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How General Surgery Milestones and the Clinical Competency Committee can be Successfully Leveraged to Address Gaps in Assessment

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Abstract

A critical deficiency in teaching is a developmental concern as outlined in the practice domain of the Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Surgery (ABS) Milestones Project. For a university hospital general surgery residency program that integrates and relies on resident teaching and learning across the training spectrum, ineffective teaching is a significant educational problem. Moreover, at the heart of safe, informed, and collaborative surgical practice is teaching. Effective resident teaching skills can improve the overall educational environment of a program remarkably, just as poor teaching skills can insidiously degrade the educational culture of a program. Once classified as a critical deficiency, avoidance of the issue by either resident or training program is no longer an effective or reasonable option. Rigorous investment in the Clinical Competency Committee (CCC) process and establishment of a Milestones Assessment and Evaluation Committee has the potential to directly enhance the learning needs of residents and quality of teaching throughout the residency program.

Keywords: Milestones, Assessment, Evaluation, Clinical Competency Committee

1. Introduction

In 2014, the Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Surgery (ABS) championed general surgery milestones as a framework for assessing resident development for each of the core competencies.[1,2] Teaching is specifically addressed in the *practice-based learning and improvement* competency as one of sixteen general surgery sub-competencies–highlighting the key role of resident insight and reflection in improving their own teaching, and clearly giving it priority as a necessary skill set in residency training and beyond. Until recently, teaching skills and effectiveness were rarely evaluated specifically in surgical programs.

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Determining the milestone level of a trainee for each sub-competency equips faculty to appropriately direct feedback and improvement opportunities for optimal resident growth.[2-4] Milestones offer a transparent framework on which to build assessment instruments that benchmark the continuum of growth for each resident.[5-7] Transparency lends itself to enhanced reliability among multiple observers assessing behaviors in the workplace.[1,8]

In addition, transparency within the milestones serves learners in that they make expected performance behaviors explicit to the trainee. Feedback generated in this system has a greater potential to be used by a trainee as impetus for professional improvement and self-directed assessment-seeking behavior.[9,10] The goal of this manuscript is to provide surgical faculty with a framework to map assessment tools to milestones in general surgery. We believe this work will benefit the Clinical Competency Committees (CCC) of other procedural-based specialties as well.

2. Clinical Competency Committee

The University of Michigan (UM) general surgery CCC encourages discussions pertaining to direct faculty observations and experiences with residents which contribute to a robust, meaningful consensus assessment. When planning for the meeting, all evaluation data are summarized and stored on a secure server along with additional information such as American Board of Surgery In-Training Examination (ABSITE) results, measures of regulatory professionalism such as conference attendance, and medical record completion. After thorough preparation in advance of the meeting, each faculty CCC member takes the lead on the evaluation of two residents, with contributions from all committee members informing and enhancing each review. An advantage of this in-depth process is that it allows for early detection and support of residents who are not progressing satisfactorily.[11]

During the course of CCC meetings, we observed particular milestones were predominately assessed with inferences, as there was disconnect between existing assessment tools and specific milestones criteria. Previous research has suggested that over time the CCC will likely find assessment gaps and will have to either formulate new assessment tools or find existing instruments to bridge these gaps.[12-17] A separate committee was created to address identified assessment needs in an effort to better assess residents based on anchors defined by the milestones.

3. Milestones Assessment and Evaluation Committee

In January 2014, the Milestones Assessment and Evaluation Committee (MAEC) grew out of the UM general surgery CCC. MAEC membership includes 9 residents and 10 faculty from each program within the UM Department of Surgery (cardiac surgery, general surgery, oral surgery, pediatric surgery, plastic surgery, surgical critical care, thoracic surgery, and vascular surgery).Although this particular cohesion of subspecialties is unique to UM, we encourage all procedural-based specialties on the potential benefit to forming a collaborative effort to address gaps in assessment across milestones within their respective programs. The multifold mandate of the MAEC serves to establish assessment and evaluation consistency across residency programs in the Department of Surgery by determining commonalities across program milestones, reviewing existing assessment tools in collaboration with each program's CCC, and identifying areas for improvement or gaps in assessment methods. Identification of areas for further development of assessment methods allows existing UM medical education assessment tools to be adapted, gives rise to the possibility of integrating tools with strong validity evidence, and the opportunity to create new tools to assess milestones in authentic workplace-based opportunities. This implementation of new assessment methods, in close alignment with the ACGME Milestones, ultimately provides further data to help inform CCC deliberations. It became clear that identifying and addressing gaps in assessment was the joint responsibility of the CCC and MAEC, respectively. This process provided residents with additional meaningful feedback for improvement to guide their progression along the milestones.

