A Pilot Study to Gauge Effectiveness of Standardized Patient Scenarios in Assessing General Surgery Milestones

Denise W. Gee, MD,* Roy Phitayakorn, MD,* Avni Khatri, BS,† Kathryn Butler, MD,* John T. Mullen, MD,* and Emil R. Petrusa, PhD*

*Department of Surgery, Massachusetts General Hospital, Boston, Massachusetts; and †Laboratory of Computer Science, Massachusetts General Hospital, Boston, Massachusetts

PURPOSE: Some General Surgery Milestones can be difficult to assess in traditional clinical settings and especially difficult to assess in junior residents. The purpose of this pilot study was to

(1) develop a standardized patient (SP) scenario to assess resident performance on specific Milestones and
(2) compare SP scenario Milestone performance with Clinical Competency Committee (CCC) Milestone evaluations.

METHODS: A total of 9 categorical interns participated in a comprehensive, 4-module, SP scenario designed to evaluate and manage right upper quadrant pain. SP checklist scores (SP%) were converted to Milestone-equivalent scores for direct comparison (SP-C). Milestone scores were analyzed from 3 different sources: SP, faculty (FAC), and CCC. Interns completed course evaluations at the end of each session. Spearman's rho was used to determine correlations. Wilcoxon signed rank tests were used to test for differences between scores from different sources.

RESULTS: Individual intern Milestone scores from the 3 sources (SP-C, FAC, and CCC) did not correlate. All 7 mean Milestone scores from SPs were significantly higher than from FAC and CCC. FAC and CCC scores were statistically equivalent except for Systems-Based Practice 1 (SBP1) and Patient Care 3 (PC3) where CCC scores were significantly higher than FAC. Mean SP% scores for PC1 were significantly lower than for PROF1, MK1, MK2, and ICS1 ($p < 0.05$). Interns felt the modules were moderately to very useful.

CONCLUSIONS: Developing an SP scenario for Milestones evaluation is feasible. SPs, faculty observers, and CCC each use different data to provide a unique source of Milestone assessment. SP scenarios may be ideally suited to assess specific resident strengths and weaknesses and provide individualized feedback, thus augmenting traditional evaluations. Additional SP scenarios, assessing a broader range of skills and Milestones, are advisable for more reliable estimates of resident performance. (J Surg Ed 73:e1-e8. © 2016 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: milestones, standardized patient, resident education, assessment, patient satisfaction

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

INTRODUCTION

The Accreditation Council for Graduate Medical Education (ACGME), in collaboration with representative members of the American Board of Surgery (ABS) and other surgical education representatives, recently created the General Surgery Milestones. The General Surgery Milestones (GSM) project was officially implemented in July 2014[1] and was designed to be used in the semiannual review of residents. The Milestones are competency-based developmental outcomes (e.g., knowledge, skills, attitudes, performance) that can be demonstrated progressively by residents and fellows throughout their residency and into practice.

Correspondence: Inquiries to Denise W. Gee, MD, 15 Parkman St, ACC 460, Boston, MA 02114; e-mail: dgee@mgh.harvard.edu

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Each Milestone is organized in a developmental framework from less to more advanced across 5 levels (Critical Deficiency, levels 1-4).

Before general surgery, the Milestones project was introduced in other specialties such as internal medicine, pediatrics, and emergency medicine. Various methods of incorporating Milestones assessment into these residencies have been described[2,3] though the literature remains sparse and programs struggle to identify ways to appropriately integrate Milestones into residency training.[4] The ACGME requires the creation of a residency program Clinical Competency Committee (CCC) that is comprised of a group of faculty members who use both existing and new methods of evaluation to assess for specific Milestones. Except for that mandate, the ACGME has otherwise allowed programs freedom to determine their own optimal approach to Milestones assessment. The optimal method for GSM evaluation is yet to be determined. Few studies have been published about the assessment of GSMs due to the relatively recent date of implementation. Preliminary ideas for assessment have included the use of existing tools such as the Clinical Assessment and Management Examination—Outpatient (CAMEO) assessment,[5] new evaluation methods such as the Modified Milestones Tool,[6] or the modification of existing assessment mechanisms with addition of new program components.[4] The ideal method of Milestones assessment continues to be a subject of great debate nationally.

In the face of new training paradigms in general surgery, standardized patients (SP) may offer a unique opportunity in the evaluation of GSMs. SPs have been widely used in medical student training often with subsequent competency-based evaluations (i.e., via the Objective Structured Clinical Exams). The use of SPs is less prevalent in graduate medical education and particularly rare in general surgery residencies.[7] Multiple potential advantages to this educational method exist including flexibility in scheduling (for both residents and faculty) as well as consistent, standardized presentations for each resident. Current methods of assessment rely on very little direct faculty observation of resident behaviors[8] and even when direct observation occurs, the actual evaluation may be delayed and less accurate.[9] SP scenarios offer standardized methods that can potentially help assess the more granular aspects of the Milestones project.

Much of simulation in surgery has been focused on technical and operative skills. However, several GSMs describe nontechnical skills that may be ideally evaluated in SP scenarios. Milestones such as Professionalism, Systems-Based Practice, and Interpersonal Skills, and Communication are difficult to assess in traditional clinical settings and especially difficult to assess in junior residents given their more limited interaction with surgical faculty. SP scenarios can be specifically designed to test or evaluate for particular resident actions and SPs, themselves, can collect data and serve as a unique source of direct and immediate feedback to residents. In addition, faculty could observe these SP scenarios and offer immediate debriefing of the SP interaction giving valuable feedback to the resident on their performance. Different Milestones can be mapped to a specific scenario and a series of SP scenarios could be created to allow for efficient assessment of multiple General Surgery Milestones.

Given the multiple potential benefits of integrating SP scenarios into general surgery residency training, we designed this pilot study to

(1) develop, implement, and evaluate an SP scenario to assess resident performance on specific Milestones and

(2) compare SP scenario Milestone performance with CCC Milestone evaluations.

METHODS

Creation of SP Scenario

An SP scenario for the evaluation and management of right upper quadrant (RUQ) pain was created. Participants included 9 categorical PGY1 general surgery residents at the Massachusetts General Hospital (MGH). The case stem was adapted from a scenario template previously created at the University of Massachusetts, Interprofessional Center for Experiential Learning and Simulation (iCELS) using best practice guidelines as outlined by the Association of Standardized Patient Educators and other references.[10]

Expansion of this case resulted in the development of 4 modules, each designed to evaluate a separate set of clinical competencies:

Module 1: History and Physical (H + P)

Module 2: Informed Consent

Module 3: Simulated Operation and Operative Report documentation (no SP)

Module 4: Disclosure and Apology (D + A)

4a: SP interaction prior to watching educational video on D + A

4b: SP interaction after watching educational video on D + A

The 4 modules of the SP scenario occurred over 3 nonconsecutive days between January and May 2015 (Table 1). These days were selected to accommodate intern schedules and SP availability. The SPs were hired from the University of Massachusetts iCELS Standardized Patient Program and trained on the scenario details and evaluation tools. The faculty observers were MGH surgeon educators familiar with Milestones and Milestones assessment. For consistency, the same 3 SPs and 3 faculty observers were present at Modules 1, 2, and 4. Module 3 required no SPs and only 1 faculty observer.