REVIEW

Do Attending Surgeons and Residents See Eye To Eye? An Evaluation of the Accreditation Council For Graduate Medical Education Milestones in General Surgery Residency

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OBJECTIVE: The Accreditation Council for Graduate Medical Education requires accredited general surgery residencies to implement competency-based developmental outcomes in resident evaluations. Overall, 16 milestones are evaluated by a clinical competency committee (CCC). The milestones span 8 domains of surgical practice and 6 Accreditation Council for Graduate Medical Education clinical competencies. The highest level suggests preparedness for independent practice. Our objective was to compare self-assessments and committee evaluations within the milestone framework.

STUDY DESIGN: All residents underwent semiannual evaluations from 2013 to 2015. Residents independently completed a self-assessment using the milestones. The CCC completed the milestones document using resident evaluations and consensus opinion of committee members. Assessment differences were calculated for each evaluation. A negative value indicated that the residents evaluated themselves at a lower level than the committee. Major assessment disparities were defined as >0.5 on a 4-point scale.

SETTING: An independent academic medical center.

PARTICIPANTS: General surgery residents.

RESULTS: Overall, 20 residents participated; 7 were female. In total, 5 (7%) evaluations had a mean overall assessment difference >0.5, whereas 6 (8%) had a difference <-0.5. Residents evaluated themselves lower than the committee with a median assessment difference of -0.06 [-0.25 to 0.16] ($p = 0.041$). Evaluations were similar across surgical domains. Negative self-evaluations were more common for medical knowledge (-0.25 [-0.25 to 0.25], $p = 0.025$). Female residents had 2% positive and 13% negative major assessment disparity rates versus 10% positive and 9% negative rates among male residents. Postgraduate year III residents had 12% positive and 4% negative major disparity rates; all other years had higher negative than positive rates.

CONCLUSIONS: Surgery residents within our program demonstrated adequate self-awareness, with most self-evaluations falling within a half level of the CCC report. This self-awareness was consistent across surgical domains and most clinical competencies. Residents perceived a lower level of medical knowledge than the CCC. Subgroup analysis revealed interesting trends in the effects of sex, postgraduate year level, and academic year timing, which will take additional study to fully delineate. (J Surg Ed ■:■■■-■■■. © 2016 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: resident evaluation, milestones, competencies, omains, clinical competency committee

COMPETENCIES: Practice-Based Learning and Improvement, Interpersonal and Communications Skills, Professionalism, Systems-based Practice

INTRODUCTION

In July 2014, the Accreditation Council for Graduate Medical Education (ACGME) implemented a requirement

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that all accredited surgery residency programs complete a milestones-based semiannual report for all residents. As a key component of the Next Accreditation System, educational milestones were developed for each specialty to represent "specific developmental steps achieved at designated time points during the continuum of graduate medical education."[1] The General Surgery Milestones Project represented a joint venture between the ACGME and the American Board of Surgery to develop a set of milestones that specifically targeted the educational goals of general surgery residents. During the development process, the group outlined the formation of a clinical competency committee (CCC) to evaluate a resident's performance twice annually. The goals, methods of development, validation, and recommended implementation of the general surgery milestones have been described.[1]

A total of 16 general surgery milestones were created, each of which can be classified according to the 6 ACGME core competencies: patient care, medical knowledge, systems-based practice, practice-based learning and improvement, interpersonal and communication skills, and professionalism. The milestones were personalized to general surgery by the definition of 8 distinct domains that are desirable in surgical practice. These domains include care for diseases and conditions, coordination of care, performance of operations and procedures, self-directed learning, teaching, improvement of care, maintenance of physical and emotional health, and performance of administrative tasks.[2] Each milestone contains narratives outlining 4 levels of performance, with allowance to select between levels if a resident displays some but not all of the qualities ascribed to the next level. A critical deficiency level (0) is also included with each milestone.

In an attempt to emphasize and develop the skills required for accurate self-assessment, our institution has mandated annual completion of surveys regarding knowledge, technical skills, and clinical skills for the past 8 years. Although the topics covered were similar to those evaluated by attending surgeons, the forms were different, which limited the ability to draw direct comparisons. We have transitioned to a milestones-based resident self-assessment as part of the semiannual review process, with the hope of providing more precise feedback and allowing for more concrete reflection on deviations between self-assessment and assessment by those tasked with resident education. The self-assessment is performed by each resident and is to be completed before the CCC performance evaluation. The aim of this study was to assess the correspondence between resident self-assessment and committee evaluation within the milestones framework.

MATERIALS AND METHODS

All residents in an independent academic medical center general surgery residency program underwent semiannual milestone evaluation from October 2013 through October 2015. Residents participated in monthly rotations, 75% of which entailed assignment to 1 of 4 general surgery teams overseen by 14 attending surgeons. The CCC, which consists of the residency program director and 6 attending surgeons with representation from each team, reviewed each resident independently, while considering a wide range of evaluations including rotation-specific, nursing, ancillary staff, operating room staff, and patient feedback. Following review, the committee arrived at a consensus evaluation regarding milestone achievement. In addition, each resident was asked to perform a self-assessment of progression through the milestones.

Numerical values from 1 to 4 were assigned to each of the levels of developmental progression within a milestone, with a value of 0 assigned to any critical deficiencies identified. If a resident was evaluated to lie between levels, a value of 0.5 was added to the last level fully attained. Assessment differences were calculated by subtracting the CCC evaluation value from the resident's self-assessment. If the result is negative, then it would indicate that a resident believes he/she has achieved a lower level than what the CCC concluded after comprehensive review. Assessment differences were calculated for each evaluation event globally, within each surgical domain, and within each ACGME core competency. The nonparametric sign test was used to identify any systematic differences between self-evaluations and corresponding CCC evaluations; a significant sign test suggests that residents systematically rated themselves either lower or higher than the CCC.

Subgroup analysis was performed to assess for factors that may influence rates of major assessment disparity. Major assessment disparity was defined as disagreement between self-assessment and committee evaluation of greater than one-half level of development (>0.5). Factors analyzed included resident sex, postgraduate year (PGY) level of training, and timing during the academic year. The association between major assessment disparities and various demographic factors was examined using the nonparametric chi-square or Fisher exact test, as appropriate. $p < 0.05$ was considered significant for all tests. All statistical analyses were performed using SAS 9.4 (SAS Institute Inc., Cary, NC).

RESULTS

A total of 20 residents participated over the 2.5-year study period; 7 (35%) of whom were female. A total of 73 evaluations were considered, as our residency program was concomitantly fulfilling an approved increase in resident complement. During the 2013 to 2014 academic year, 14 residents participated, generating 28 semiannual evaluations. The 2014 to 2015 academic year included 15 residents which generated 30 evaluations, and the fall