Teaching immediately came to the forefront as a practice domain not well assessed across surgical specialties.[18] After an exhaustive review of the relevant literature and available assessment, tools the MAEC monthly meetings resulted in the development of the Conference Teaching Assessment (CTA) (Appendix 1). This new assessment tool focuses on formal teaching opportunities across programs in the UM Department of Surgery, such as, morbidity and mortality conference, teaching conference, and journal club.

The CTA includes 6 domains of conference teaching (*Organization, Verbal Communication, Non-verbal Communication, AV Materials, Content, and Overall Assessment)* with corresponding descriptive anchors across a 5 level continuum.

For general surgery residents, a critical deficiency in teaching is a developmental concern as reflected in the ACGME and the ABS Milestones Project. For a university hospital residency program that integrates and relies on resident teaching and learning across the training spectrum, ineffective teaching is a significant educational problem.

Moreover, teaching is at the heart of safe, informed, and collaborative surgical practice. Effective resident teaching skills are imperative for the education of more junior residents and medical students.[19-21] Conversely, poor teaching skills can degrade the educational culture of a program. Once teaching is identified as a critical deficiency, avoidance of the issue by either individual residents or residency training programs is no longer an effective or reasonable option.

Originally, resident teaching was assessed as one item, on multiple forms, with descriptive anchors at either end of a 9 point scale. Assessments using the CTA provided additional robust feedback to residents to guide their growth in formal teaching settings. Additionally, the CTA included a category for overall assessment coupled with two free text sections for reviewers to provide structured feedback pertaining to the resident's strengths and potential areas for growth. Sample free text qualitative feedback provided to residents is provided in (Table 1).

Table 1: Conference Teaching Assessment: Sample Qualitative Feedback.

Resident Strengths	Resident Areas for Growth
Excellent medical communication (accurate technical language vs slang or jargon).	Needed more eye contact with audience. Don't wander around screen with mouse, unless use is needed for pointing.
Tells the story in an organized fashion, good voice projection; good ownership of complication w/ reflection, appropriate management in future.	Should try to look up at audience more during presentation instead of staring at computer screen.Tumor/endoscopy or CT-image would be helpful.
Slides had just the right information, appropriate language, nice pictures, good body language - released; good review of literature. Occasional use of "ah" or "um"	Uses a lot of "ah/oh", practice oratory skills for fluidity. Slides have a little too much information, font small, used a lot of technical terms that only some of audience understands.
Excellent slides - clear, concise, easy to read, very good verbal presentation - Above level of experience.	Relied on notes too much, highlights inconsequential material. Needs to move along in his presentation. Needs to read more to understand reasons behind why the operation is done. For technical complications, need to discuss how exactly to prevent the complication.

This sample feedback data generated by the CTA has provided residents with specific guidance on their teaching skills and directly contributes to the CCC review process. Furthermore, medical students are required to complete a minimum number of evaluations of residents during their surgical clerkship to obtain a more balanced view of teaching performance, as previously students could select who they wished to evaluate.

4. Summary

Rigorous investment in the CCC process and establishment of the MAEC has directly served the learning needs of our residents. The CCC and MAEC have informed faculty that the quality of their assessment and feedback methods have a critical effect on identifying and addressing specific learning targets for trainees. The principles established within this structure are transferable to other surgery programs and broadly across procedural-based residencies. We believe this teaching assessment example helps illustrate an effective system of implementation which is concordant with the ACGME's goals for the CCC function and the Milestones Project overall.

The successful mapping of assessment tools to milestones prompted the MAEC to continue reviewing the alignment between existing feedback mechanisms and the ACGME milestones in order to identify other potential assessment gaps and remain open to addressing any gaps that may emerge in the future in an effort to continue to support residents' growth and progression through milestones.

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