

# CURRICULUM

## An OSCE Evaluation Tool for the Assessment of Emergency Medicine Resident Progression Performance of ACGME Patient Care and Interpersonal Communication Milestones

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### ABSTRACT:

**Audience:** This curriculum is designed to provide a standardized assessment of emergency medicine resident performance of selected ACGME patient care and interpersonal communication milestones in emergency medicine.

**Introduction:** Since the development of the milestones in emergency medicine, residency educators have found assessment of milestones in the clinical setting challenging.<sup>1</sup>

We piloted an observed standardized clinical evaluation (OSCE) based on selected milestones in emergency medicine. We chose to evaluate Patient Care and Interpersonal Communication milestones because we felt that these milestones are easiest to assess using an OSCE model. There is also some evidence that patient care milestones are difficult to reliably assess in the clinical setting.<sup>1</sup>

**Objectives:** Our goal was to create a standardized OSCE based formative assessment tool that could be deployed with minimal resource utilization. The purpose of our tool is to provide data regarding emergency medicine residents' performance in ACGME patient care milestones as they progress longitudinally through their residency.

**Method:** The sources of multi-source feedback used in this curriculum include direct observation of the residents' history and physical exam performed on a standardized patient, evaluation of the residents'

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interpretation of visual stimuli such as electrocardiograms (ECGs) and radiographs, and interaction with simulated consultants. Feedback was provided during the encounter by both faculty and the standardized patient.

**Topics:** Evaluation, assessment, milestones, observed standardized clinical evaluations, OSCE.



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## Learner Audience:

Interns, junior residents, senior residents

## Length of Curriculum:

This curriculum takes approximately 20 minutes per resident to complete.

## Topics:

Evaluation, assessment, milestones, observed standardized clinical evaluations, OSCE.

## Objectives:

By the completion of this OSCE evaluation tool and curriculum, users will be able to:

1. Provide a resource for longitudinal assessment of resident performance of selected Patient Care and Interpersonal Communication milestones.
2. Provide multi-source feedback that can be used for formative assessment for residents as they progress through residency
3. Minimize resource utilization for faculty with short, scripted scenarios.

## Brief introduction:

The ACGME milestones were developed with a goal of making residency training more outcome- and competency-based. Achieving this goal will require new ways of thinking about and assessing resident performance.<sup>6</sup> Faculty evaluation and entrustment of trainees in the clinical setting can be influenced by multiple factors, including factors unique to particular clinical situations and faculty members involved.<sup>7</sup> Studies performed since the development of the milestones in emergency medicine have indicated that assessment of milestones in the clinical setting can be challenging.<sup>1,5</sup> A standardized assessment such as an OSCE provides the ability to eliminate some of the inconsistencies inherent in the clinical setting and evaluate each resident using the same patient, the same faculty member, and a clinical scenario designed to evaluate the milestones of interest.

We piloted an observed standardized clinical evaluation (OSCE) based on selected milestones in emergency medicine that was designed to promote streamlined, standardized assessment of selected milestones in emergency medicine. We chose to evaluate patient care and interpersonal communication milestones because we felt that these milestones are easiest to assess using an OSCE model. There is also some evidence that patient care milestones are difficult to reliably assess in the clinical setting.<sup>1</sup>

## Problem identification, general and targeted needs assessment:

Since implementation of the emergency medicine (EM) milestones in 2013, EM residency programs have needed to find ways to measure residents' achievement of these markers. Residents' achievement of EM Milestones can be difficult to reliably evaluate in the clinical setting.<sup>1</sup> Faculty tend to overestimate residents' achievement of the milestones in the clinical setting and to reply in the affirmative when asked questions based on Milestones.<sup>1</sup>

Although the standardized direct observation assessment tool (SDOT) has been shown to be a reliable method of evaluating EM residents' clinical performance,<sup>2,3</sup> there are several limitations. First, the SDOT is not based on ACGME emergency medicine patient care milestones. Second, clinical encounters are not standardized in the Emergency Department and vary because of the inherent variety of pathology and acuity. Finally, because the SDOT requires observation of a patient through her entire ED course, a substantial time and resource burden is imposed on faculty. We found the need for an evaluation tool based on the EM milestones, which would create a standardized experience for the residents. We developed an observed standardized clinical examination (OSCE) to evaluate EM residents' performance of several of the EM Milestones.

## Goals of the curriculum:

Our goal was to create a standardized tool for formative assessment and evaluation of emergency medicine residents' performance of patient care milestones that minimize faculty resource utilization with short, scripted scenarios. A secondary goal was to provide the resident with immediate, direct feedback regarding their interpersonal communication skills by both the faculty member and the standardized patient.

