

## EVALUATING EFFECTIVENESS OF STUDENT-LED QUALITY IMPROVEMENT AND PATIENT SAFETY SKILLS WORKSHOPS FOR MEDICAL STUDENTS

**Lead Author:** Shreya Goyal, BBA and Kevin Shah, BBA

**Contributing Authors:** Vignesh Ramachandran, Jaden R. Kohn, Ryan Jacobs, Matthew Stampfl, Jesal R. Shah, Justin Fu, Weijie Lin, Brandon Ho, Grace Wey, Sara Andrabi, Diana Stewart

**Category:** Education

### Background

While the Association of American Medical Colleges encourages medical schools to incorporate quality improvement and patient safety (QI/PS) into training, medical students continue to have limited QI/PS exposure.

### Objectives

To prepare medical students for careers that involve QI/PS, the Institute for Healthcare Improvement (IHI) student chapter at Baylor College of Medicine integrated self-directed learning by offering student-led workshops to equip learners with skills to improve the quality and safety of healthcare processes.

### Methods

Workshops were hosted for medical students on five QI/PS topics between 2015-2018: Process Mapping, Root-Cause Analysis (RCA), Plan-Do-Study-Act (PDSA) Cycles, Evidence Based Medicine, and Patient Handoffs. Each workshop included a hands-on component to engage learners in practically applying QI/PS skills in their careers. The Process Mapping workshop provided learners with opportunities to shadow and interview healthcare providers at a county hospital emergency department in order to observe, assess, and improve the efficiency of various clinical processes. The RCA workshop utilized role modeling to address prevention of adverse events. The PDSA Cycle workshop encouraged students to incorporate IHI's Model for Improvement in their daily lives. The evidence based medicine workshop gave students the opportunity to systematically review and interpret a scientific manuscript. Lastly, the Handoffs workshop employed case-based learning for students to practice effective transitional care. Change in knowledge, attitudes, and behaviors was assessed via pre- and post-surveys, and analyzed using paired t-tests for difference in means. Surveys also gathered qualitative feedback.

### Results

Data was collected from 95% of learners (n = 173 / 183), with 18.5% of learners reporting prior formal instruction in these topics.

Improvements in confidence were observed for each workshop via 5-point Likert scale as shown in Table 1 below. 81.5% of learners believed that the workshops were useful. Additionally, data showed that students felt comfortable teaching the learned QI/PS skill to colleagues (mean difference 1.98, p-value <0.0001, n=127) and were more likely to pursue QI/PS projects in their careers after attending the workshops (mean difference 0.44, p-value <0.0001, n=127). Knowledge was assessed objectively with multiple choice and short answer questions before and after each workshop with a maximum score of 100%. Learners showed an increase of 53% in score for process mapping, 9% for handoffs, 53% for root cause analysis, 29% in PDSA cycles, and 68% in evidence based medicine.

<u>Workshop</u>	<u>Mean Pre/Post Difference</u>	<u>P-Value (n)</u>
Root-Cause Analysis	1.64	<0.0001 (31)
Handoffs	2.24	<0.0001 (62)
Process Mapping	2.07	<0.0001 (41)
Plan-Do-Study-Act Cycles	2.37	<0.0001 (19)
Evidence Based Medicine	0.90	0.0013 (20)

Baylor College of Medicine  
5th Annual Quality Improvement and Patient Safety Conference

**Discussion**

Few medical students have formal instruction in QI/PS tools. Our results indicate that student-led workshops are useful to teach QI/PS to medical students, and these workshops significantly improve learners' confidence and knowledge in performing various QI/PS skills. Additionally, qualitative feedback illustrated the value of workshops for learners to apply these practical skills throughout their training.