Checklist of clinical actions to document technical performance during a scenario. These were called Critical Performance Elements (CPE).

Below are the CPEs and the corresponding acceptable or unacceptable clinical actions associated with the CPEs.

**CPEs (those assessed by BOTH real-time and video raters are italicized)**

**Laparoscopic surgery with retroperitoneal hemorrhage**

|  |  |
| --- | --- |
| **CPE** | **ACCEPTABLE/UNACCEPTABLE ACTIONS** |
| *Administers IV fluids (open wide or deliberate bolus)* | ACCEPTABLE:   * States / verbalizes that they are giving a fluid bolus, IV bolus, or “volume” * Opens up fully the IV roller clamp. * Raises IV pole or squeezes IV bag * Touches the roller clamp, stopcock, IV tubing *and* verbalizes need for fluid/volume |
| *Administers vasopressor (phenylephrine - first dose 50-200 mcg or ephedrine - 5-10 mg)* | ACCEPTABLE:   * Actually administers phenylephrine in a reasonable dose (<200 mcg per administration) * Actually administers ephedrine in a reasonable dose (<10 mg per administration) * Gives a reasonable alternative (e.g., 1–2 U of vasopressin).   STANDARDIZATION NOTE: If they give a drug stating the drug name but do not verbalize the dose then the confederates should query or ask them for a dose then mark as present. |
| Administers supplemental oxygen - Switches to 100% inspired oxygen | ACCEPTABLE:   * Actually turns off the AIR or N2O and delivers oxygen at reasonable flow. * Actually turns up oxygen to high flow (but forgets to turn down air/N2O) * Touches the oxygen knob on the anesthesia machine while verbalizing need for increased oxygen. * Verbalizes that they are increasing the concentration of oxygen to 100% but neglects to do so. * STANDARDIZATION NOTE: sometimes it can be hard to see adjustments in the vaporizer or flow meters in some circumstances. Therefore, we have decided to assume that if the inspired/end-tidal levels are adjusted that someone in the control room saw/heard the participants make the appropriate changes |
| *Decreases volatile agent to less than 1 MAC* | ACCEPTABLE:   * Actually decreases the volatile anesthetic concentration on the anesthetic vaporizer * Verbalizes that they are decreasing the concentration of the volatile anesthetic * STANDARDIZATION NOTE: sometimes it can be hard to see adjustments in the vaporizer or flow meters in some circumstances. Therefore, we have decided to assume that if the inspired/end-tidal levels are adjusted that someone in the control room saw/heard the participants make the appropriate changes |
| *Examines patient [Depending on situation at time, might include: Asks about rash or skin color or listens to lungs or feels lung compliance]* | ACCEPTABLE:   * Observes patient as is conversing with her * Places hands on patient and speaks with her * Listens to patient's lungs * Asks what the circulating nurse what they're seeing with regard to the patient’s status |
| *Notifies surgeon/team about clinical situation* | ACCEPTABLE:   * Communicates with the surgeon/team about the presence of hypotension * Communicates with the surgeon/team that the blood pressure is low despite treatment * Discusses with the surgeon/team the possibility of anaphylaxis (e.g., listens to lungs for wheezing and clarifies with the team) or CO2 embolism * Asks surgeon/team about blood loss (e.g., asks surgeon to examine abdomen for source of blood loss) AND communicates that the patient is hypotensive. |
| Requests surgeon to de-sufflate the abdomen | ACCEPTABLE:   * Asks the surgeon what the insufflation pressure is AND either:   + Makes the surgeon completely desufflate the abdomen and take out the laparoscopic instruments; or   + Makes the surgeon decrease the insufflation pressure AND recycles blood pressure to check if desufflation has an effect on the hypotension   UNACCEPTABLE:   * To ask the surgeon to desufflate the abdomen but not follow through on the request (it needs to happen) |
| Calls for first responder | ACCEPTABLE:   * Needs to specifically ask for ‘another anesthesiologist’ or that person by name. |
