

A Milestone-Based Evaluation System—The Cure for Grade Inflation?

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PURPOSE: Controversy exists over the optimal use of the Milestones in the process of resident evaluation and feedback. We sought to evaluate the performance of a Milestones-based feedback system in comparison to a traditional model.

METHODS: The traditional evaluation system (TES) consisted of a generic 16-item survey using a 5-point Likert scale ranging from 1 to 5, and a free-text comments section. The Milestones-based evaluation system (MBES) was launched in July 2014, ranging from 0 to 4. Individual milestones were mapped to rotations based on resident educational goals by postgraduate year (PGY). The MBES consisted of a survey with a maximum of 7 items, followed by a free-text comment section. Within each evaluation system, an overall composite score was calculated for each categorical general surgical resident. To scale the 2 systems for comparison, TES scores were adjusted downward by 1 point. Descriptive statistics were performed. Univariate analysis was performed with the Wilcoxon signed-rank test. A test for trend across PGY was used for the MBES only.

RESULTS: In the traditional system, the median score was 3.66 (range: 3.2-4.0). There was no meaningful difference in the median score by PGY. In the new system, the median score was 2.69 (range: 1.5-3.7, $p < 0.01$). The median score differed across PGY and increased by PGY of training ($p < 0.01$). There was an increase in differences between median scores by PGY.

CONCLUSIONS: On using the milestones to facilitate faculty evaluation of resident knowledge and skill, there was a trend in increasing score by PGY of training. In the MBES, scores could be used to better discriminate resident skill and knowledge levels and resulted in improved differentiation in scoring by PGY. The use of the milestones as a basis for evaluation enabled the program to provide more meaningful feedback to residents and represents an improvement in surgical education. (J Surg Ed 72:e218-e225.

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KEY WORDS: Milestones, resident evaluation, feedback, Likert, competencies, Next Accreditation System

COMPETENCIES: Patient Care, Medical Knowledge, Professionalism, Interpersonal and Communication Skills, Practice-Based Learning and Improvement, Systems-Based Practice

INTRODUCTION

The Milestones are “competency-based developmental outcomes (e.g., knowledge, skills, attitude, and performance) that can be demonstrated progressively by residents and fellows from the beginning of their education through graduation to unsupervised practice of their specialties.”¹ The Milestones, which are specialty specific, were developed as a means of assessing resident achievement of the Accreditation Council for Graduate Resident Medical Education (ACGME) clinical competencies. Established in 1999, the 6 ACGME clinical competencies formed the basis of the Next Accreditation System, which was implemented in general surgery in 2014.²

Under the Next Accreditation System, residency programs report resident Milestones data to the Residency Review Committee for Surgery every 6 months. The ACGME then generates reports for review by the individual residents. The primary goal of the Milestones is, therefore, to inform the ACGME on resident progression across the training period as a measure of the programs' ability to develop surgeons, and to inform residents on their level of performance. Indirectly, the system also enables clear communication across teachers and learners regarding the skills required to achieve long-term goals of excellence in the defined domains of surgical care.

Because the Milestones were developed to measure residency program success, controversy exists over the use of the Milestones in the process of resident evaluation and feedback. Traditional assessment methods do not meet ACGME quality standards.³ We sought to evaluate the performance of a Milestones-based evaluation (MBES)

system in comparison to a traditional model to determine the optimal format for providing level-appropriate and sensitive feedback for residents.

MATERIALS AND METHODS

This study was conducted using 2 distinct feedback systems at a university-based residency program. Evaluations for all categorical general surgery residents were studied.

Traditional Evaluation System

The traditional evaluation system (TES) was a global resident assessment completed online by faculty and senior residents at the completion of each rotation. The 16-item survey used a 5-point Likert scale for generic competency-based items and included specialty-specific skills questions in a binary form, as well as a general free-text comments section. The survey consisted of nonrotation-specific questions only. The TES Likert scale had a minimum score of 1 and a maximum score of 5.

A sample TES form can be seen in [Figure 1](#).

Description: Faculty Eval of Residents 07.08 (10.31.2007)
 Evaluator: Faculty
 Evaluatee: Resident
 Active: Yes
 Service Category: EOS
 Clinical Year: 5

Level of Contact with Evaluatee N/A Minimal Moderate Frequent

Patient Care

Beside Manner

Exceptional	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Adequate						Poor

Clinical Judgment

Outstanding	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Good						Poor

Technical Skills

Outstanding	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Good						Poor

Ability to communicate with other healthcare professionals.

Exceptional	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Adequate						Poor

Medical Knowledge

Demonstrates an ability to think analytically

Always	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Sometimes						Never

Fund of knowledge/self-education

Exceptional	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Adequate						Inadequate

Practice Based Learning and Improvement

Application of current medical information to patient care

Outstanding	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Good						Poor

Facilitates learning of team members

Always	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Sometimes						Never

Interpersonal and Communication Skills

Maintenance of Patient-Doctor Relationship

Outstanding	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Good						Poor

Team Player

Always	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Sometimes						Never

Professionalism

Demonstrates sensitivity to patients' culture, age, gender and disabilities

Always	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Sometimes						Never

Commitment to Patient Care

Exceptional	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Adequate						Inadequate

Systems-Based Practice

Advocate for Quality Patient Care

Always	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Sometimes						Never

Practice Appropriate Resource Allocation

Always	<input type="radio"/> 5	<input type="radio"/> 4	<input type="radio"/> 3	<input type="radio"/> 2	<input type="radio"/> 1	<input checked="" type="radio"/> n/a
Sometimes						Never

Service Specific Skills (PGYS)

Does the resident understand the pre-op work up and post-op management (pathway) of esophagectomy, adrenalectomy, bowel resection, thyroid, parathyroid, hepatic resection patients? Yes No N/A

Does the resident understand the work-up and management of a patient with sarcoma? Yes No N/A

Is the resident proficient at laparoscopic and open adrenalectomy? Yes No N/A

Is the resident proficient at parathyroidectomy and thyroidectomy? Yes No N/A

Is the resident proficient at laparoscopic and open splenectomy? Yes No N/A

Is the resident proficient at esophagectomy and pancreatotomy? Yes No N/A

Is the resident proficient at isolated limb perfusion? Yes No N/A

Is the resident proficient at sarcoma resection? Yes No N/A

Administration

By completion of this clinical year, do you feel this individual will be able to progress to the next clinical year successfully? Yes No

Overall Performance

Comment:

FIGURE 1. Sample traditional evaluation system form. Sample traditional evaluation form for the Endocrine and Oncologic Surgery rotation.

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