Incorporation of Interprofessional Quality Improvement Education Experiences for Third Year Pharmacy Students

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Background

- At UMKC, all P3 students are enrolled in General Medicine I, a longitudinal clinical IPPE course. Interprofessional team simulations are embedded as part of the course in addition to patient care and clinical activities that occur at individual sites and precepted by primary faculty
- At the MU location, pharmacy students have been involved in IPE since 2009 with a focus on quality and safety. Since 2010 they have been incorporated into quality improvement (QI) efforts at a clinical site and in 2016 became involved in the formal QI activities with internal medicine residents
- Despite ACPE Standards 2016 stating that application of quality metrics is a required element of the PharmD curriculum, QI education of PharmD students is lacking[1,2]
- Quality improvement is inherently interprofessional work, and the National Academy of Medicine (formerly IOM) includes working in Interprofessional teams and applying quality improvement as competencies that all healthcare professionals should attain during their education[3]
- The National Collaborative for Improving the Clinical Learning Environment (NCICLE) recent findings from a 2017 symposium suggest that the value of enhancing IP learning environments could be increased learner involvement with QI initiatives and improved ability for academic centers to deliver high quality care and enhance patient outcomes[4]
- In addition, ASHP PGY-1 Accreditation Standards require that pharmacy department personnel are engaging in quality improvement to assess pharmacy services and act on the assessment by designing improvement initiatives. ACGME requirements for Internal Medicine programs require that residents have the opportunity to be engaged in Interprofessional quality improvement activities[5,6]

Methods

- All P3 students at MU (n=29) participated in the 4 week Interprofessional Curriculum (IPC) in Quality and Safety with 4 other disciplines:
  - Medicine (n=85)
  - Nursing (n=57)
  - Respiratory Therapy (n=13)
  - Masters in Health Administration/Masters in Health Informatics (n=16)
- Teams of 10-12 students were facilitated by paired IP faculty for the curriculum
- A pre and post Knowledge, Skills and Attitudes survey was completed by students in the Quality and Safety curriculum. A Wilcoxon signed rank test was used to evaluate the change from pre to post for available paired data
- A cohort of these students (n=6) also completed a clinic-based quality improvement curriculum where brief didactic bursts were paired with dedicated work sessions and facilitated by IP faculty experts to further their QI training and complete a longitudinal QI project
- The longitudinal project in which students aimed to improve rates of asthma action plans—aligned with learner clinical level and was carried out in the practice site with an IP team
- A pre and post survey examining past experience in, current level of interest and engagement in QI work was completed by those students participating in the longitudinal QI project

Timeline of Student Participation

IPC in Quality and Safety

Week 1:
Intro lecture
SAFE room team-building simulation

Week 2: Group Session 1
- Flow of care for pt
- Fishbone diagram
- Team chooses top 3 root causes

Week 3: Group Session 2
- Discuss reporting culture
- Prioritize interventions
- Discuss measures of success
- Practice structured communication
- Team planning for simulation

Week 4: Team-based Simulation
- Urgent Care Setting
- Triage 6 patients
- Pre-brief & Debrief

Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May

2017

Session 1
- Framing Introduction
- Conduct first QI team meeting using 7 step meeting process
- Draft AIM statement

Session 2
- Discuss the Model for Improvement
- Gather baseline data
- Draft operational definition of key measure(s)
- Fishbone diagram

Session 3
- Plan a test of change using Roger's Characteristics of Successful Innovation
- Analyze ideas with effort/yield table
- Plan PDSA #1
- Submit QI IRB

Session 4
- Review PDSA#1 results
- Complete "Act" by examining supports/barriers to inform PDSA#2
- Plan PDSA#2
- Track PDSAs, specific aim, specific measures in poster template

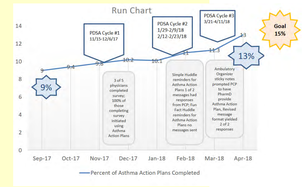
Session 5
- Describe utility of annotated run charts Review first two PDSA cycles
- Identify lessons thus far
- Develop plan for completion by 5/18

