EDUCATION AND TRAINING

Teaching the Competencies: Using Objective Structured Clinical Encounters for Gastroenterology Fellows

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Background Aims: **Objective structured clinical encounters (OSCEs) are used widely to educate and assess the competence of medical students and residents; they generally are absent from fellowship training. The Accreditation Council for Graduate Education has cited OSCEs as a best practice for assessing the 6 core competencies. This article reports on the use of an OSCE to assess the competence of second-year gastroenterology fellows in the difficult-to-assess core competencies: interpersonal and communication skills and professionalism.** ***Methods:*** **We developed a 4-station, faculty-observed OSCE with 4 standardized patients. Information gathering, relationship development, patient education, and counseling skills were assessed. Professionalism skills assessed included obtaining informed consent, delivering bad news, managing difficult situations, and showing interdisciplinary respect. In each station, faculty and standardized patients completed an 18- to 24-item checklist evaluating fellows' performance and provided feedback to the fellows. Nine fellows and 5 faculty from 4 gastroenterology training programs in NYC participated.** ***Results:*** **Fellows and faculty generally highly rated the realism of the OSCE and favorably rated the OSCE for its difficulty and their overall experience. Across all cases, fellows were rated as receiving "well dones" for 56.4% of the communication items (SD, 18.3%) and for 79.1% of the professionalism items (SD, 16.4%).** ***Conclusions:*** **Integrating OSCEs into gastroenterology fellowship training may help enhance communication skills and prepare fellows for dealing with difficult clinical situations and provides mechanisms for constructive feedback. OSCEs developed collaboratively can assist in program self-evaluation and reduce costs by sharing resources, in addition to fulfilling Accreditation Council for Graduate Education mandates.**

Objective structured clinical examinations (OSCEs) have found widespread acceptance as an effective teaching tool and as a method for determining the competence of both medical students and residents.[1–7] In February 1999, the Accreditation Council for Graduate Medical Education (ACGME) identified 6 general competencies for residents and fellows: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice.[8] Residency programs are now required to institute performance improvement activities to facilitate the development of these competencies by residents. The ACGME has cited the use of OSCEs and standardized patients (SPs) as a best practice to determine a resident's level of interpersonal and communication skills.

Most gastroenterologists interact with house staff and fellows in the course of their clinical work and are asked to impart their wisdom to those in training. As a result, teaching gastroenterology to our trainees has become more challenging because it involves more than just medical knowledge and how to perform procedures; the teaching of interpersonal communication skills and professionalism are essential to ensure patient safety. As a result, many programs use simulated situations (such as objective structured clinical examinations and simulations) to teach and assess the performance of their trainees in real-life situations. These simulated situations also provide supervised practice opportunities for trainees to improve their skills in hopes to reduce errors when encountering a similar, real-life patient, and thus increase patient safety. OSCEs are used widely to educate and assess medical students and residents, but generally are absent during the fellowship stage of training. We report here our findings for a pilot program using a 4-station OSCE for gastroenterology fellows. The aims of our project were as follows: (1) to describe the process of developing and implementing a 4-station OSCE to assess the interpersonal and professionalism competencies of gastroenterology fellows, (2) to provide pilot data on fellows' levels of competence in these areas as assessed through OSCE performance, and (3) to share data and insights on the feasibility, acceptability, and usefulness of OSCEs for assessing competence, evaluating training, and improving faculty feedback.

Abbreviations used in this paper: ACGME, Accreditation Council for Graduate Education; GI, gastroenterology; OSCE, objective structured clinical encounter; SP, standardized patient.

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Methods

Participants

Nine fellows and 5 faculty members from 4 gastroenterology (GI) training programs in New York City participated. This study was approved by the New York University School of Medicine Institutional Review Board. The scores for each fellow were de-identified and linked only to the school/training program of each fellow. Each participating program contributed $100 per fellow to cover the cost of the SP's lunch and program supplies.