## Objectives of the curriculum:

1. Provide a resource for longitudinal assessment of resident performance of selected patient care and interpersonal communication milestones.
2. Provide multi-source feedback that can be used for formative assessment for residents as they progress through residency



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3. Minimize resource utilization for faculty with short, scripted scenarios.

## Educational Strategies: (See curriculum chart)

### Associated Content:

The scenarios and check lists used in this curriculum are included as an attachment.

Of note, images are not provided but all should be images that can be easily found online by the instructor.

### Evaluation and Feedback:

This innovation allowed us to administer a standardized patient encounter with a Milestone-based evaluation. The OSCE allowed us to assess the Milestones that are more difficult to assess in the clinical setting such as professionalism, interpersonal, and communication skills. The OSCE was much faster to deploy than previously available tools such as the SDOT. Our team of four faculty members was able to evaluate 19 residents in 3 hours, requiring one faculty member and approximately 20 minutes per resident to complete.

One strength is that we were able to videotape the OSCE, unlike a clinical encounter in a patient care setting. This provided a durable record of the resident's performance that was available for review by other faculty members and the resident at a later date. The videotaped OSCEs were used by our Clinical Competency Committee (CCC) as an additional source of information for some residents to assess their progress. In several circumstances, deficiencies in professionalism and/or interpersonal and communication skills were observed during this exercise that were otherwise difficult to describe. Although we did not utilize the videotaped scenarios in this manner, programs may allow the residents to watch their own OSCE for self-assessment.

### References/suggestions for further reading:

1. Dehon E, Jones J, Puskarich M, Sandifer JP, Sikes K. Use of emergency medicine milestones as items on end of shift evaluations results in overestimates of residents' proficiency level. *J Grad Med Educ.* 2015;7(2):192-196. doi: 10.4300/JGME-D-14-00438.1
2. Tekien A, Hodges BD, Roberts TE, Schuwirth L, Norcini J. Assessing competencies using milestones along the way. *Med Teach.* 2015;37(4):399-402. doi: 10.3109/0142159X.2014.993954
3. Ten Cate O, Hart D, Ankel F, Busari J, Englander R, Glasgow N, et al. Entrustment decision making in clinical training. *Acad Med.* 2016;91(2):191-198.
4. Schott M, Kedia R, Promes S, Swoboda T, O'Rourke K, Green W, et al. Direct observation of milestones: problems with reliability. *West J Emerg Med.* 2015;16(6):871-876. doi: 10.5811/westjem.2015.9.27270
5. Accreditation Council for Graduate Medical Education and the American Board of Emergency Medicine. *The Emergency Medicine Milestone Project.* <https://www.acgme.org/Portals/0/PDFs/Milestones/EmergencyMedicineMilestones.pdf>. Published 2015. Accessed December 18, 2017.
6. Shayne P, Gallahue F, Rinnert S, Anderson CL, Hern G, Katz E, et al. Reliability of a core competency checklist assessment in the emergency department: The Standardized Direct Observation Assessment Tool. *Acad Emerg Med.* 2006;13(7):727-732. doi: 10.1197/j.aem.2006.01.030
7. LaMantia J, Kayne B, Yarris L, et al. Real-time inter-rater reliability of the Council of Emergency Medicine residency directors standardized direct observation assessment tool. *Acad Emerg Med.* 2009;16(Supple 2):S51-S57. doi: 10.1111/j.1553-2712.2009.00593.x

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Topic	Recommended Educational Strategy	Educational Content	Objectives	Learners	Timing, resources Needed (Space, Instructors, Equipment, citations of JETem pubs or other literature)	Recommended Assessment, Milestones Addressed
	<ol style="list-style-type: none"> <li>Standardized male patient who presents with chest pain and shortness of breath—15 minutes given for history, physical and consultation.</li> <li>Feedback session immediately following OSCE with faculty instructor and standardized patient (SP).</li> </ol> <p>For a full description of this session, see: “intern OSCE” and checklist included in the attached document OSCE scenarios and Checklists.</p>	<p>Hollander JE, Diercks DB. Acute Coronary Syndromes. In: Tintinalli JE, Stapczynski J, Ma O, Yealy DM, Meckler GD, Cline DM. eds. <i>Tintinalli’s Emergency Medicine: A Comprehensive Study Guide</i>, 8<sup>th</sup> ed. New York, NY: McGraw-Hill; 2016; 332-348.</p>	<ol style="list-style-type: none"> <li>Focused history and physical of a patient with chest pain.</li> <li>ECG interpretation (sinus tachycardia).</li> <li>Re-evaluation of patient when chest pain recurs.</li> <li>ECG interpretation (inferior STEMI).</li> <li>Feedback from faculty instructor on clinical management, feedback from SP on communication.</li> </ol>	<p>PGY-1</p>	<p>Instructors: One standardized patient, one faculty member per learner. An additional faculty member or other confederate is needed to play the cardiologist.</p> <p>Simulated exam room or private classroom/office.</p> <p>Equipment: Simulated monitor, hand sanitizer or sink.</p> <p>20 minutes (hands-on session).</p> <p>Stimuli needed: ECG that shows sinus tachycardia. ECG that shows inferior STEMI. Normal male chest X-ray.</p>	<p>Milestones 1, 2, 3, 4, 23:</p> <p>Assessment: Checklist included in attached document.</p>



