Research Scholars Poster Presentation

Resident Confidence and Retained Medical Knowledge in Cardiopulmonary Resuscitation Affected By Simulated Mock Code Blue Session

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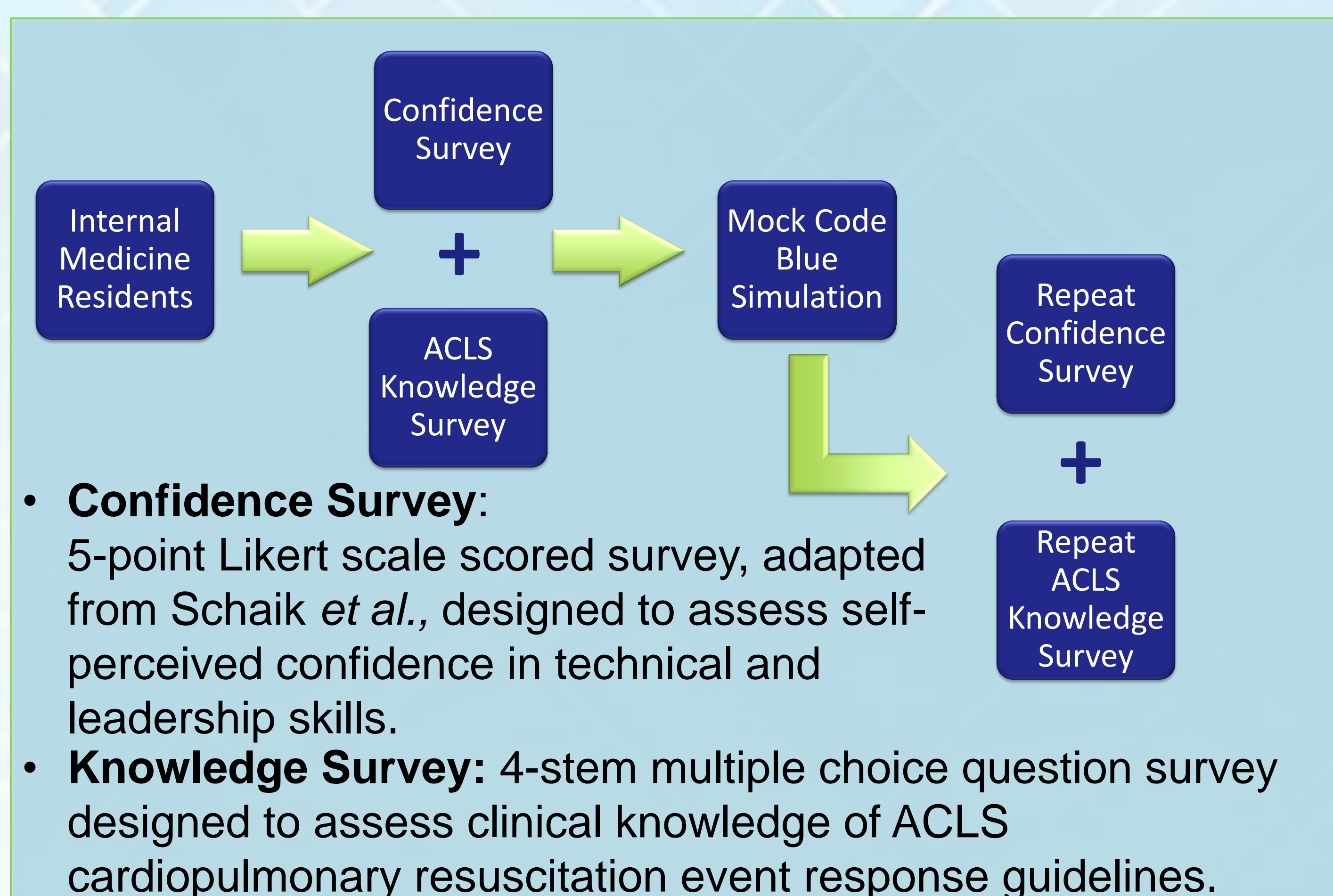Department of Internal Medicine, Lehigh Valley Health Network, Allentown, Pennsylvania

Introduction

- Internal medicine residents often feel unprepared to lead cardiopulmonary arrest response teams (Hayes *et al.*).
- Overall rates of in-hospital cardiopulmonary arrests (code blues) are decreasing (Mickelsen *et al.*), giving residents less experience in code blue response.
- Simulation-based education programs have been used to improve residents' performance during simulated Advanced Cardiovascular Life Support (ACLS) events and increase maintenance of ACLS skills (Yang *et al.*)

Study Objectives

- Evaluate the impact of mock code blue simulation on internal medicine residents' self-perceived confidence in their ability to lead a response to an in-hospital cardiopulmonary arrest.
- Evaluate the impact of mock code blue simulation on internal medicine residents' knowledge of ACLS guidelines for in-hospital cardiopulmonary arrest.