Objective Structured Clinical Encounter Station Development and Implementation

A set of 4 clinical cases were developed to assess key communication and professionalism skills relevant to gastroenterology. All 4 cases were adapted from previously used cases in medical, surgical, and emergency medicine residents and reviewed by local gastroenterologists for realism, content, and difficulty level.

Informed consent. The fellows were required to obtain informed consent for a colonoscopy from a patient who had a history of chronic ulcerative colitis and whose risks and consequences of bowel perforation were increased.

Breaking bad news. The fellows were asked to break bad news to a patient. They were required to inform a patient who presented for a screening colonoscopy that they had colon cancer requiring surgical resection.

Medical complication. The fellows were required to discuss a complication, in which the fellow had perforated a patient's bowel performing a colonoscopy.

Transfer to surgery. The fellow was required to transfer a case to the surgical service by persuading an "obnoxious" surgical resident that a complex patient with multiple medical problems and probable bowel ischemia needed to be on their surgical service. The fellows' ability to maintain a professional relationship with the surgical resident was assessed.

Actors who have participated previously as SPs were hired for 3 scenarios, and a surgical resident was hired to perform the surgical resident role. The SPs were trained for an hour with scripts and role-play to standardize their case portrayals and resident ratings. The same SP and surgical resident were seen by all fellows. Four GI training programs in New York City were invited to participate and provided both faculty observers (n = 5) and their second-year fellows (n = 9). Faculty raters spent 1 hour reviewing the checklists and standardizing their ratings.

Measures

We defined our interviewing competencies and professionalism skills through literature review, consultation with performance-based assessment experts (S.Z.), and GI fellowship program directors (S.C., P.B., D.K., and E.W.). The major domains of interest were communication and professionalism. In particular, the communication competencies assessed included data gathering (eg, elicited your story using appropriate questions), relationship development (eg, communicated concern or intention to help), and patient education/counseling (eg, provided clear explanations/information). The same 11 generic communication behaviors were assessed across all cases. Specific professionalism skills were assessed across 2 to 3 cases and included delivering bad news (eg, prepared the patient to receive bad news, assessed the patient's readiness to receive news, gave the patient an opportunity to respond), accountability (eg, took responsibility for the situation), managing a difficult situation (eg, maintained professionalism by controlling emotions, avoided assigning blame), and showing interdisciplinary respect (eg, showed respect toward the surgeon, acknowledged their own role, and understood hospital guidelines). These core areas were assessed using a behaviorally anchored checklist that has been used previously with medical, emergency medicine, and surgical residents and has shown both minimum reliability (internal consistency and inter- and intrarater reliability) and convergent and predictive validity.[9,10] The communications portion of the checklist is included in Figure 1.

The communication and professionalism checklist items are rated on a 3-point scale of "not done" (the fellow did not perform that task at all), "partly done" (the fellow attempted the task but did not do it correctly), and "well done" (the fellow performed the task correctly). To set high standards for competence, scores were calculated as a percentage of "well done."

Fellows had 15 minutes to perform each scenario. Faculty observers and SPs independently completed the OSCE checklist immediately after each encounter and then had 5 minutes to give verbal feedback to the fellows. Report cards summarizing individual performance in comparison with all fellows were generated to provide fellows with data-based individualized feedback (Figure 2).

After completing the OSCE, fellows and faculty completed a 5-item questionnaire that addressed the case difficulty and educational value of the experience.

Statistical Analysis

Statistical analysis was performed using Epidata software and Statistical Package for the Social Sciences (SPSS Inc, Chicago, IL) version 15.0. For this pilot study, only descriptive statistics (means and standard deviations) are reported. OSCE scores are calculated as the percentage of receiving a score of well done. Post-OSCE questionnaire ratings are reported as means on a 5-point scale. Cronbach alphas were calculated to assess the internal consistency of items across cases (and SP raters) and between SP and faculty raters.

