PACU Handoff Improvement Project

We have evaluated the use of simulation-based training to improve communication and coordination during patient care transitions (i.e., handoffs) between anesthesia providers (AP) and post-anesthesia care unit (PACU) nurses (RN). Using a multiple baseline staggered entry prospective cohort design with repeated measures, a training and process improvement intervention was introduced into an adult and pediatric PACU. Our hypothesis was that the simulation-based intervention would improve the quality of patient care handoffs, enhance the PACUs’ culture of communication, and improve quality of patient care. A handoff quality evaluation instrument was iteratively developed and validated. Baseline data including observations and scoring of actual PACU handoffs and a web-based communication culture survey (derived from the Safety Attitudes Questionnaire) were obtained in both PACU. The intervention included a didactic webinar, a new handoff report tool, and a 2-hour simulation-based training session that used standardized patients and standardized clinicians, manikin simulators, and facilitated debriefing. Training included both technical (what should be said) and behavioral (how to say it) objectives. Trained observers scored actual handoffs over a 12-month period with monthly feedback to PACUs on their overall handoff performance. The adult PACU personnel received training first and then received a “refresher” 6 months later. Baseline data pre-training were stable in both PACUs.

A total of 130 anesthesia residents and CRNA, and 151 PACU nurses have been trained thus far. Clinicians’ evaluations of the simulation-based training sessions averaged 7.8 out of a maximum of 9. Following training, the quality of actual handoffs improved significantly with the preponderance of handoffs shifting from no better than “somewhat effective” (global score of ≤2 out of 5) to at least “moderately effective” (≥3) in both PACUs. Results from the two PACU are shown below in Figures 1 and 2.

The project includes several additional pre- vs. post-intervention performance measures: blinded video analysis of within subject simulated handoffs, a communication culture survey, and aggregate PACU patient outcomes. We are currently obtaining the final of three samples of the communication culture survey. We have just started the structured review and scoring of the pre-vs. post- training intervention videos. PACU outcome data will be aggregated for a 3-month period before training started and a 3-month period following training (1 year later). Finally, we plan to train 16 new anesthesia (CA1) residents and 16 new or previously untrained PACU RN this Fall using a slightly less resource-intensive approach (i.e., faculty facilitated review of videotaped training handoffs rather than direct participation by trainees with standardized clinicians in the same scripted handoffs) and comparing the results with last year’s CA1 resident class.

The results of this project will inform the design of future handoff training initiatives.
Figure 1. Global Handoff Effectiveness Scores in the Adult (VUH MOR) PACU

Figure 2. Global Handoff Effectiveness Scores in the Pediatric (VCH) PACU