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Topic	Recommended Educational Strategy	Educational Content	Objectives	Learners	Timing, resources Needed (Space, Instructors, Equipment, citations of JETem pubs or other literature)	Recommended Assessment, Milestones Addressed
	<ol style="list-style-type: none"> <li>Standardized elderly female patient who presents with hypotension, tachycardia, severe abdominal pain and confusion, perforation with free air under diaphragm on chest X-ray — 15 minutes given for history and physical and consultation.</li> <li>Feedback session immediately following OSCE with faculty instructor and standardized patient (SP).</li> </ol> <p>For a full description of this session, see: “second year OSCE” and checklist included in the attached document OSCE scenarios and Checklists.</p>	<p>Nickerson, C. Gas on Abdominal X-ray. Life in the Fastlane. Available at: <a href="http://bit.ly/2qFF6HL">http://bit.ly/2qFF6HL</a>. Accessed 12/14/17.</p>	<ol style="list-style-type: none"> <li>Focused history and physical of an elderly patient with severe abdominal pain.</li> <li>Resident generates an appropriate differential diagnosis.</li> <li>Orders and interprets imaging study—free air under the diaphragm.</li> <li>Resident recognizes perforation and the need for immediate surgical management .</li> <li>Feedback provided by faculty member on clinical management , SP on communication.</li> </ol>	<p>PGY-2</p>	<p>Instructors: One standardized patient, one faculty member per learner. Another faculty member or other confederate is needed to play the surgical resident.</p> <p>Simulated exam room or private classroom/office.</p> <p>Equipment: Simulated monitor, hand sanitizer or sink.</p> <p>20 minutes (hands-on session).</p> <p>Stimuli needed: Chest X-ray with free air under the diaphragm. Abdominal X-ray with small bowel obstruction</p>	<p>Milestones: 1,2,3,4,5, 16, 18, 23</p> <p>Assessment: Checklist included in attached document.</p>



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Topic	Recommended Educational Strategy	Educational Content	Objectives	Learners	Timing, resources Needed (Space, Instructors, Equipment, citations of JETem pubs or other literature)	Recommended Assessment, Milestones Addressed
	<ol style="list-style-type: none"> <li>1. Standardized young female patient (pregnant or padded to look pregnant) who presents with chest pain and shortness of breath after a transcontinental flight—Patient will have hypotension and tachycardia suggestive of massive pulmonary embolism (PE). — 15 minutes given for history, physical and discussions with patient and consultant.</li> <li>2. Feedback session immediately following OSCE with faculty instructor and standardized patient (SP).</li> </ol> <p>For a full description of this session, see: “third year OSCE” and checklist included in the attached document OSCE scenarios and Checklists.</p>	<p>Fasullo et al. Thrombolysis for massive pulmonary embolism in pregnancy: a case report. <i>International Journal of Emergency Medicine</i>. 2011;4:69.</p>	<ol style="list-style-type: none"> <li>1. Focused history and physical of a pregnant patient with chest pain, hypotension and tachycardia.</li> <li>2. Discussion of the differential diagnosis for chest pain in this patient.</li> <li>3. The resident will discuss the risks and benefits of CT in this patient.</li> <li>4. The resident will develop an appropriate plan for a pregnant patient with massive pulmonary embolism.</li> <li>5. The resident will discuss a high risk and complex clinical situation with a patient.</li> <li>6. Feedback provided by faculty member on clinical management , SP on communication.</li> </ol>	<p>PGY-3</p>	<p>Instructors: One standardized patient, one faculty member per learner. One additional faculty member is needed to play the consultant—the critical care or cardiothoracic surgery fellow.</p> <p>Simulated exam room or private classroom/office.</p> <p>Equipment: Simulated monitor, hand sanitizer or sink.</p> <p>20 minutes (hands-on session).</p> <p>Stimuli needed: ECG showing sinus tachycardia, Ultrasound with second trimester intrauterine pregnancy and fetal heart rate of 145, CTA showing saddle embolus.</p>	<p>Milestones: 1,2,3,4,5,7, 23</p> <p>Assessment: Checklist included in attached document.</p>