Results

Scores derived from the checklist met minimum standards for reliability (Cronbach alpha > 0.65 for overall and subdomain scores across cases; agreement between SP and faculty was moderate-to-strong: Cronbach alpha = 0.66 for professionalism and = 0.84 for communication skills).

The communication skills scores were based on information gathering, relationship development, and patient education as presented as the percentage of items that fellows' were rated as having received a rating of well done. The percentage of well-done items for communication and professionalism by case and overall across cases is presented in Table 1. The overall mean communication score across all the fellows was 56.4% (SD, 18.3%). Fellows received more well-done ratings for relationship development (58.0%; SD, 20.5%) and information gathering (64.7%; SD, 13.3%) communication items than they did for education and counseling (46.2%; SD, 26.2%). Performance varied across cases with fellows generally performing worse in the more interpersonally challenging cases, namely the medical

NYU OSCE CHECKLIST

ID # _____ SP Name: _____

COMMUNICATION SKILLS	Not Done	Partially Done	Well Done
Information Gathering			
***Elicited your responses using** appropriate questions:* ▪ No leading questions ▪ Only one question at a time	Impeded story by asking leading, judgmental questions AND more than one question at a time	Used leading/judgmental questions OR asked more than one question at a time	Asked questions one at a time without leading patient in their responses
Clarified information by repeating to make sure he/she understood you on an ongoing basis	Did not clarify (did not repeat back to you the information you provided)	Repeated information you provided but did not give you a chance to indicate if accurate	Repeated information and directly invited you to indicate whether accurate
Allowed you to talk **without interrupting**	Interrupted	Did not interrupt directly BUT cut responses short by not giving enough time	Did not interrupt AND allowed time to express thoughts fully
Relationship Development			
Communicated concern or intention to help	Did not communicate intention to help/concern via words or actions	Words OR actions conveyed intention to help/concern	Actions AND words conveyed intention to help/concern
Non-verbal behavior enriched communication (e.g., eye contact, posture)	Non-verbal behavior was negative OR interfered with communication	Non-verbal behavior demonstrated attentiveness	Non-verbal behavior facilitated effective communication
Acknowledged emotions/feelings appropriately	DID NOT acknowledge emotions/feelings	Acknowledged emotions/feelings	Acknowledged & responded to emotions, feelings in ways that made you feel better
Was **accepting/non-judgmental**	Made judgmental comments OR facial expressions	Did not express judgment but did not demonstrate respect	Made comments and expressions that demonstrated respect
Used words you understood and/or explained **jargon**	Consistently used jargon WITHOUT further explanation	Sometimes used jargon AND did not explain it	Explained jargon when used OR avoided jargon completely
Education and Counseling			
Asked questions to see what you understood (checked your understanding)	Did not check for understanding	Asked if patient had any questions BUT did not check for understanding	Assessed understanding by checking in throughout the encounter
Provided **clear explanations**/information	Gave confusing OR no explanations which made it impossible to understand information	Information was somewhat clear BUT still led to some difficulty in understanding	Provided small bits of information at a time AND summarized to ensure understanding
Collaborated with you in identifying possible next steps/plan	Told patient next steps/plan	Told patient next steps THEN asked patient's views	Told patient options, THEN mutually developed a plan of action

Figure 1. Sample checklist: interpersonal and communication skills.

complication and breaking bad news cases, than in the informed consent and transfer to surgery cases. Fellows achieved a rating of well done in 79.1% (SD, 16.4%) of the professionalism items; however, scores differed by specific domains of professionalism. For example, fellows scored highest in managing difficult situations (83.2%; SD, 23.8%) and in showing interdisciplinary respect (67.6%; SD, 26.5%). Scores in the area of delivering bad news suggested room for improvement, with residents on average correctly performing only 30.6% of the specific skills for delivering bad news (SD, 25.1%).

