Safer Together: A Novel Interprofessional Near-Miss Root Cause Analysis Curriculum

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Background

Institutions vary in how they instruct and involve learners in evaluating medical errors. Best practices in conducting Root Cause Analyses (RCA) include interprofessional (IP) involvement – an ingredient missing from most traditional venues for error review by learners. Error evaluation and Interprofessional Collaborative Practice (IPCP) are focus areas within the ACGME Clinical Learning Environment Review (CLER) process, and are emphasized in Internal Medicine Milestones including SPB1, SPB2, PBLI1, PROF1, and ICS2.

We hypothesize that a curriculum aiming to teach RCA methodology through hands on investigation of near miss events will also improve teamwork competencies if IP learners are included.

Innovation

We redesigned an existing Internal Medicine curriculum, the Near Miss RCA (NMRCA), to incorporate IP learners. All course material was moved to a free mobile-based app (SLACK) designed for team collaboration, but utilized here as a learning platform to aid in course organization, asynchronous group-work, and faculty supervision.
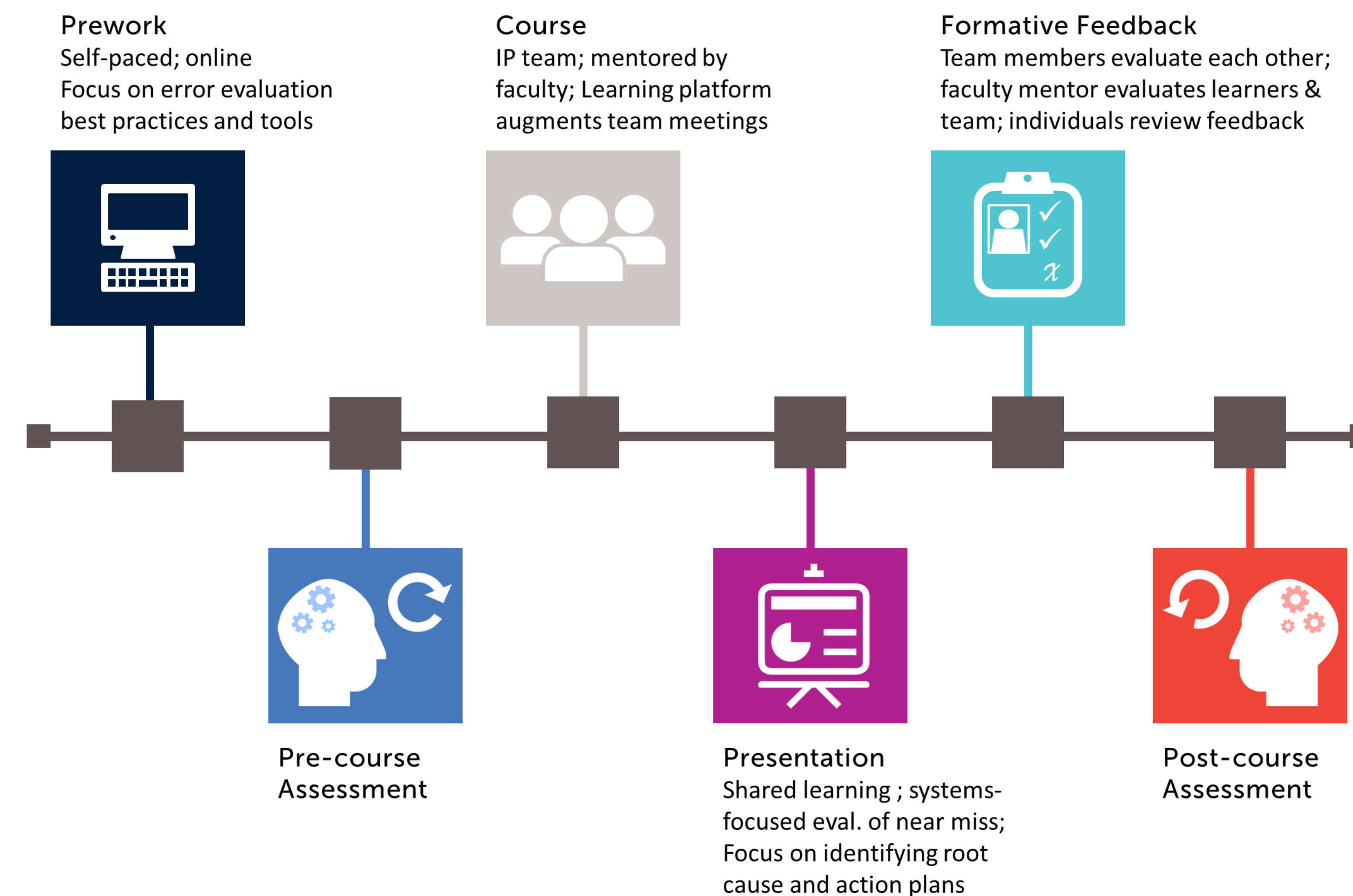
In order to create a common foundation, we flipped the classroom, delivering a prework module consisting of readings and a practice Fishbone exercise for a non-medical error.
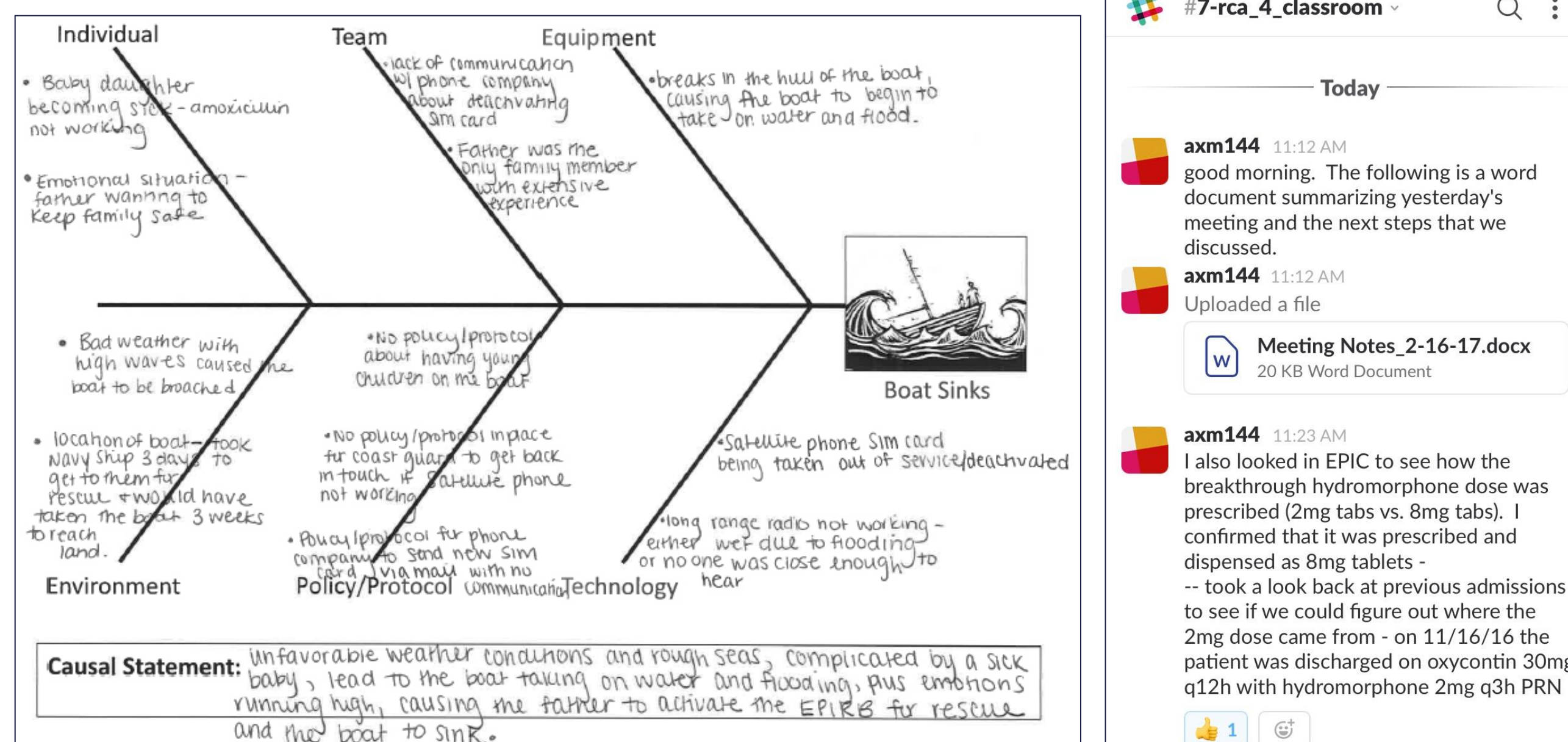
To recruit learners from outside Internal Medicine, we formed partnerships with local IP stakeholders. We incorporated the Jefferson Teamwork Observation Guide (JTOG) to provide 360 degree formative feedback on teamwork competencies. The JTOG is a tool designed to evaluate health care teams or individual members from the vantage point of an outside observer, patient, care giver or team member. [1]