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Topic	Recommended Educational Strategy	Educational Content	Objectives	Learners	Timing, resources Needed (Space, Instructors, Equipment, citations of JETem pubs or other literature)	Recommended Assessment, Milestones Addressed
	<ol style="list-style-type: none"> <li>Standardized male patient who presents with upper gastrointestinal bleed. The patient will have clear signs of hypovolemia, but is a Jehovah's witness and will refuse transfusion. –15 minutes given for history, physical and discussions with patient and consultant.</li> <li>Feedback session immediately following OSCE with faculty instructor and standardized patient (SP).</li> </ol> <p>For a full description of this session, see: "Fourth Year Milestones OSCE" and checklist included in the attached document OSCE scenarios and Checklists.</p>	<p>Management of an upper gastrointestinal bleed patient with high risk refusal of care.</p> <p>Wolley, S. Jehovah's Witnesses in the emergency department: what are their rights? <i>Emerg Med J.</i> 2005; 22:869–871.</p>	<ol style="list-style-type: none"> <li>The resident will recognize signs of volume depletion in the patient despite lack of tachycardia secondary to b blocker use.</li> <li>The resident will communicate appropriately with a high-risk patient who is declining care.</li> <li>The resident will develop an appropriate alternative plan for a patient who is declining standard of care.</li> </ol>	PGY-4	<p>Instructors: One standardized patient, one faculty member per learner.</p> <p>Simulated exam room or private classroom/office.</p> <p>Equipment: Simulated monitor, hand sanitizer or sink.</p> <p>20 minutes (hands-on session).</p> <p>Stimuli needed: ECG with sinus tachycardia, large emesis basin with simulated hematemesis (I used instant oatmeal mixed with water and red food coloring).</p>	<p>Milestones: 2,16,20,22,23</p> <p>Assessment: Checklist included in attached document.</p>



## Intern Milestones OSCE

### Outline of the case:

The patient is a 56-year-old male who presents to the emergency department (ED) complaining of chest pain that began while gardening 2 hours prior to arrival in the ED. The pain improved with rest and is now a 6/10. He will describe the pain as severe, pressure-like, and radiating to the left arm and jaw. The pain was accompanied by shortness of breath. Initial vital signs will demonstrate sinus tachycardia and hypertension. The resident should place the patient on a monitor and obtain IV access. They should obtain an electrocardiogram (ECG), which will show T wave inversions inferiorly. The patient should be given aspirin. The resident should perform a complete history and physical and generate a differential diagnosis which should include but not be limited to:

- Acute coronary syndrome (ACS)
- Dissection
- Muscular chest pain

Five minutes into the scenario, the patient will have another episode of severe substernal chest pain. This should prompt the resident to do another ECG, which will now show ST-elevations in the inferior leads. The residents should recognize that the patient has a ST-elevation myocardial infarction (STEMI) and immediately call cardiology to activate the catheterization lab.

**Past medical history:** Hypertension, Diabetes

**Social history:** 20-pack-year smoking history, occasional alcohol use

**Past surgical history:** none

### Physical exam:

- Vital signs: Blood Pressure 190/100; Heart Rate 120; Respiratory Rate 26
- General: alert, uncomfortable, diaphoretic
- Head, Eyes, Ears, Nose, Throat (HEENT): unremarkable
- Cardiovascular (CV): regular rhythm, no m/r/g, tachycardic, equal upper extremity pulses
- Pulmonary: clear to auscultation bilaterally
- Abdominal: soft, non-tender, non-distended, no pulsatile masses
- Extremities: unremarkable

### Flow of case:

The interns should perform an initial history and physical and recognize the potential for ACS. They should put the patient on the monitor, give aspirin and order an ECG, along with appropriate labs. They should recognize that his vital signs are abnormal—if the resident does not, the patient will ask “How am I doing, Doc?” after he is connected to the monitor. The examiner should ask the resident to generate a differential diagnosis after the initial history and physical. Five minutes into the scenario, the patient will clutch his chest and complain of severe, crushing substernal chest pain. This should prompt the resident to re-evaluate the patient and order an ECG. If this does not happen, the patient should continue to complain of pain and ask the resident “Aren’t



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you going to do something?” If the resident does something other than order an ECG (orders nitroglycerin, etc.), the patient should ask why his pain has become worse. The examiner, acting as the nurse, should ask if the resident wants to do something else, and ultimately suggest a repeat ECG.

