students the opportunity to apply concepts and key elements of IPE learned during didactic coursework to the provision of patient centered care in a variety of practice settings. According to 2013 Center for the Advancement of Pharmacy Education (CAPE) Outcomes, students must be prepared to participate as collaborators and health promoters as members of interprofessional teams. Learning objectives for IPE activities may incorporate the Interprofessional Education Collaborative (IPEC) core competencies for IPE: values and ethics, roles and responsibilities, interprofessional communication, and teams and teamwork. The Accreditation Council for Pharmacy Education (ACPE) Draft Standards 2016 incorporate IPE as a standard, with the expectation that all students must have opportunities to “learn about, from, and with other members of the interprofessional healthcare team.”

Schools of Pharmacy should consider the feasibility of implementing structured IPE activities into faculty-led rotations. At MCPHS University, the School of Pharmacy and School of Physical Therapy offered a unique pilot project for APPE students to collaborate with physical therapy students to manage risk factors associated with patient falls. The Balance, Movement and Wellness (BMW) Center is operated by the School of Physical Therapy (PT) at Massachusetts College of Pharmacy and Health Sciences (MCPHS) and provides PT services at no charge to participants while educating a new generation of physical therapists. The BMW Center runs for eight weeks in the fall and spring semesters. Many of the Center’s participants have multiple co-morbidities, often with limited opportunities for medication review. It is well established that polypharmacy and other medication associated risk factors can affect balance and fall risk. It was hypothesized that, by working as a team, the PT/Pharmacy program faculty and students could provide a collaborative approach to the care of the BMW Center participants. The objectives for this pilot project were as follows: Given an older adult BMW Center participant, students will be able to: 1) accurately assess for fall risk with regard to balance and medications; 2) recommend effective intervention plans for managing identified participant-related problems; 3) apply a structured model for effective interprofessional team communication; 4) collaboratively present a patient case on assigned participant(s).

Design

The pilot program was developed by two faculty members each from the School of Pharmacy and the School of Physical Therapy through a University funded IPE grant in Spring 2014. Students assigned to the pharmacy faculty during the six-week Spring APPE block and all PT students working with participants of the BMW Center participated in the pilot program. Students were assigned to interprofessional teams and were required to view online recorded sessions that included the purpose of the BMW Center and the role of each student within the Center; measures for assessing a participant’s balance and movement; methods for categorizing a participant’s fall risk with regard to medication use; and an overview of the SBAR communication model (S=Situation; B=Background; A= Assessment; R= Recommendation) and SBAR Drug Consult/PT Request Form that was developed to assist with requesting/communicating about drug-related and/or physical therapy-related information from each discipline. Under supervision of their respective faculty members, each team of students worked with and evaluated specific participants. PT students performed thorough evaluations of fall risk using standardized measures for mobility and pharmacy students collected medication histories which were evaluated for drug-related problems as well as for medications that may be affecting participants’ balance.
and movement. Upon completion of the evaluation, the team of students collaborated to calculate an overall fall risk score using a standardized assessment tool and presented their findings for each participant in one oral case presentation evaluated by faculty from both disciplines. At the end of the project, participants completed a brief survey and students completed a reflective activity related to their experiences with the BMW Center.

Assessment

Six APPE students and 28 PT students participated in the BMW Center pilot project. Teams of students collaboratively performed fall risk assessments and delivered case presentations on their findings for 12 participants. As a result of this process, individual physical therapy intervention plans were developed for each of the twelve participants. Examples included working on ankle range of motion in an individual whose tight ankles prevented using an ankle strategy to recover balance, and using obstacle courses for an individual who was having difficulty maintaining balance in novel situations. In addition, pill box organizers were distributed to the participants with instructions for use to enhance compliance and 27 medication-related interventions were recommended and discussed with the participants. Examples included optimizing the timing of medication administration to avoid drug interactions, discontinuing over-the-counter medications to avoid duplicate therapy, dose reductions, and initiating vitamins. Student teams used the SBAR Drug Consult/PT Request Form 12 times when working collaboratively on the patient case presentations.

