

The Effect of Standardized Open Surgical Skills Curriculum on First-Year Surgical Resident Performance

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Introduction: Surgical residency training is a comprehensive education in clinical and operative skills. Incoming trainees have a wide variety of experiences and skills in basic surgical open skills such as knot tying and suturing. In an effort to develop and ensure competency of first-year surgical residents in basic surgical open skills, we implemented an open surgical skills curriculum comprised of 11 tasks in suturing and knot tying. **Methods:** Using the Texas Association of Surgical Skills Laboratories (TASSL) Open Skills Curriculum, 24 first-year residents at UTHSCSA underwent an observed, timed baseline test on each of the eleven tasks in the curriculum to determine a baseline score. Residents then followed a ten-week self-paced progression through the curriculum to reach preset goal scores for each task. Residents recorded each practice attempt. Each resident completed tasks in a sequential order and were allowed to progress to the next task in the series when he/she achieved the preset proficiency goal. Following completion of all tasks, the residents underwent observed, timed post-testing on the curriculum to ensure achievement of the goal score on each task. **Results:** On baseline testing, no more than 16.7% of residents tested achieved proficiency on any one task (range: 4.2% to 16.7%) and no resident was proficient on more than six tasks (range: zero to six tasks). During self-paced practice, the mean number of attempts per task to achieve proficiency ranged from five to 12 attempts. On post-testing, 71% of the residents achieved proficiency on all tasks, 12.5% achieved proficiency on ten out of 11 tasks, and 16.5% achieved proficiency on nine out of 11 tasks. The aggregate mean scores on every task had statistically significant improvement from baseline testing to post-testing using paired t-tests ($p < 0.01$) as well as a narrowing of the standard deviation from baseline to post-testing. **Conclusion:** A standardized curriculum on basic open surgical skills training in knot tying and suturing can greatly improve and reduce variability in resident performance on these skills.