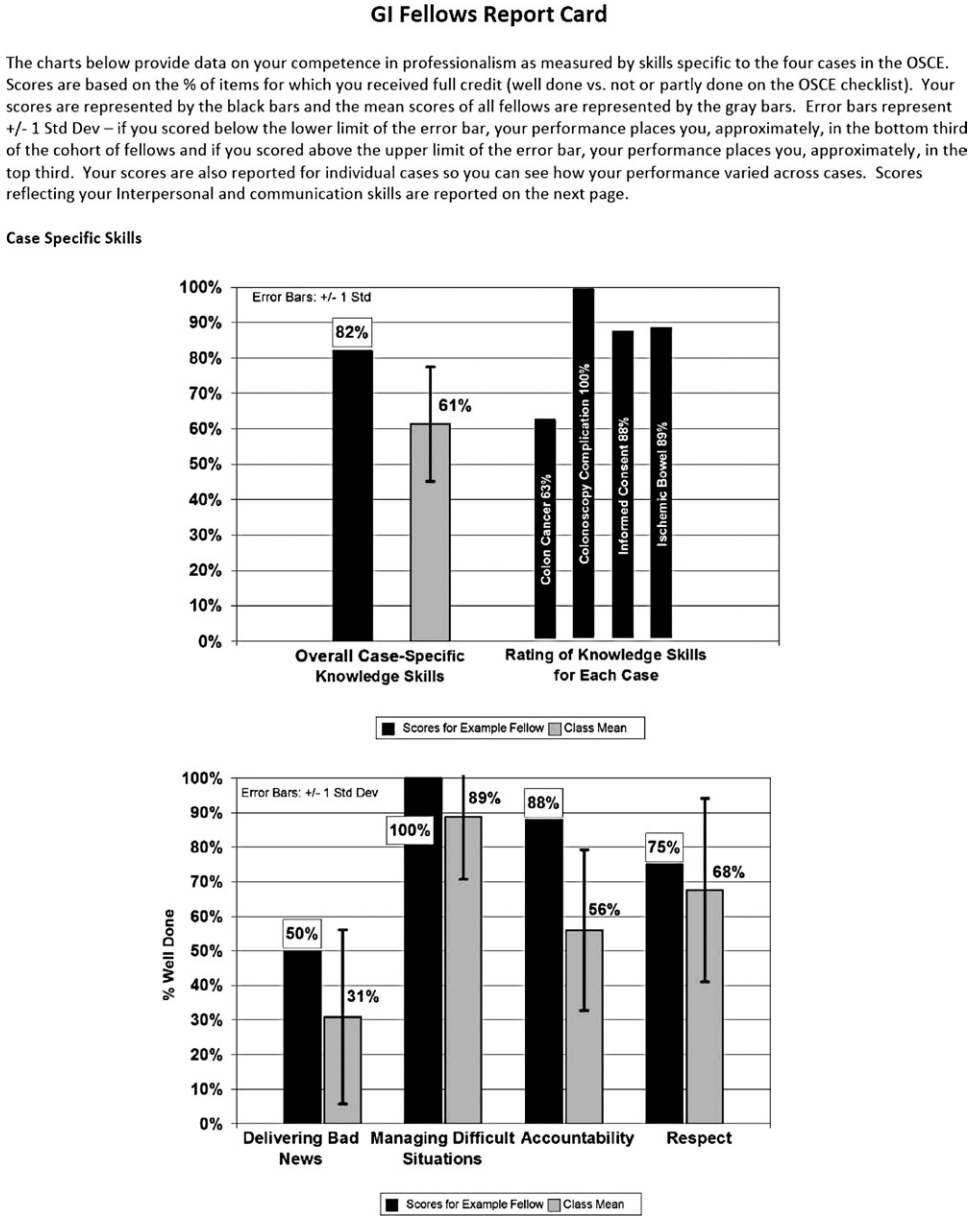


Figure 2. Sample report card.

Report cards were generated that showed how each individual fellow performed on the core skills in comparison with all the other fellows who participated in the OSCE. Scores also were provided across cases where relevant to showcase strengths or weaknesses related to specific content and/or clinical challenges. These report cards helped to give fellows (and program faculty) a more nuanced and finely grained picture of their specific skills across scenarios.

