

Utility of a Standardized Fourth-Year Medical Student Surgical Preparatory Curriculum: Program Director Perceptions

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OBJECTIVE: Each July, surgical interns arrive to residency with variable skills, knowledge, and clinical experience. To standardize and improve intern preparation, the American College of Surgeons (ACS), Association of Program Directors in Surgery, and Association for Surgical Education developed a pilot Resident Prep Curriculum (RPC). To date, no studies have analyzed these efforts. We aimed to discern program director (PD) perceptions of RPC participants as an initial means of analysis.

DESIGN: A 17-question PD survey was designed to assess variable preparedness and performance between RPC participants and nonparticipants. PDs reporting matriculation of a RPC participant were first asked to globally compare the participant to nonparticipants. Using a 5-point Likert scale, PDs were then asked to compare participants to nonparticipants in 7 distinct categories, which were based on course objectives that parallel the Accreditation Council for Graduate Medical Education competencies. Descriptive statistics and tests of significance were performed to evaluate the responses.

PARTICIPANTS: The survey was sent via electronic mail to 245 accredited general surgery residency PDs.

RESULTS: A total of 103 (42.0%) PDs responded. Of the respondents, 27 (26.2%) reported matriculation of a RPC participant. When assessing efficiency in intern responsibilities, 26.9% of PDs noted participant advantage, and when

gauging comfort in intern-role, 25.9% of PDs reported participant benefit. Across the 7 queried course objectives, there was a statistically significant improvement in the technical skill domain ($p = 0.007$) and a nonsignificant trend toward improvement in several of the other 6 domains: interpersonal skills ($p = 0.055$), medical knowledge ($p = 0.067$), patient care ($p = 0.081$), systems-based practice ($p = 0.085$), problem-based learning ($p = 0.106$), and professionalism ($p = 0.357$).

CONCLUSIONS: PD perceptions revealed global advantage to RPC participation. Furthermore, 1/4 of the time and specific competency performance showed substantial improved performance in technical skills. Survey timing and washout may bias this study, and the results should be compared to learner and senior resident perceptions, where observations may be more granular. (J Surg Ed ■■■■-■■■. Published by Elsevier Inc on behalf of the Association of Program Directors in Surgery)

KEY WORDS: intern, surgery, residency, resident prep curriculum, resident preparatory course, medical student, education

COMPETENCIES: Surgical residency, intern preparatory course, medical student education, patient care, medical knowledge

INTRODUCTION

Surgical internship requires competence and confidence from the start, so as to not compromise patient care. Each July, given that medical school educational experiences and exposure differ, interns matriculate to residency with

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variable preparedness, knowledge and technical skill.¹ To offset the differential readiness, supervision of clinical activities would be preferred; however, research reveals direct oversight of intern day-to-day activities is often limited.² In an effort to minimize the readiness differential and ease the transition, a national surgical residency preparatory curriculum was developed with the intention to accelerate readiness, responsibility and accountability of interns. Curriculum development was supported by the American College of Surgeons (ACS), the Association of Program Directors in Surgery (APDS), and the Association for Surgical Education (ASE).³ The modular preparatory curriculum, termed “Resident Prep Curriculum” (RPC),⁴ outlined specific goals and objectives that are explicitly tied to the Accreditation Council on Graduate Medical Education’s (ACGME) first-year resident supervision requirements.⁵ A special communication regarding the novel and national initiative was jointly published at end-of-year 2014 in a multitude of wide reaching surgical journals, inclusive of the *Journal of Surgical Education*, *Annals of Surgery*, *American Surgeon*, *World Journal of Surgery*, *American Journal of Surgery*, *Surgery*, *Journal of the ACS*, and the *Journal of the American Medical Association Surgery*.^{3,6-12} The curriculum was piloted in 39 US medical schools in 2014 and 55 institutions in 2015.⁴ In 2016, the curriculum was endorsed for global use. Despite increasing use and evolving endorsement, outcomes of the implementation of the RPC remain unknown. That is, to date, no studies have analyzed these efforts. As an initial means for evaluation of the RPC, we sought to garner the perceptions of program directors (PDs) as an outcome surrogate.

MATERIALS AND METHODS

A 17-question, at maximum, mixed-methods survey was designed by the authors as a means to assess PD perceptions of intern preparedness and performance of RPC participants in comparison to nonparticipants ([Appendix](#)). The questions were vetted through the Surgical Education Research Forum and the RPC research committee. The survey first assessed program demographics, including program affiliation (community- vs academic-based), and program size (number of total and categorical surgical interns). PDs were then asked if their residency provided an in-house preparatory curriculum to matriculated interns, and if their affiliated medical school piloted the RPC. Next, the survey queried “Within your current intern class, do you have a resident who completed an intern preparatory course at one of the institutions piloting the ACS/APDS/ASE modular curriculum?” If the PD responded “no,” the survey was complete. If the PD responded “yes,” he/she was then asked a series of additional questions. PDs were first asked to quantify the number of matriculating interns who have completed the RPC. Next, they were asked to globally

compare the participant to nonparticipants in regard to comfort in intern-role and efficiency with intern-related responsibilities. Using a 5-point Likert scale, PDs were then asked to compare participant to nonparticipants in 7 distinct categories, which were based on course objectives that parallel the ACGME competencies. Queried areas included patient care, medical knowledge, technical skill, professionalism, interpersonal skill, practice-based learning, and system-based practice. Lastly, PD survey respondents were given the opportunity to provide free-text comments regarding the RPC participant(s).

The APDS website was used to assemble a list of e-mail addresses of the current general surgery PDs. The survey was subsequently sent, via electronic mail, to 245 accredited general surgery residency PDs. The 3 subsequent e-mail reminders were sent to PDs who did not respond. The survey was administered between December 2015 and January 2016. Electronic survey dissemination and study data collection and management were completed using REDCap electronic data capture tools hosted at Vanderbilt University.¹³ REDCap (Research Electronic Data Capture) is a secure, web-based application designed to support data capture for research studies, providing: (1) an intuitive interface for validated data entry; (2) audit trails for tracking data manipulation and export procedures; (3) automated export procedures for seamless data downloads to common statistical packages; and (4) procedures for importing data from external sources.

Data analysis was performed using Stata 14.0 (StataCorp, College Station, TX) and Excel 2013 (Microsoft, Redmond, WA). Descriptive statistics were performed for all survey questions. Each question/category was assessed and analyzed uniquely. Free-text responses were collated.

This study was exempted by the institutional review board at Vanderbilt University Medical Center.

RESULTS

Of the 245 PDs that were surveyed, 103 (42.0%) responded. Most of responding PDs (69.9%) reported academic affiliation. Median intern class size totaled 10 (interquartile range: 4-6) residents, consisting of a median of 5 (interquartile range: 4-6) categorical interns. A total of 86% of the respondents reported that their respective residency provided an in-house preparatory curriculum for matriculated interns ([Fig.](#)). Approximately 1/4 (23%) of PDs noted that their medical school affiliate was piloting the RPC.

Of the 103 respondents, 27 (26.2%) reported matriculation of a RPC participant. When assessing efficiency in intern responsibilities, 26.9% of PDs reported a differential advantage to RPC participants, and when gauging comfort in intern-role, 25.9% of PDs reported RPC participant benefit. Across the 7 queried course objectives, there was a statistically significant improvement in in the technical skill

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