identified as difficult to routinely assess in the clinical setting.
2. Acquire multiple data points to ensure resident achievement in the defined sub-competencies in order to provide more accurate feedback to our learners.

Curricular Design: Several simulation cases were developed to specifically assess participating residents in the patient centered communication (ICS1) milestone. The level 4 sub-competency addresses the ability to use flexible communication strategies to resolve specific ED challenges such as delivering bad news and drug seeking behavior was identified as difficult to routinely assess in other arenas. The cases involving the delivery of bad news involved an incidental lung nodule concerning for cancer, ethylene glycol with multi-organ system failure, and severe esophageal variceal bleed. A case of a patient with chronic back pain evaluated the residents' ability to deal with the drug seeking patient.

Impact/Effectiveness: Targeted simulations can be successfully designed to acquire multiple data points to ensure resident achievement in defined difficult to assess milestones in order to provide more accurate feedback to residents. Level 4 of the ICS1 milestone addressing ED challenges was identified as difficult to assess routinely in the clinical setting. Our cases provide education faculty the means to ensure accurate assessment of resident achievement in this particular milestone. Resident feedback regarding this simulation and opportunity for assessment was overwhelmingly positive.

59 Simulation and Standardized Patient Encounters as a Method to Assess Residents in Patient Safety (SBP1) Milestones Routinely Identified as Difficult to Evaluate in the Clinical Setting

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Background: The Accreditation Council for Graduate Medical Education (ACGME) defines 23 milestones with associated sub-competencies along a continuum for which residents are evaluated throughout their residency training. The unpredictability of clinical practice results in significant variation in the ability to assess resident achievement of certain sub-competencies and milestones. Simulation is a key component of emergency medicine resident education and should be utilized in resident assessment of milestones which are difficult to routinely evaluate in the clinical setting.

Educational Objectives:
1. Develop unique simulation cases and standardized patient encounters designed to assess participating residents in specific milestone sub-competencies identified as difficult to routinely assess in the clinical setting.
2. Acquire multiple data points to ensure resident achievement in the defined sub-competencies in order to provide more accurate feedback to our learners.

Curricular Design: A simulation case involving a traumatic splenic rupture was specifically designed to assess participating residents in the patient safety (SBP1) milestone. The level 4 milestone sub-competency, leads team reflections - such as a trauma debrief, was identified as difficult to routinely assess in other arenas. During the simulation encounter, the patient is found to have a positive FAST scan and grade IV splenic laceration. Despite adequate management the patient decompensates and is taken to the operating room. The team leader is evaluated upon their ability to initiate and lead a team debrief regarding the patient's trauma resuscitation.

Impact/Effectiveness: Targeted simulations can be successfully designed to acquire multiple data points to ensure resident achievement in defined difficult to assess milestones in order to provide more accurate feedback to residents. The level 4 SBP1 milestone sub-competency, leads team reflections, was identified as difficult to routinely assess in the clinical arena. Our case provides education faculty the means to ensure accurate resident achievement of this particular level 4 milestone. Resident feedback regarding this simulation and opportunity for assessment was overwhelmingly positive.

60 Simulation and Standardized Patient Encounters as a Method to Assess Residents in Professional Values (PROF1) Milestone Routinely Identified as Difficult to Evaluate in the Clinical Setting

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Background: The Accreditation Council for Graduate Medical Education (ACGME) defines 23 milestones with associated sub-competencies along a continuum for which residents are evaluated throughout their residency training. The unpredictability of clinical practice results in significant variation in the ability to assess resident achievement of certain sub-competencies and milestones. Simulation is a key component of emergency medicine resident education and should be utilized in resident assessment of milestones which are difficult to routinely evaluate in the clinical setting.

Educational Objectives:
1. Develop unique simulation cases and standardized patient encounters designed to assess participating residents in specific milestone sub-competencies identified as difficult to routinely assess in the clinical setting.
2. Acquire multiple data points to ensure resident achievement in the defined sub-competencies in order to provide more accurate feedback to our learners.

Curricular Design: A simulation case involving a patient with an intentional acetaminophen overdose who refused care was specifically designed to assess participating residents in the professional values (PROF1) milestone. The level 3 and 4 milestones regarding alternative care plans (level 3) and ethical issues in complicated and challenging clinical settings (level 4) were identified as difficult to routinely assess in other arenas. During the simulation encounter, the patient continually refuses care and becomes increasingly agitated with each treatment attempt. The residents must evaluate the patient's right of refusal and decision making capacity in order to create a plan for evaluation and treatment despite the refusal.

Impact/Effectiveness: Targeted simulations can be successfully designed to obtain multiple data points to ensure resident achievement in defined difficult to assess milestones resulting in more accurate feedback to residents. Levels 3 and 4 of the PROF 1 milestone involving the sub-competencies alternative care plans and ethical issues were identified as difficult to routinely assess in the clinical arena. Our case provides education faculty the means to ensure accurate resident achievement of these particular level 3 and 4 sub-competencies within the PROF1 milestone. Resident feedback regarding this simulation and opportunity for assessment was overwhelmingly positive.

61 Take a Stab at It - A Novel and Economical Chest Tube Model for Procedural Skills Education

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Background: Proper placement of chest tubes is required for efficacy and avoiding complications such as lung injury, blood loss, liver lacerations and damage to vessels and nerves. Simulators and models allow trainees to practice skills, overcome anxiety about complex procedures, and achieve higher levels of technical proficiency before attempting procedures on patients. High-fidelity simulators and commercially available task-trainers can be prohibitively expensive and costly to maintain or replace when used for teaching large groups.

Educational Objectives: Our educational needs included a chest tube model that could economically provide multiple chest tube insertion attempts to a large number of learners, and could be adapted to simulate different chest sizes.

Curricular Design: Our model was constructed using materials readily available: 1-gallon plastic jug ($1.00), plastic wrap ($2.19), package of latex balloons ($0.99), pork spare ribs ($2.99/lbs.), 3-inch foam tape, and super glue.

Model construction: Empty the jug and lay it on its side. Opposite the handle, cut a 3x4 inch rectangular window. Place a balloon in the spout of the jug and inflate so that it fills the inside of the jug and tie off. Glue the side opposite the opening to a piece of plywood. Cut a section of spare ribs to cover the window and wrap the ribs in plastic wrap. Next, use foam tape to secure the slab of ribs over the opening.

Procedure: Make an incision in the "skin" (foam tape), then bluntly dissect down to the ribs and puncture through the intercostal muscles. The opening can be enlarged with Kelly forceps and when a finger is inserted the "lung" (balloon) is palpated. Next, insert a chest tube through the opening and secure using silk suture.

Impact/Effectiveness: The biggest impact of this innovation is that this model can be constructed for about $10 whereas a commercially available task trainers cost $4,300 and the replacement inserts (which endure 6 sticks) cost $184 each.3 It simulates some of the important landmarks for ensuring proper placement, with direct visualization through the clear jug. Learners can also experience some of the potential complications of chest tube placement such as, injury to lung tissue, misdirection of the tube, and tunneling under the skin.

This model was used during our recent Emergency Medicine Symposium where over 50 physicians and advance care practitioners participated in a chest tube skills station. At a low-cost we were able to provide a realistic model for multiple learners to use. The feedback from this skills station was overwhelmingly excellent.

Figure 1.