Methods

- **Confidence Survey**:
  5-point Likert scale scored survey, adapted from Schaik *et al.,* designed to assess self-perceived confidence in technical and leadership skills.
- **Knowledge Survey:** 4-stem multiple choice question survey designed to assess clinical knowledge of ACLS cardiopulmonary resuscitation event response guidelines.

Results

Confidence Survey

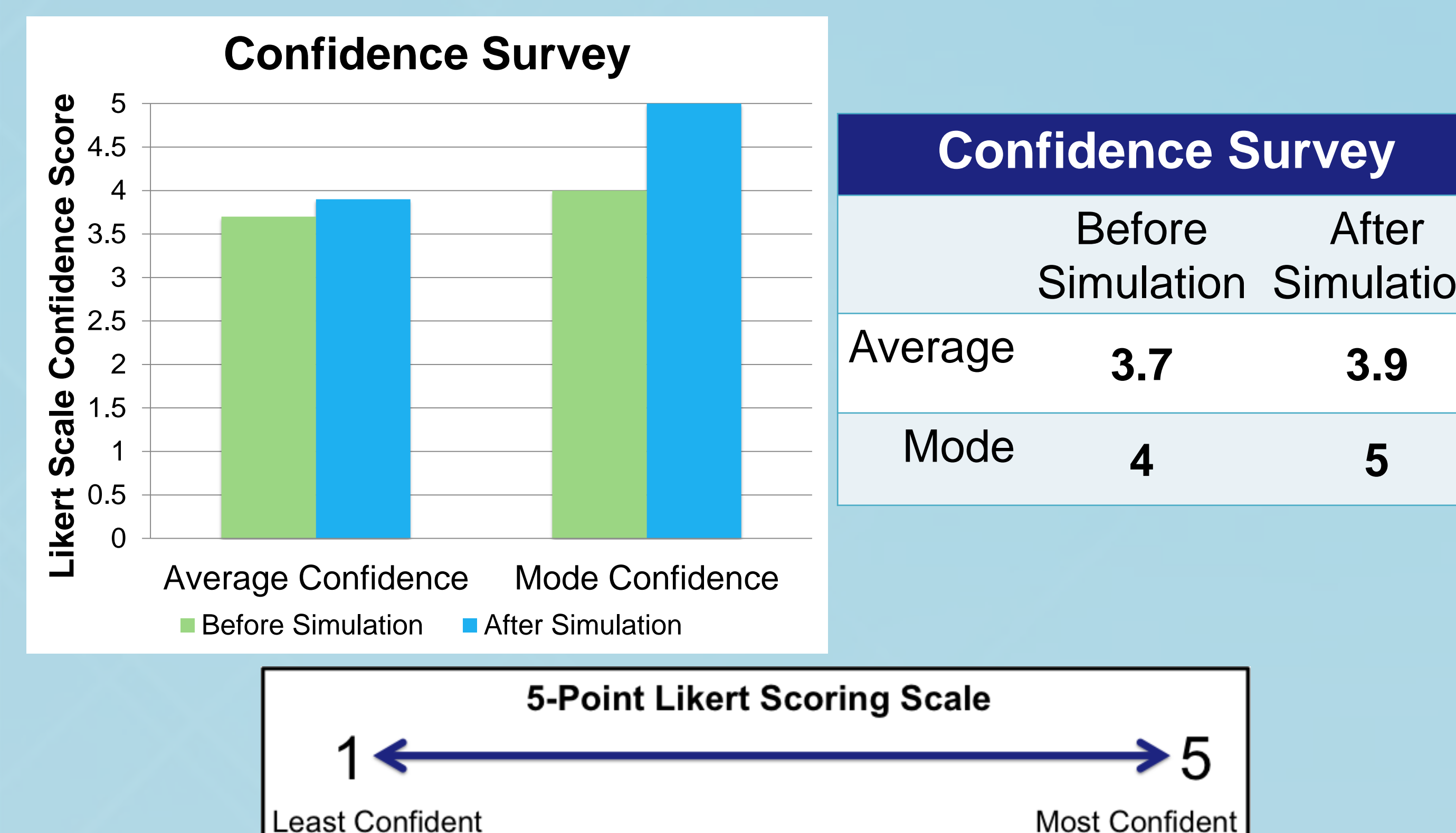| Confidence Survey		
	Before Simulation	After Simulation
Average	3.7	3.9
Mode	4	5