References:
1. Lyons, K., Giordano, C., Speakman, E., Smith, K., & Horowitz, J. (2016). Jefferson Teamwork Observation Guide (JTOG): An instrument to observe teamwork behaviors. *J Allied Health*. 45(1), 49-53.
2. Heinemann citation: Heinemann, G., Schmitt, M., Farrell, M., & Brallier, S. (1999). Development of an attitudes toward health care teams scale. *Evaluation & The Health Professions*. 22(1), 123-142.
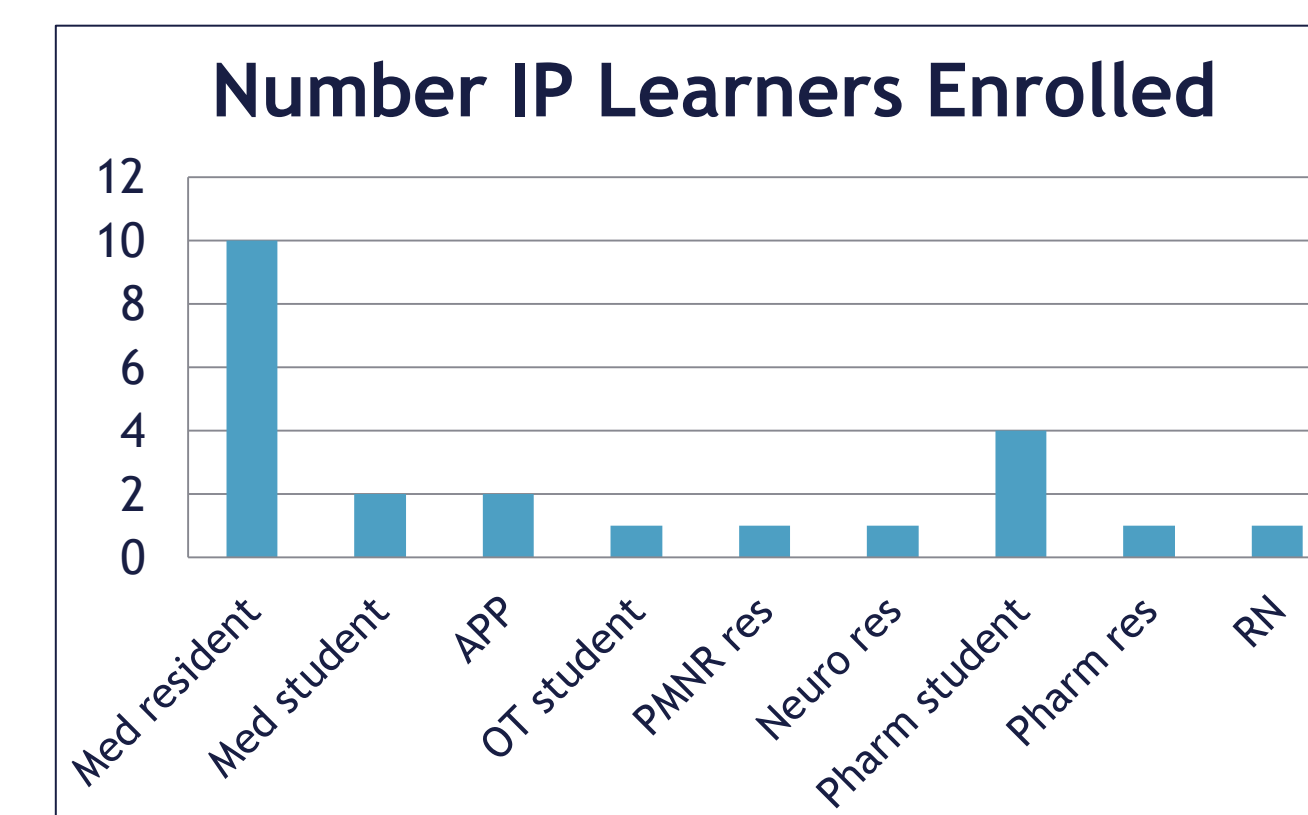Special thanks to Caitlyn Sidrane for assistance with graphic design