Session 6
- Compare table data vs run chart
- Use run chart analysis rules to distinguish significant change
- Review 3 PDSA cycle results

Session 7
- Reflect on making/sustaining change
- Use force field diagram to identify drivers/barriers
- Identify 2-3 lessons learned for next QI project

Session 8
- Finalize QI poster for presentation

2018



Internal Medicine Quality Improvement Curriculum

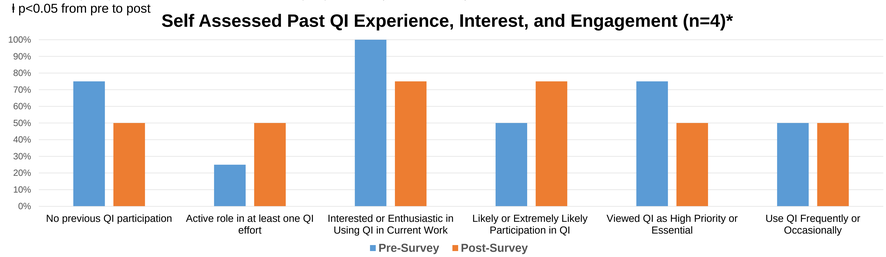
Results

IPC in Quality and Safety Results (n=17)*

QI Skills-based Survey Items	Pre- Mean	Post-Mean
Identifying factors contributing to an adverse event	3.88	4
Analyzing an adverse event in a non-judgmental manner	3.88	4.06
Participating in a root cause analysis	3.18	3.76ł
Survey Items Related to Knowledge and Attitudes re: QI	**Pre-Mean**	**Post-Mean**
Involving multiple health care disciplines in QI training enhances understanding of different professional perspectives	4.53	4.65
There is a gap between what we know as 'best care' and what is provided on a day-to-day basis	3.88	3.76
To consistently achieve good health care outcomes, systems of care must be well coordinated	4.41	4.65
Effective health care leaders challenge the status quo and offer suggestions for improving systems of care	4.12	4.41

*While survey response rates were >90%, matched pre/post survey data was only available for 17 students
ł p<0.05 from pre to post

Self Assessed Past QI Experience, Interest, and Engagement (n=4)*



*Matched pre/post survey data was only available for 4 students
p-value was 0.655

Implications and Future Research

Although a small number of pharmacy students participated in the IP Quality and Safety Curriculum, the survey results trended toward an improvement in QI knowledge, skills and attitudes. Students self-assessed significant improvement in root cause analysis skills. Thus, offering interprofessional QI education which mimics the clinical setting may build confidence in QI skills as well as foster incorporation of QI principles to ensure safe and effective care.

In addition, though an even smaller cohort of students were involved in the longitudinal IP QI curriculum and clinic project it is evident that most anticipate participating in QI in the future. The authors anticipate that the disappointing post-survey results may have been due to student perceptions of being engaged in a "different" activity than their peers at other clinical sites. Ideally, we would engage all learners, rather than cohorts, in IP QI education that are appropriate for their level of learning and investigate the application of IP QI education across a multi-site campus model.

The lack of detailed language from pharmacy accrediting bodies and other organizations engaged in post-graduate training related to QI make guiding the education of future pharmacists challenging. The AAMC suggests that medical education includes the systematic analysis of QI methods to improve practice among the core entrustable professional activities (EPAs). Pharmacy education should consider aligning with our interprofessional partners as we continue to consider assessment of EPAs in our own curricula.

In order to define gaps, schools of pharmacy should consider mapping QI throughout the curriculum and determine where further integration of QI skills can be incorporated and evaluated. The authors believe scaffolding of QI education into pharmacy curricula, integrating QI "terminology" and principles into the Pharmacist Patient Care Process and helping students understand how QI is not only inherently Interprofessional, but also embedded as part of patient care will better prepare them to engage in QI as part of APPEs and post-graduation.

References and Acknowledgements

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