Twenty-eight (six pharmacy and 22 PT) out of 34 (82%) students completed the reflective activity at the end of the project. When asked what was learned as a result of their experience with the pilot project, sample responses included, “I realize I have to be much more aware of the patient’s medications when determining fall risks.” “I learned the value of interdisciplinary partnerships. It showed that both PT and pharmacy students can work together to improve patient care.” “I was surprised to learn how much the pharmacy student was able to help the participant in the BMW.” “I was surprised to learn how many techniques and assessment tools there are for a physical therapist to improve and assess the patient’s movement and balance.” When asked to provide feedback to improve this program, many students suggested to allot more time for the medication reviews and for collaborative time between the disciplines to prepare the presentations.

Nine out of 12 (75%) BMW Center participants completed the brief survey. About 90% of participants rated their experience with the BMW Center as excellent. Sample responses of the participants when asked for their feedback about the program included, “This is an invaluable service for those of us who have been taking some medications for years with little or no review.” “It is hard to recommend improvements when something is running so well. I find the atmosphere to be upbeat, encouraging and cooperative.”

Conclusion

The incorporation of pharmacists and pharmacy students in the BMW Center with physical therapists and PT students allowed each profession to share their knowledge, skills, and abilities as they provided patient centered care. Teams of students collaborated on fall risk assessments and communicated interprofessionally to deliver a comprehensive patient case presentation. Through this pilot program, three of the four IPEC core competencies (roles and responsibilities, interprofessional communication, and teams/teamwork) were integrated into one IPE activity. Pharmacy and PT faculty plan to continue offering the activity annually during the spring APPE blocks.

References:


IPE Resources

- IPE Interprofessional PORTAL (www.medportal.org)
- Core Competencies for Interprofessional Collaborative Practice (https://ipecollaborative.org)
- American Interprofessional Health Collaborative (www.aihc-us.org)
- Association of Interprofessional Healthcare Students (http://aihs.info/)
- Centers for Interprofessional Education at Health Profession Schools (www.ipe.umn.edu)
- Center for Advancement of Interprofessional Education (www.caipe.org.uk/)
- Coordinating Center for Interprofessional Education and Collaborative Practice (www.hrsa.gov/grants/apply/assistance/interprofessional/)
- IOM Global Forum on Innovation in Health Professional Education http://www.iom.edu/Activities/Global/InnovationHealthProfEducation.aspx
- IOM Workshop Summary – Interprofessional Education for Collaboration: Learning How to Improve Health from Interprofessional Models across the Continuum of Education to Practice (http://iom.edu/Reports/2013/Interprofessional-Education-on-for-Collaboration.aspx)

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We hope that you enjoyed this issue of the American Association of Colleges of Pharmacy, Experiential Education Section newsletter. We received numerous quality submissions and appreciate all who took the time to share with us the scholarship they are engaged in at their respective schools/colleges of pharmacy as it relates to Interprofessional Education (IPE).

The Institute of Medicine’s Report “To Err is Human” in 2000 emphasized the need to change the way we educate health professionals if we are to decrease the number of medical errors that occur as a result of caring for patients. This was reinforced in a subsequent report in 2003 “Health Professions Education: A Bridge to Quality” which identified the ability to work in interdisciplinary teams as a core competency of health care professionals. These reports set the stage for the formation of the Interprofessional Education Collaborative (IPEC) with six sponsoring organizations: The American Association of Colleges of Nursing, American Dental Education Association, American Association of Medical Colleges, American Association of Colleges of Pharmacy, American Association of Osteopathic Medicine, and Association of Schools of Public Health. In 2011, the expert panel of the Collaborative published the Core Competencies for Interprofessional Collaborative Practice which stimulated the inclusion of interprofessional education in accreditation standards for nursing, pharmacy and medicine. The Core Competencies for Interprofessional collaborative practice include 4 domains: 1). Value/ethics for interprofessional practice, 2). Roles/responsibilities, 3). Interprofessional communication and 4). Teams and teamwork.

The Accreditation Council for Pharmacy Education and the Centers for the Advance- ment of Pharmaceutical Education stress the importance of student pharmacists to be practice ready and team ready, further emphasizing the need to incorporate interprofessional education and practice opportunities into our curriculums. The World Health Organization defines Interprofessional education as “when students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes”. The articles in this newsletter were chosen to provide some insight into how two schools/colleges of pharmacy are establishing and integrating interprofessional practice opportunities within the curriculum. Several references (see page 6 of newsletter) on interprofessional education have been provided to further assist you as you work to incorporate interprofessional team-based learning into the your curriculum.

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