Appendix 2:

Table 1: Course Details

	Details
Schedule	Courses offered 4-5 times monthly for a total of 58 courses. Course length: 3.5 hours (4 total simulations, approximately 45 min each inclusive of scenario and debrief).
Knowledge Gaps Tested	1. Difficult airway management/invasive airway placement, 2. Advanced cardiopulmonary life support (ACLS) management and team leadership/membership, 3. Perioperative management of coronary stents/dual anti-platelet therapy (DAPT), 4. Side-site verification, 5. Anesthesia machine failures, and 6. Crisis resource management.
Participants	6 participants took each course and consisted of FAs *or* CRNAs from the 5 hospitals. Teams of 3 participants kept together for all scenarios and worked as a group throughout the scenario. FAs and CRNAs separated.
Instructors	Each group of 6 taught by 4 board certified anesthesiologists from a pool of 11 simulation faculty. Quarterly meetings held with all instructors to ensure quality control of the material taught as well as to standardize the debriefing for each scenario.
Raters	1 real time rater (RTR) for each group to evaluate 12 specified medical/technical and non-technical critical performance items (CPIs). Each of the 5 raters received training on the CPIs in a two hour mandatory course to emphasize each point and what behaviors to look for during each specific scenario. CPIs were developed using a Delphi Method with program directors and HIC representatives. CPIs were to be recorded as individual participant ratings.
Post-Course Information	Each participant was given a survey to evaluate the usefulness of the course and seek potential improvements for future learning. All participants were also tasked with completing 3 Practice Improvement Plans (PIPs) within 30 days of the course in order to get credit. The main objective of the PIPs was to encourage each individual to apply the learning objectives from the course to their personal practice and find areas for improvement.

FA=Faculty anesthesiologist

CRNA=Certified registered nurse anesthetist

Table 2: Scenario Learning Objectives and Embedded Critical Performance Items (CPIs)*

Scenario	Learning Objectives
Jet Ventilation	-Realize that make-shift JV devices will not work well as true JV's secondary to circuit compliance* -Demonstrate proper use of jet ventilation equipment once a needle cricothyrotomy is established* -Accurately describe the updated ASA Difficult Airway Algorithm (2013) during debriefing process* -Learn where difficult airway equipment can be obtained in a given department* -Demonstrate acceptable non-technical skills required to manage a crisis (team leadership, membership, communication, division of workload, general crisis resource management skills); *special emphasis on resource management and communication with perioperative team regarding resource needs when those resources are unfamiliar to the team members, importance of planning for tracheotomy*
ACLS/PACU Ischemia	-Properly deploy care that is in compliance with ACLS guidelines for VT, Vfib, PEA and Asystole, as well as myocardial ischemia & ST segment elevation myocardial infarction (acceptable management requires appropriate diagnosis, drug, dose and sequence were all present)* -Demonstrate the ability to operate a bi-phasic defibrillator in order to deliver electric countershock where needed* -Demonstrate the ability to provide a constructive intervention when a team member begins to suggest incorrect interventions during a cardiac arrest* -Performs ACLS in a manner acceptable (to the RTR) and likely not to cause additional harm (Group Rating) -Demonstrate acceptable non-technical skills required to manage a crisis (team leadership, membership, communication, division of workload, general crisis resource management skills); *special emphasis on communication and teamwork during PACU codes*
Drug Eluting Coronary Stents/DAPT	-Demonstrate knowledge of current AHA/ACC guidelines for preoperative management of coronary stents by delaying an elective surgical case in a patient inappropriately off DAPT* -Demonstrate a systems-based competency of providing the guidelines regarding DAPT when asked* -Describe approach if patient does need to proceed to the operating room -Communication between all members of the treatment team as crucial to avoiding patient harm --Demonstrate acceptable non-technical skills required to manage a crisis (team leadership, membership, communication, division of workload, general crisis resource management skills); *special emphasis on professionalism and communication with patient and surgical colleagues*

Oxygen Pipeline Contamination	-Appreciate the importance of preoperative evaluation and site-side verification in addition to planned time-outs and surgical verification for all surgical procedures* -Promptly (<3 minutes) recognize the delivery of hypoxic gas mixture when a patient is having a severe hypoxemic cardiac arrest and several confounding anesthesia machine alarms and distractors are present* -Describe oxygen pipeline pressures and strategies for managing a contaminated oxygen source; recognize systems errors and strategies to avoid problems with delivery of oxygen* -Manage intraoperative oxygen pipeline contamination and failure -Demonstrate acceptable non-technical skills required to manage a crisis (team leadership, membership, communication, division of workload, general crisis resource management skills); *special emphasis on workload management*

*- Indicates that item was rated as a CPI for the scenario.