Figure 1. Confidence Survey Results. Descriptive statistics calculated based on self-perceived confidence scores on a 5-point Likert scoring scale show an increase in both average and mode confidence following simulation.
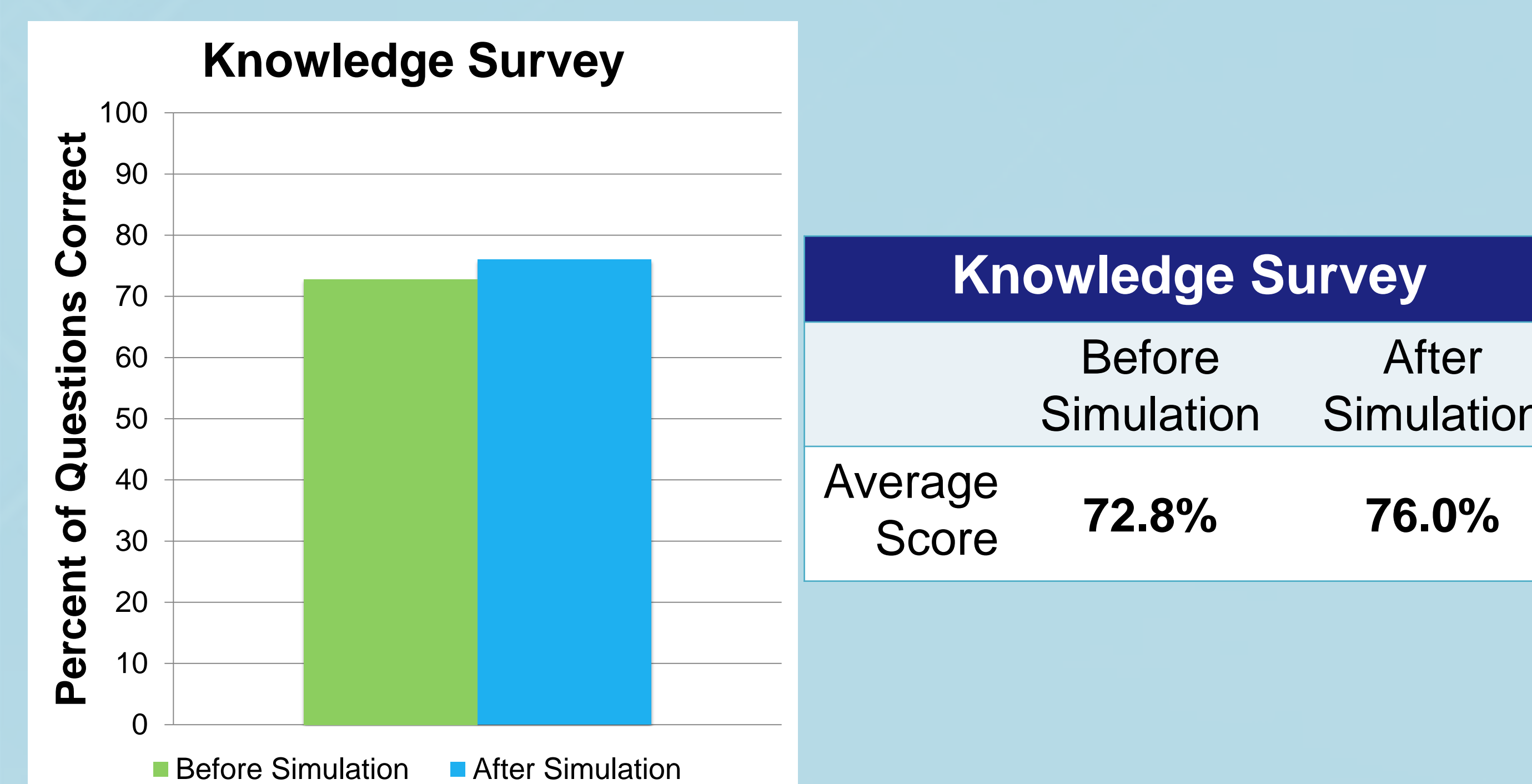
Knowledge Survey

Knowledge Survey		
	Before Simulation	After Simulation
Average Score	72.8%	76.0%

Figure 2. Knowledge Survey Results. Descriptive statistics calculated based on participant responses to ACLS clinical knowledge survey questions show an increase in average survey score following simulation.

Summary

- Resident confidence increased after simulation in the technical skills of placing IO and CVC lines, operating defibrillators, and knowledge of medications for cardiac arrhythmias. Confidence increased in the leadership skills of running the code as team leader, delegating tasks, and supervising team members.
- The percent of correct responses on the ACLS knowledge survey increased after simulation for all questions regarding medication selection and dosing. After simulation 100% of residents correctly answered all questions regarding Basic Life Support (BLS) protocol and reading rhythm strips.

Conclusion

Internal medicine residents report increased confidence and show improved clinical knowledge in responding to in-hospital cardiopulmonary resuscitation events following a mock code blue simulation experience.

Take Home Message

Increased confidence and clinical knowledge retention following simulation suggests that mock code blue training can be used to improve residents' leadership skills and adherence to ACLS protocols, ultimately improving patient outcomes during in-hospital cardiopulmonary arrests.

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