Fellow and faculty ratings of their experience of the OSCE suggest that they valued the experience. Their average agreement that the OSCE was a fair assessment of their skills was 4.1 (SD, 0.9) for fellows and 4.3 (SD, 0.9) for faculty on a 5-point scale (1 = strongly disagree and 5 = strongly agree). The OSCE received high marks for its realism from both faculty and fellows and its difficulty level was rated as just about in the middle (mean, 3.3; SD, 0.7) between 1 (overly simple) and 5 (overly difficult). Both fellows and faculty rated their overall experience as quite good, especially the faculty (mean, 4.5; SD, 0.6) (fellows' mean, 4.1; SD, 0.6; both on a 5-point scale, 1 = poor to 5 = excellent) (Table 2).

Discussion

In the past decade, the ACGME launched a staged implementation of the core competencies in which, initially, programs were expected to accept these broad headings and to develop curricula to teach each component to their fellows. After this, programs were expected to assess the impact of these curricular changes and ultimately to show programmatic improvements based on their predetermined outcome measures. Each of the 4 training programs that participated in the OSCE went about this in a different way. Our purpose was not to explore individual program teaching methods, but to assess fellows' performances in a standardized way and to provide this information to all of the participating programs.

Table 1. OSCE Performance of Gastroenterology Fellows in Interpersonal and Communication and Professionalism Competencies (n = 9)

Competency	Medical complication, mean (SD)	Breaking bad news, mean (SD)	Informed consent, mean (SD)	Transfer to surgery, mean (SD)	Overall mean (SD)
Interpersonal and communication skills					
Relationship development	36.7% (45.8%)	51.1% (22.6%)	75.6% (24.0%)	74.1% (14.7%)	58.0% (20.5%)
Information gathering	40.0% (54.8%)	61.1% (18.2%)	70.4% (11.1%)	70.4% (11.1%)	64.7% (13.3%)
Education and counseling	33.3% (44.1%)	14.8% (24.2%)	81.5% (24.2%)	55.6% (36.3%)	46.2% (26.2%)
Overall	36.6% (50.0%)	42.4% (15.8%)	76.4% (11.6%)	66.7% (17.3%)	56.4% (18.3%)
Professionalism					
Managing difficult situations	—	77.8% (36.3%)	—	88.9% (22.0%)	83.2% (23.8%)
Delivering bad news	38.9% (41.7%)	18.8% (11.6%)	—	—	30.6% (25.1%)
Accountability	37.0% (42.3%)	48.9% (26.7%)	—	80.6% (20.8%)	56.0% (23.1%)
Interdisciplinary respect	33.3% (50.0%)	—	—	79.6% (26.1%)	67.6% (26.5%)
Overall	36.4% (41.0%)	48.5% (23.6%)	75.8% (11.2%)	81.0% (23.4%)	79.1% (16.4%)

In comparison with most other OSCEs that have taken place in medical schools and residency programs, our program used the OSCE in a fellowship program. The OSCEs we designed were adapted to a more sophisticated level of fellows and were used not to assess history and physical examination skills, as has been used traditionally in medical schools and residency programs, but to assess interpersonal skills and professionalism. We have benefited greatly by our proximity to an Internal Medicine program that is well established in the use of OSCEs at New York University School of Medicine. There was generous sharing of educational materials, methodology, and expertise to help frame the cases and the behaviorally grounded checklists used to assess the fellows. Taking the cases to a higher level of complexity for fellows was educational for all because it was necessary to tease out the elements that made the cases more sophisticated. For example, in the informed consent case, the patient had ulcerative colitis and we believed it was necessary for the fellow to inform the patient of the risk of a total colectomy in the event of colonoscopic perforation.