The second ECG will demonstrate inferior STEMI. The resident should immediately call cardiology to activate the cardiac catheterization lab. The cardiology consultant will come to the bedside when called by the resident. The resident must give tell the cardiologist that the patient has a STEMI and needs to go to the cardiac catheterization lab in order to resolve the case. The patient will ask the resident for an explanation of his plan of care if not given by the resident already.



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## Intern Milestones OSCE

Milestone 1	Specific Task	Done by the Resident: Yes/Partial/No
Recognizes abnormal vital signs	Resident verbally recognizes tachycardia and hypertension	
Milestone 2	Specific Task	Done by the Resident: Yes/Partial/No
Performs and communicates a reliable, comprehensive history and physical exam		<input type="checkbox"/> Performs appropriate physical <input type="checkbox"/> Performs appropriate history
Milestone 3	Specific Task	Done by the Resident: Yes/Partial/No
Orders necessary diagnostic studies	ECG, chest X-ray, labs (troponin)	<input type="checkbox"/> Orders initial ECG <input type="checkbox"/> Orders appropriate lab work
Milestone 4	Specific Task	Done by the resident: Yes/Partial/No
Recognizes the severity of illness and indications for escalating care	Recognizes that the patient's symptoms may represent ACS	<input type="checkbox"/> Places patient on monitor <input type="checkbox"/> Orders aspirin
Milestone 4	Specific Task	Done by the Resident: Yes/Partial/No
Constructs a list of potential diagnoses based on chief complaint and initial assessment	Generates differential diagnosis	<input type="checkbox"/> Initial differential includes ACS
Milestone 23		
Communicates pertinent information to emergency physicians and other healthcare colleagues	Effectively discusses case with the cardiologist	<input type="checkbox"/> Tells the cardiologist that the patient has a STEMI <input type="checkbox"/> Tells the cardiologist that the patient needs to go to the cath lab



## Second Year Milestones OSCE

### Outline of case:

The patient is a 74-year-old female who presents to the ED complaining of severe abdominal pain. Her pain began yesterday and is diffuse and severe. She also complains of frequent episodes of non-bloody, bilious vomiting and has been unable to tolerate anything orally. She has not been able to have bowel movements or pass gas. She denies fever or urinary complaints.

**Past medical history:** Hypertension, coronary artery disease, diabetes mellitus

**Past surgical history:** Gastric bypass, appendectomy, Caesarian section.

### Physical exam:

- Vital signs: heart rate 134, blood pressure 90/60, respiratory rate 28, pulse oximetry 100% on room air
- General: alert, in moderate distress, moaning and clutching her abdomen
- HEENT: dry mucous membranes
- CV: regular rhythm, tachycardic, no murmurs
- Pulmonary: clear to auscultation bilaterally
- Abdominal: rigid, distended, peritoneal, with guarding and rebound
- Extremities: no edema or tenderness
- Neurological: awake, alert, oriented to person, place and time, a little slow to respond

### Flow of case:

The resident should recognize that the patient is in distress and immediately place the patient on a monitor and initiate large bore intravenous (IV) access and IV fluids. They should introduce themselves to the patient and elicit her reasons for seeking care. They should perform a history and physical and perform pain and nausea management. After the history and physical, the residents should recognize that the patient likely has abdominal pathology. You should ask them what the differential diagnosis is. They should be able to generate a differential diagnosis, which should include (but not be limited to):

- Obstruction with perforation
- Obstruction
- Diverticulitis with abscess
- Perforated ulcer
- Mesenteric ischemia

The resident should order abdominal imaging. Ideally, given how ill the patient is and the likelihood of perforation, the residents should order a portable abdominal X-ray and upright chest. The abdominal X-ray will demonstrate evidence of obstruction. The chest X-ray will show free air under the diaphragm. The resident should recognize that this indicates perforated viscus and call an emergent surgical consult. They should be able to appropriately summarize the case for the consult resident and recommend that the patient be taken to the operating room (OR). They should start emergent antibiotics. They should inform the patient of her diagnosis and of the plans for her to go to the OR.



