Simulating Teamwork and Observation for Procedural Safety (STOPS)

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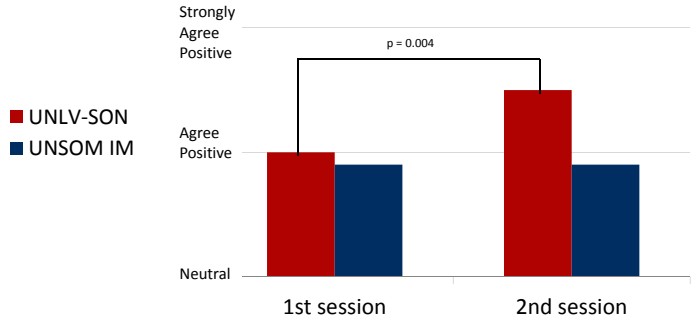
Introduction

- Hallmarks of safe systems within a hospital include development of teamwork competency
- The insertion of a central venous catheter (CVC) is a clinical practice where systematic implementation of safety strategies have been demonstrated to have a measureable effect on patient outcomes[1]
- Current systems of practice do not provide an optimal amount of time to comprehensively educate nurses and residents of the value of a team approach to technically challenging operations like CVC insertion

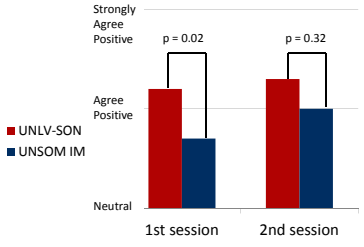
Methods

- STOPS is a prospective, 2 year observational pilot study
- Participants represent a multispecialty training background
  - UNLV school of nursing students
  - UNSOM internal medicine residents
  - Training pilot made part of standard curriculum
- Pairs of nursing students and residents were assigned & underwent:
- A multicomponent didactic session including:
  - An evidence based approach to central line insertion including a reference for training modalities, indications for stopping a procedure / minimizing complications, strategies for reducing central line associated blood stream infections (CLABSI) [1-4]
  - An instructional video demonstrating the procedure itself from an available online training site[5]
  - The basics of team based communication adapted from TeamSTEPPS training materials[6]
- Simulation (directly observed via one way glass and camera)
  - Complete autonomy by the procedural team.
- Debriefing
  - Focused feedback on the procedure, patient safety & team-based communication issues
- Research Survey (consent obtained)
  - IRB approved portion of STOPS
  - Questions adapted from AHRQ culture of safety survey[7] and the initial STOPS didactic session
- Descriptive & comparative statistics derived from survey results

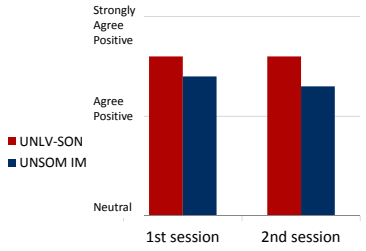
Survey Response to Constructive Communication & Feedback



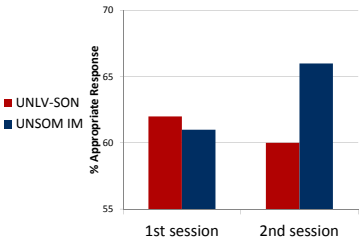
Survey Response to System Based Patient Safety



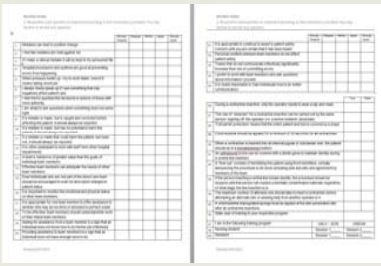
Survey Response to Teamwork



Survey Response to CVC Insertion / Technique



Survey Tool



Results

- 83 participant experiences were observed
- Nursing students had significantly more positive views of systems based patient safety at baseline
  - This difference was negated in 2nd session resident responses
- Statistically significant improvements were seen in survey questions designed around constructive communication and feedback among nursing students
- Non-significant positive trends were observed in teamwork, and systems based safety responses among nursing students
- Non-significant positive trends were observed in CVC procedural knowledge among internal medicine residents

Conclusions

- Currently there is little published experience on multispecialty procedural training for central venous catheter insertion
- Nursing empowerment and a team-based approach to central venous catheter insertion has been shown to improve patient outcomes (i.e. CLABSI rates, hospital costs) [1]
- Training such a team based, communication focused, approach to central line insertion is both institutionally feasible and individually beneficial
- Simulation based training of the teamwork aspects of central line insertion and patient safety may create significant improvements in important aspects of the multispecialty team
- Nursing care providers may experience the greatest benefit to multispecialty training in a simulation environment
- The introduction of similar simulation education programs should be considered in other institutions

References

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