Methods

Five learner teams will complete the NMRCA course this year. The course runs over two months with the timeline below. A modified version of the Attitudes Towards Health Care Teams tool was used to assess learners pre and post-course, as well as several qualitative questions. [2]

Prework
Self-paced; online
Focus on error evaluation best practices and tools

Course
IP team; mentored by faculty; Learning platform augments team meetings

Formative Feedback
Team members evaluate each other; faculty mentor evaluates learners & team; individuals review feedback

Pre-course Assessment

Presentation
Shared learning ; systems-focused eval. of near miss; Focus on identifying root cause and action plans

Post-course Assessment

Results

22 learners will have gone through the course from seven professions by the end of this academic year. To date, 12 learners have completed the curriculum. The course has been well received, with 90% of learners satisfied to very satisfied with the experience.

Number IP Learners Enrolled

(Bar chart: Med resident, Med student, APP, OT student, PMNR res, Neuro res, Pharm student, Pharm res, RN)

Representative post-course feedback includes:

"I enjoyed the interprofessional engagement beyond the day to day work flow. I think it is critical to developing a culture of understanding and efficiency that is needed for a successful healthcare organization."

"It was nice to work with the residents, but as a student from another discipline, I sometimes felt lost in terms of understanding the medical terminology abbreviations that were thrown around. I think it would have been nice if we went around and talked about our roles in more detail before we all started together [and] if the team was more well-distributed across all disciplines with PT, pharmacy, nursing, etc."