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## Second Year Milestones OSCE

Milestone 1	Specific task	Performed by resident: yes/partial/no
1a. Recognize when a patient is unstable requiring immediate intervention	Recognizes that patient is hypotensive and tachycardic—initiates large bore IV and IV fluids	
1b. Performs an assessment on a critically ill or injured patient	Performs focused history and physical—recognizes peritoneal abdomen	
1c. Uses relevant data to formulate a diagnostic impression and plan	Recognizes abdominal pathology. Plans for antibiotics, abdominal imaging, surgical consult. Expresses concern for perforation	<input type="checkbox"/> Antibiotics <input type="checkbox"/> Imaging <input type="checkbox"/> Surgery
Milestone 2	Specific task	Performed by resident: Yes/partial/no
Performs comprehensive history and physical exam which addresses the chief complaint and urgent patient issues	Obtains history and complete physical	<input type="checkbox"/> Obtains surgical history <input type="checkbox"/> Performs physical exam
Milestone 3	Specific task	Performed by resident: Yes/partial/no
Orders appropriate diagnostic studies	Resident should be suspicious for obstruction/perforation. Should order bedside upright chest and KUB. Labs will demonstrate elevated lactate, elevated wbc count. Resident should not send patient to CT	<input type="checkbox"/> Orders upright chest <input type="checkbox"/> Orders KUB <input type="checkbox"/> Does not send patient to CT
Milestone 4	Specific task	Performed by resident: Yes/partial/no
Generates differential based on likelihood and potential for mortality	Ask resident to generate differential diagnosis. Differential should include perforation as the most serious and likely diagnosis	
Milestone 5	Specific task	Performed by resident: Yes/partial/no



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Chooses appropriate drugs for patient treatment. Considers adverse effects of drugs	Orders appropriate drugs for pain and nausea control. Considers and can discuss adverse effects of these drugs (i.e. respiratory depression/hypotension from opiates). Orders antibiotics with appropriate coverage (gram negatives, anaerobes)	
<b>Milestone 16</b>	<b>Specific task</b>	<b>Resident performed Yes/partial/no</b>
Demonstrates compassion, integrity and respect with diverse populations of patients	Communicates with the patient in a compassionate and patient manner	
<b>Milestone 18</b>	<b>Specific task</b>	<b>Resident performed Yes/partial/no</b>
Elicits patients' reasons for seeking health care and expectations for ED visit	Communicates appropriately with patient. Asks patient why she came to the ED	
<b>Milestone 23</b>	<b>Specific task</b>	<b>Resident performed Yes/partial/no</b>
Communicates pertinent information to emergency physicians and other health care colleagues	Gives appropriate sign out to surgical resident	<input type="checkbox"/> Includes diagnosis that patient has obstruction with perforation <input type="checkbox"/> Includes recommendation that patient be taken to the OR



## Third Year Milestones OSCE

### Outline of case:

The patient is a 36-year-old female who presents to the ED complaining of the acute onset of shortness of breath that began two days prior to admission. Patient is also complaining of pleuritic chest pain. On detailed questioning, the patient will report a recent 6-hour plane trip returning from London. She will also tell the resident that she is 23 weeks pregnant. She denies fever, cough, nausea, vomiting or abdominal pain.

**Past medical history:** None

**Obstetric (OB) history:** P1G0, last menstrual period 23 weeks ago

### Physical exam:

- Vital signs: heart rate 125, blood pressure 90/60, respiratory rate 30, pulse oximetry 90% on room air
- General: alert, in moderate distress, speaking in one- to two-word sentences
- HEENT: unremarkable
- CV: regular rhythm, tachycardic, no murmurs
- Pulmonary: clear to auscultation bilaterally
- Abdominal: non-distended, non-tender
- Extremities: no edema, mild tenderness of left lower extremity
- Neurological: alert and oriented to person, place and time

### Flow of case:

The residents should immediately place the patient on a monitor, initiate large bore IV access and oxygen. ECG will show S1Q3T3. Physical exam will be otherwise unremarkable except for some mild pain and tenderness of the left lower extremity.

The resident should be able to generate an appropriate differential, which should include, but not be limited to:

- Pulmonary embolism
- Pericarditis
- Cardiomyopathy of pregnancy
- Pneumonia
- Thyroid storm

The residents should order appropriate diagnostic testing, including a chest X-ray and computed tomography angiogram (CTA) for pulmonary embolism after discussing the risks and benefits with the patient and consenting her. Bedside echocardiogram, if performed, will demonstrate a dilated right ventricle. CTA will demonstrate a massive saddle embolus. The resident should start anticoagulation, if not done already. The patient will continue to be hypotensive and tachycardic. At this point, the resident should consider thrombolysis, catheter-directed thrombolysis, embolectomy, or continuing to closely monitor the patient in the medical intensive care unit (MICU). Any consult the resident calls (MICU fellow, vascular, interventional,



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etc.) will agree to whatever the resident suggests, but will ask them to discuss the risks and benefits of each type of therapy.

The patient will ask the resident to discuss her diagnosis and prognosis if not done already.



