Enhancing Systems Integration in Healthcare Using Simulation: The Mortality and the Deteriorating Patient Simulation Project

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Conclusions

Structured debriefing

- Mortality reduction from sepsis.2
- Time dependent situations, such as the acutely deteriorating patient, exemplify the greatest need to optimize organizational performance. Multiple system resources must integrate with synergy to provide the right treatment to the right patient at the right time.
- Time dependent situations, such as the acutely deteriorating patient, exemplify the greatest need to optimize organizational performance. Multiple system resources must integrate with synergy to provide the right treatment to the right patient at the right time.
- The scope of culture and behavioral skills necessary for effective systems integration followed each OSSE. The Mortality and the Deteriorating Patient Simulation Project created objective, structured, simulation exercises (OSSE) to improve the prompt, bedside response to deteriorating patients. Each OSSE consisted of a scenario with a core clinical context relevant to the group participating in the exercise (e.g., post-operative cardiac surgery). More importantly, each OSSE had a component of clinical deterioration that necessitated optimized cross-disciplinary communication, assessment skills, and policy-based actions (e.g., urosepsis).
- Finally, some OSSE scripts deliberately forced interpersonal tension (discord) between providers, typically induced through instructions provided to a single confederate participating in the OSSE (e.g., “I can see the patient in 20 minutes”). In some cases discord was introduced prior to reaching “rapid response” criteria. Every OSSE was digitally recorded to facilitate reflection and to help identify future areas of focus for the respective groups.
- A structured debriefing to emphasize and teach the cultural and behavioral skills necessary for effective systems integration followed each OSSE. The scope of this project were Med-Surg pilot units and did not include ICU.

Overview

- Hypothesis: Simulation education can improve a culture of safety.
- Impact: Reduce the mortality of deteriorating patients via timely and effective teamwork.
- Method: A library of OSSEs with debriefings focused on a culture of safety.
- Measurement:
  - Pre, post, and late training evaluations
  - Evaluate impact on non-participating colleagues in the patient care unit

Focus of Debriefing

- Pay attention to detail
- Communicate clearly
- Have a questioning and receptive attitude
- Handoff effectively
- Support each other

Objectives

To help all providers understand how to be an effective team under duress, such as a deteriorating patient or clinical discord, (via behaviors) and have a positive experience through simulation.

Measurement

- Effectiveness of the exercises was assessed using participant surveys related to a culture of safety.
- Baseline values for clinical metrics were also obtained for future use as long-term metrics.
- The acute impact and effectiveness of the OSSE simulation training effort was the primary goal of the project.
  - A Likert scale was used to compare pre-OSSE, post-OSSE (early), and 2 month (late) perspectives.
  - Assessments were also performed on nurses that did not participate.
  - This was to test the hypothesis that there might be an impact on colleagues in the same units who did not participate in an OSSE.

Methods

The Mortality and the Deteriorating Patient Simulation (MDPS) project created objective, structured, simulation exercises (OSSE) to improve the prompt, bedside response to deteriorating patients. Each OSSE consisted of a scenario with a core clinical context relevant to the group participating in the exercise (e.g., post-operative cardiac surgery). More importantly, each OSSE had a component of clinical deterioration that necessitated optimized cross-disciplinary communication, assessment skills, and policy-based actions (e.g., urosepsis).

Finally, some OSSE scripts deliberately forced interpersonal tension (discord) between providers, typically induced through instructions provided to a single confederate participating in the OSSE (e.g., “I can see the patient in 20 minutes”). In some cases discord was introduced prior to reaching “rapid response” criteria. Every OSSE was digitally recorded to facilitate reflection and to help identify future areas of focus for the respective groups.

A structured debriefing to emphasize and teach the cultural and behavioral skills necessary for effective systems integration followed each OSSE. The scope of this project were Med-Surg pilot units and did not include ICU.

Conclusions

- MDPS successfully demonstrated that interdisciplinary simulation education acutely improves the culture of safety as measured by a survey methodology.
  - Survey score improvements representing a “culture of safety” were highly statistically significant, and present in physician and nursing allied health participants.
  - Over time (2 months) scores regressed to baseline.
  - An exception was the “excellent teamwork” question which declined at 2 months, still remained significantly improved.
  - OSSE is a useful technique to promote effective teamwork and learning. Clinical content provides a starting point, with each evolving OSSE structured to present “cultural content challenges.” The OSSE induced challenges and the participants’ responses were reviewed during debriefing, and allowed emphasizing clearly defined behaviors as solutions.
  - No impact was seen by those not participating in the simulation exercise.

References