"Throughout this project, I learned so much from the other people in the group….I think a very important part of the process is speaking with the people involved with the error and thinking of each step along the way that may have contributed."
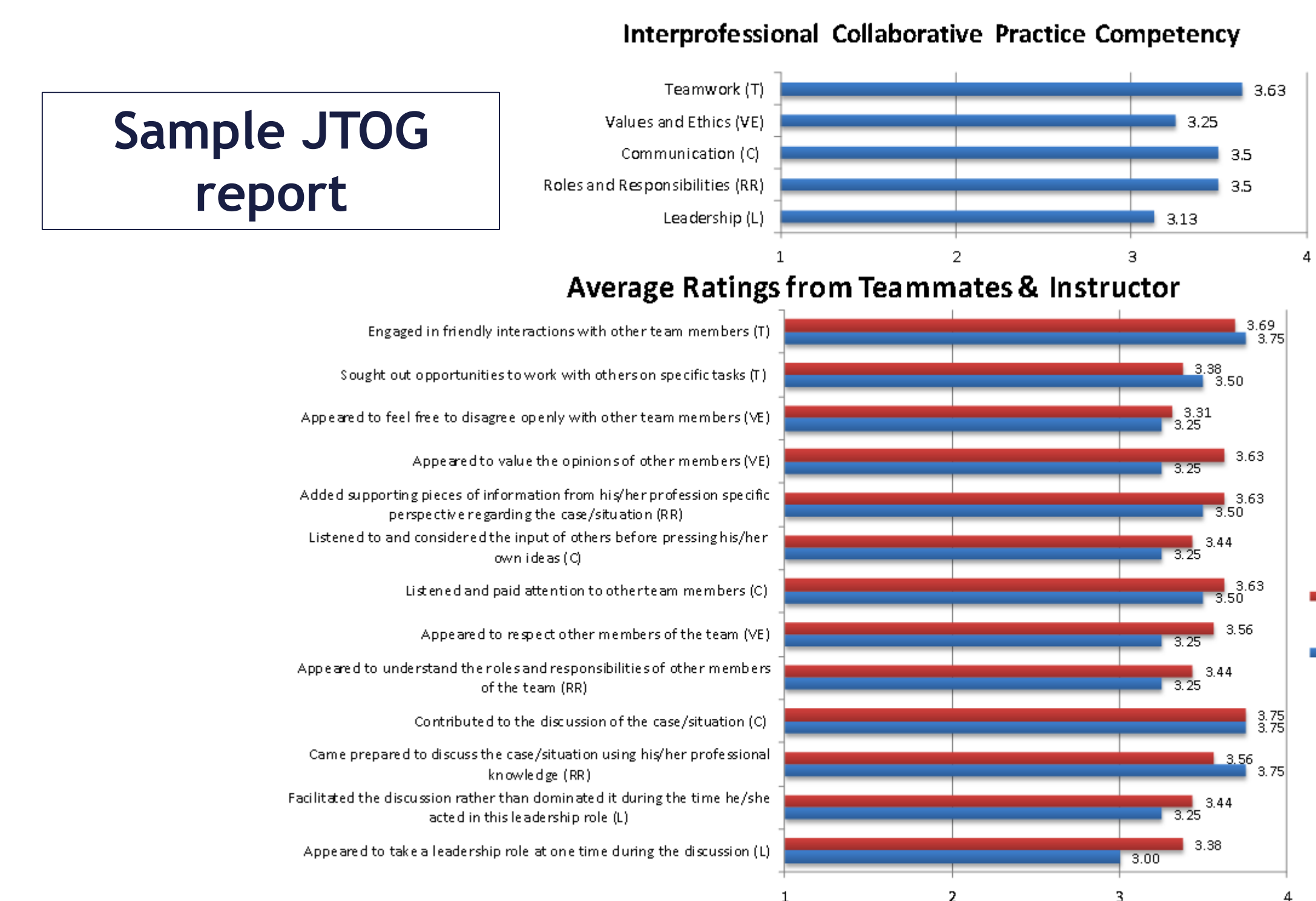
Following the course prework, **79%** of students were able to identify the four aspects of a high-quality RCA, and **53%** could put the steps of an RCA in order. Upon completion of the course, **90%** agreed or strongly agreed that discussing near miss events will bring about positive change and **73%** stated that when they see a near miss event in practice they will often or always report it.

Results Cont.

Learners were asked to identify words associated with IP Teams Before and after the course (see wordcloud below). Even before starting the program, students highly rated all items of the Attitudes Towards Healthcare Teams instrument. Combined with the small sample size to-date, this made it difficult to ascertain whether any statistical significant change occurred as measured by the tool. More analysis will be conducted upon the completion of the program by all 2016-2017 cohorts.

Learners were also asked pre and post-course to identify the specific IP competencies where they believed they needed personal improvement. After completing the course and reviewing their JTOG results, 42% (5 of 12) changed their answer from their initial self assessment (for example, from "Leadership" to "Teamwork").

Interprofessional Collaborative Practice Competency

Sample JTOG report

Average Ratings from Teammates & Instructor

Conclusions

The NMRCA has been successfully converted from a course involving only medical residents to a fully IP and interdisciplinary experience. This intervention reinforces RCA best practices and the roles of health care providers in all professions to report errors, participate in RCAs, and adopt a systems approach to medical errors. The addition of IP team members has been well received and appears to enrich learning. Structured formative feedback on teamwork allows for self reflection. Development of prework modules and use of a interactive learning platform may help scale this innovation by creating "simulated" near miss cases that could be used in additional IP educational venues.