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## Third Year Milestones OSCE

Milestone 1	Specific task	Performed by the resident: Yes/Partial/No
1a. Prioritizes critical actions in the management of a critically ill or injured patient	Recognizes that patient is in distress—evaluates airway, breathing and circulation (ABCs), places on monitor, gives oxygen, IV fluids	<input type="checkbox"/> Places on monitor <input type="checkbox"/> Evaluates ABCs <input type="checkbox"/> Gives oxygen <input type="checkbox"/> Gives IV fluids
1b. Reassesses after a stabilizing intervention	Reassesses vital signs after interventions	
Milestone 2	Specific task	Performed by the resident: Yes/No/Partial
Prioritizes essential components of a history and physical exam given a limited or dynamic circumstance	Performs focused history and physical	<input type="checkbox"/> Obtains history of pregnancy <input type="checkbox"/> Obtains history of transatlantic flight
Milestone 3	Specific task	Performed by the resident: Yes/No/Partial
3a. Prioritizes essential testing	Orders appropriate tests	<input type="checkbox"/> Orders chest X-ray <input type="checkbox"/> Orders ECG <input type="checkbox"/> Orders or performs bedside echocardiogram <input type="checkbox"/> Orders CTA
3b. Interprets the results of a diagnostic study	Correctly interprets diagnostic tests	<input type="checkbox"/> Correctly interprets chest X-ray as normal <input type="checkbox"/> Correctly interprets ECG
3c. Reviews risks, benefits and contraindications to a study or procedure	Discusses risks and benefits of radiographic studies in pregnancy Discusses risks and benefits of thrombolysis or embolectomy in pregnancy	<input type="checkbox"/> Discusses risks of CXR and CTA in pregnancy with patient <input type="checkbox"/> Discusses risks and benefits of thrombolysis/embolectomy in pregnancy
Milestone 4	Specific task	Performed by the resident: Yes/No/Partial
4a. Uses all available medical information to develop a ranked list of differential diagnoses, including those with the greatest potential for morbidity and mortality	Lists differential diagnoses in order of likelihood	<input type="checkbox"/> Differential includes pulmonary embolism <input type="checkbox"/> Differential includes cardiomyopathy of pregnancy <input type="checkbox"/> Differential includes at least one other appropriate diagnosis (i.e. pneumonia, thyroid storm)
4c. revises a differential diagnosis in response to changes in a patient's course over time	Changes differential diagnosis after lab work, chest X-ray and echocardiogram are reported	
Milestone 5	Specific Task	Performed by the Resident: Yes/No/Partial

Kulkarni M, et al. An OSCE Evaluation Tool for the Assessment of Emergency Medicine Resident Progression Performance of ACGME Patient Case and Interpersonal Communication Milestones. JETem 2018. 3(1):C1-22. <https://doi.org/10.21980/J8J63R>





# DIDACTICS AND HANDS-ON CURRICULUM

Selects appropriate drugs for treatment. Anticipates drug/drug interactions	Orders appropriate pain control for pregnant patient	<input type="checkbox"/> Orders pain control in an appropriate dose <input type="checkbox"/> Does not order medicines that are contraindicated in pregnancy <input type="checkbox"/> Resident discusses side effects of pain medication ordered
<b>Milestone 7</b>	<b>Specific Task</b>	<b>Performed by the Resident: Yes/No/Partial</b>
7a. provides patient education regarding diagnosis, treatment plan, follow up for complex patients	Discusses diagnosis, prognosis and available treatment options with the patient	
7c. makes correct decision regarding admission or discharge of patients. Assigns admitted patients to an appropriate level of care	Admits patient to the MICU (or go to the operating room for embolectomy)	
<b>Milestone 23</b>	<b>Specific Task</b>	<b>Performed by the Resident: Yes/No/Partial</b>
Ensures transitions of care are effectively communicated	Communicates effectively with chosen consultant	<input type="checkbox"/> Uses SBAR (situation, background, assessment, recommendations) or another tool to give concise sign-out to consultant <input type="checkbox"/> Advocates for chosen plan of care <input type="checkbox"/> Discusses care options and risks and benefits with consultant.



## Fourth Year Milestones OSCE

### Outline of case:

This case is designed to measure the residents' communication with patients and consultants, as well as clinical judgment.

This is a patient who will present with a severe upper gastrointestinal bleed caused by varices. The patient will be severely anemic and volume depleted on arrival to the ED, but will not be tachycardic due to chronic beta blocker use. When the residents attempt to consent the patient for blood transfusion, the patient will report that he is a Jehovah's witness and will decline blood transfusion.

The patient is a 65-year-old male who presents to the ED complaining of a one-day history of vomiting, loose stool and crampy epigastric pain. He attributes these complaints to eating "bad fish" earlier in the day. He presented to the ED because he is beginning to feel lightheaded and short of breath. He will report 5 loose stools today. If asked about the stool, he will report that the stool was black. If asked about the vomit, he will report that it looked like coffee grounds. If the resident asks about the character of his vomit, a basin with frank coffee ground emesis will be produced. He will deny fevers, chest pain, or shortness of breath.

