

Title: Resident Self-Assessment and Faculty Assessment Using the Internal Medicine Milestones: Evaluating Trends by Post-Graduate Year and Gender

School and Department: CU School of Medicine, General Internal Medicine

Authors: Yasmin Sacro, MD, Krithika Suresh, PhD, Erin Murphy, MD, Janet Corral, MD, Karen Chacko, MD.

Poster category: Assessment / Evaluation

Introduction:

Self-assessment is essential to lifelong professional development. However, reliability of resident self assessment in Internal Medicine residency has not been studied to date. Prior studies in surgical residencies showed resident and faculty matched assessments are moderately accurate (Stahl J Surg 2021) and that women are at risk of underestimating their abilities in comparison to their male surgical colleagues (Minter J Surg 2005). We investigated the concordance of resident self-assessment in comparison to faculty assessment at a large academic internal medicine program. Our aim was to identify themes for milestone areas of strength and improvement as assessed by resident and faculty agreement at each post-graduate year of training. We also examined whether there are gender differences in resident milestone self-assessment.

Methods:

Study time period was spring 2016 to winter 2018, involving 346 internal medicine residents and 16 faculty evaluators who served as Assistant Program Directors or Program Director at a single site. From the ACGME Internal Medicine Milestones 1.0 list of 22 competencies (categorized within 6 domains), residents and faculty evaluators independently identified two areas of strength and two areas of improvement, and then met to decide on areas of strength and improvement jointly at semi-annual meetings. The resident-evaluator assessments were compared individually to determine extent to which residents are able to self-evaluate. Agreement was measured using kappa (κ), where agreement was defined as the resident indicating at least one of the same milestones (or domains) indicated by the faculty evaluator. κ -coefficients range from 0 (no agreement) to 1 (complete agreement), correcting for chance agreement between two independent raters. *

Results:

“Individual” indicates agreement on the individual competencies; “Domain” indicates agreement on domain. On the individual agreement, we see that there is fair agreement between the evaluator and evaluatee for both strengths and areas of improvement. We see greater agreement on *domain* areas.

There was moderate agreement between resident and faculty identified domains for strengths and areas of improvement for internal medicine residents ($\kappa = 0.475$ for strengths, $\kappa = 0.465$ for areas of

improvement*). The top resident-faculty concordant strength for PGY-1 internal medicine residents was Patient Care 1: gathering and synthesizing essential and accurate information to define each patient's problem (18.9% of faculty pairs); for PGY-2 was Patient Care 2: develops and achieves comprehensive management plans for each patient (20.7%); for PGY-3 was Patient Care 3: manages each patient with progressive responsibility and independence (30.1%)

The top resident-faculty concordant area of improvement for PGY-1 and PGY-2 internal medicine residents was Patient Care 3: manages each patient with progressive responsibility and independence (20.3% and 15.6%, respectively); for PGY-3 was Systems Based Practices 3: identifies forces that impact the cost of health care, and advocates for, and practices cost-effective care (17.9%).

When conditioning on gender of resident for domain of milestone area of improvement, women residents improved at matching the faculty evaluator as they progressed in post-graduate year training ($\kappa = 0.256$ in PGY-1; 0.356 in PGY-2; 0.462 in PGY-3). Conversely for male residents, agreement with faculty evaluators on domain of milestone area of improvement was greater in PGY-1 year but declined as they progressed in post-graduate year ($\kappa = 0.487$ in PGY-1; 0.409 in PGY-2; 0.284 in PGY-3).

Discussion

Patient care is a foundational strength that both residents and faculty had the most concordance in assessment throughout internal medicine training. Once independent patient care is no longer a top concern for improvement, resident focus broadens to the larger picture of systems-based practices. The gendered trends of resident-faculty concordance for domains of improvement may be taken into consideration when providing feedback to residents. Future studies should take into account the new ACGME Milestones 2.0 which include other systems-based changes (digital health) and reflective practice and commitment to personal growth, further emphasizing the importance of resident self-assessment reliability.

Stahl et al. Entustable Professional Activities in General Surgery: Trends in Self Assessment. J Surg Educ. Nov-Dec 2020;77(6):1562-1567. [10.1016/j.jsurg.2020.05.005](https://doi.org/10.1016/j.jsurg.2020.05.005) Epub 2020 Jun 13.

Minter et al. Gender differences in the self-assessment of surgical residents. Am J Surg. 2005 Jun;189(6):647-50. DOI: [10.1016/j.amjsurg.2004.11.035](https://doi.org/10.1016/j.amjsurg.2004.11.035)

*The interpretation of κ values is given by: 0-0.2 [slight agreement]; 0.21-0.4 [fair agreement]; 0.41-0.6 [moderate agreement]; 0.61-0.80 [substantial agreement]; 0.81-1 [almost perfect agreement]