Our pilot program OSCE was well received by both the fellows and faculty and yielded useful information for the participants: immediate specific feedback in the moment for the fellows, and report cards comparing the individual fellows with the group as a whole for the programs that participated. The report cards were useful because they provided the programs and the participating fellows not just feedback on the fellows' communication skills and professionalism, but also an opportunity for practice-based learning.

The limitations of this program were its nature as a pilot: the number of participants was small, and the training of the faculty as raters was not as rigorous as some of the other OSCEs at our institution in that it was briefer and relied upon their experience as program directors who give feedback rather than a formal rater training program. We did learn a few things to improve it for the future—logistics, dressing patients in hospital gowns, and minor changes to the case details. The benefits of the program were the opportunity to observe our fellows perform in some challenging real-life scenarios and see how they compared with fellows from other programs. We believe that the collaboration was a good way to reduce costs and to add value to the event with the cross-program communication, fostering sharing of information and opening us to the possibilities of further faculty development. Our expectation is that as faculty members participate in more OSCEs, they will continue to learn better methods for giving specific feedback in the moment and that this will improve training program effectiveness in the future. We recognize that we must reassess the fellows after this program to see if there is a measurable and hopefully sustained improvement in their performance. Future OSCEs have been planned to assess that in addition to using the program for faculty development.

Table 2. Fellow and Faculty Evaluation of the GI OSCE

Ratings of GI OSCE	Mean (SD) of fellows (n = 9)	Mean (SD) of faculty (n = 5)
Fair assessment[a]	4.1 (.9)	4.3 (.9)
Realistic cases and scenarios[a]	4.6 (.5)	4.5 (.6)
Difficulty level[b]	3.1 (.6)	3.5 (.6)
Overall experience[c]	4.1 (.6)	4.5 (.6)

[a]5-point scale: 1 = strongly disagree to 5 = strongly agree.
[b]5-point scale: 1 = overly simple to 5 = overly difficult.
[c]5-point scale: 1 = poor to 5 = excellent.

Conclusions

We believe incorporating OSCEs, a validated method across the educational continuum, into fellowship programs provides an important opportunity to both teach and assess the competencies crucial to training programs in gastroenterology. Program reviews by the ACGME certainly will be looking for evidence that we are assessing the outcomes of our educational endeavors.

References

1. Zyromski N, Staren E, Merrick H. Surgery residents' perception of the objective structured clinical examination (OSCE). Curr Surg 2003;60:533–537.
2. Merrick H, Nowacek G, Boyer J, et al. Comparison of the objective structured clinical examination within the performance of third-year medical students in surgery. Am J Surg 2000;179:286–288.
3. Jain S, De Lisa J, Nadler S, et al. One program's experience of OSCE vs written board certification results. Am J Phys Med Rehabil 2000;79:462–467.

4. Holcombe E, Hawkins R. Methods for evaluating the clinical competence of residents in internal medicine: a review. Ann Intern Med 1998;129:42–48.
5. Hamadeh G, Lancaster C, Johnson A. Introducing the objective structured clinical examination to a family practice residency program. Educ Res Methods 1993;25:237–241.
6. Sloan DA, Donnelly MB, Schwartz RW, et al. The Objective Structured Clinical Examination. The new gold standard for evaluating postgraduate clinical performance. Ann Surg 1995; 222:735–742.
7. Sloan DA, Donnelly MB, Schwartz RW, et al. The use of objective structured clinical examination (OSCE) for evaluation and instruction in graduate medical education. J Surg Res 1996;63:225–230.
8. Accreditation Council for Graduate Medical Education. Outcome project—introduction, 2001. Available: http://www.acgme.org/outcome/comp/compMin.asp. Accessed May 5, 2007.
9. Tewksbury LR, Gillespie C, Richter R, et al. The construct and predictive validity of a comprehensive clinical skills exam. J Gen Intern Med 2006;21:138–139.
10. Yedidia MJ, Gillespie C, Kachur E, et al. Effect of communication training on medical student performance. JAMA 2003;290: 1157–1165.

Reprint requests

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Conflicts of interest

The authors disclose no conflicts.