**Past medical history:** diabetes mellitus, hypertension

**Social history:** patient has a long-standing history of chronic alcohol abuse, but will tell the residents that he stopped drinking when he began attending church two months ago

**Medications:** Metformin, metoprolol, amlodipine

### Physical exam:

- Vital signs: heart rate 88; blood pressure 100/60; respiratory rate 25; pulse oximetry 100% on room air
- General: alert, uncomfortable, diaphoretic.
- HEENT: normal except for dried blood around mouth
- CV: regular rhythm, no murmurs, tachycardic
- Pulmonary: clear to auscultation bilaterally
- Abdominal: soft, non-tender, non-distended
- Rectal (by report): gross melena
- Neurological: normal

**Bedside glucose:** 100

### Flow of case:

The residents should perform an appropriate history and physical and recognize that the patient has a gastrointestinal bleed. They should recognize evidence of volume depletion despite the patient's lack of tachycardia. After the physical, the patient will ask the resident: "What do you plan to do?" The resident should summarize the plan of care in a clear and concise way.



## **DIDACTICS AND HANDS-ON CURRICULUM**

The resident should order appropriate lab work and initiate large bore IV access. Lab results should demonstrate a hemoglobin of 5. The residents should attempt to consent the resident for blood transfusion. The patient will report that he is a Jehovah's witness and will decline blood transfusion. The residents should explore with the patient what treatments he will be willing to accept - epoetin alfa (Epogen), albumin, etc. The residents should attempt to get more information on treatment options for Jehovah's witnesses. They should communicate with the patient in a compassionate and respectful manner and work with the patient to form an alternative plan of care. They should consult a gastrointestinal specialist for esophageal banding, and provide a sign out to the gastrointestinal fellow that summarizes all of the relevant aspects of the patient's diagnosis and treatment and uses a recognized sign out process such as SBAR. They should recommend emergent endoscopy for variceal banding.



# DIDACTICS AND HANDS-ON CURRICULUM

## Fourth Year Milestones OSCE

Milestone 2	Specific task	Performed by the resident: Yes/no/partial
Synthesizes essential data necessary for the correct management of patients using all potential sources of data	Recognizes gastrointestinal bleed with volume depletion	<input type="checkbox"/> Promptly recognizes gastrointestinal bleed <input type="checkbox"/> Considers beta-blocker use in evaluating vital signs <input type="checkbox"/> Recognizes volume depletion despite lack of tachycardia
Milestone 22	Specific task	Performed by the resident: Yes/No/Partial
22a. Manages the expectations of patients. Uses communication methods that minimize the potential for stress, conflict and misunderstanding	Communicates the plan of care to the patient	<input type="checkbox"/> Includes an estimate of how long the tests ordered will take <input type="checkbox"/> Tells the patient that he will need hospital admission
22b. Communicates effectively with vulnerable populations		<input type="checkbox"/> Discusses treatment options/plan of care with patient <input type="checkbox"/> Responds in a compassionate manner when patient states that he is a Jehovah's witness
Milestone 20	Specific Task	Performed by the resident: Yes/No/Partial
Develops alternative care plan when patient's values preclude the use of commonly accepted practices	Discusses the plan of care with the patient—forms a plan of care that the patient will accept	<input type="checkbox"/> Discusses with the patient which products he will accept <input type="checkbox"/> Discusses other aspects of plan of care with the patient (endoscopy, IV fluids) <input type="checkbox"/> Does not attempt to have the patient leave against medical advice or make statements like "there's nothing we can do for you"



## DIDACTICS AND HANDS-ON CURRICULUM

Milestone 21	Specific Task	Performed by the resident: Yes/No/Partial
Recognizes limits of knowledge in uncommon or complicated clinical situations—uses additional resources to develop plans for the best possible patient care	Attempts to obtain additional resources on caring for Jehovah’s witness patients without blood transfusion (will be given packet on bloodless care)	
Milestone 23	Specific Task	Performed by the Resident: Yes/No/Partial
Ensures transitions of care are effectively communicated	Provides turnover to the gastrointestinal fellow and the intensive care unit fellow that summarizes all of the relevant aspects of the patient’s diagnosis and treatment  Uses a systematic process for giving turnover	<input type="checkbox"/> Provides turnover to the gastrointestinal fellow using SBAR <input type="checkbox"/> Recommends emergent endoscopy to gastrointestinal fellow <input type="checkbox"/> Provides turnover to the intensive care unit fellow using SBAR