| Briefs first responder on situation | ACCEPTABLE:   * Discusses the current clinical situation with the FR and either: * Asks FR for input on the current situation; OR * Assigns FR one or more specific tasks   UNACCEPTABLE:   * To assign tasks to the FR without briefing them or asking for input on the situation |
| Administers additional vasopressor as hypotension persists | ACCEPTABLE:   * Actually gives an additional dose of phenylephrine in a reasonable dose (<200 mcg per administration) * Actually administers epinephrine in a reasonable dose (<40 mcg per administration) * Gives a reasonable alternative (e.g., 1–2 U of vasopressin or small doses of norepinephrine).   STANDARDIZATION NOTE: If they give a drug stating the drug name but do not verbalize the dose then the confederates should query or ask them for a dose then mark as present. |
| *Requests for delivery of blood to OR for transfusion* | ACCEPTABLE:   * Asks for trauma blood OR the initiation of the massive transfusion protocol * Asks for Type O blood (Rh negative or positive) * Asks for Cross-matched blood and subsequently asks for type-specific blood.   UNACCEPTABLE:   * To ask for a Type & Screen or Cross-match but NOT subsequently ask for some kind of blood to be delivered once told it will be 30 minutes for cross-matched blood. * To ask for blood but not follow through OR to wait for the cross-matched blood without getting other blood in the room.   STANDARDIZATION NOTE: The team should be told that blood bank says the patient has circulating antibodies and they need 30 min to obtain cross-matched blood. |
| Discusses clinical concerns with surgeon | ACCEPTABLE:   * Communicates with the surgeon that the patient is hypotensive despite treatment AND then either:   + Asks surgeon about blood loss   + Asks surgeon to examine abdomen for source of blood loss |
| Double-checks blood with another clinician prior to its administration | ACCEPTABLE   * Goes through the appropriate actions to check the blood with another qualified clinician (i.e., anesthesiologist or circulating nurse) |
| *Inserts additional venous access* | ACCEPTABLE:   * Recognizes the need for additional venous access AND either inserts (actually goes through the motions) the second IV themselves OR asks the circulating nurse to insert the IV   STANDARDIZATION NOTE: It is acceptable for the circulating nurse to insert the IV. In some Centers, when the confederate nurse is asks, s/he does not go through the physical motions before telling the participants that they have a second IV. |
| Starts administering a unit of type-specific or trauma blood | ACCEPTABLE:   * To start the blood by hanging it and verbalizing that they have started the blood * Spiking the blood and starting the blood   STANDARDIZATION NOTE: Not all centers are standardized in this respect. Some sites allow participants to hang the blood and not spike it while other centers expect the participants to spike the blood. |
| *Requests surgeon to open the abdomen* | ACCEPTABLE:   * Asks the surgeon to open the abdomen to control the retroperitoneal hematoma |
| *Requests primary surgeon to get additional surgeon help* | ACCEPTABLE:   * Asks the surgeon to obtain additional help if he says that he is unable to control the bleeding or unable to open the abdomen * Specifically asks that a vascular or trauma surgeon be called to the OR |

**Sedation for gynecologic procedure with local anesthetic toxicity**

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| --- | --- |
| **CPE** | **ACCEPTABLE/UNACCEPTABLE ACTIONS** |
| Assesses patient mental status (e.g., talks to the patient) | ACCEPTABLE:   * Talks to the patient specifically about ongoing problems (“How are you doing?” “How do you feel?” “What’s wrong?”)   AND   * Comments about decreased mental status, ask surgeon or nurse about baseline mental status or if this is a change in mental status.   UNACCEPTABLE   * Talks to the patient but does not question the fact that they are groggy or moaning. * Does not talk to the patient but asks nurse or surgeon about mental status |
| Assesses patient physiological status (e.g., checks vital signs) | ACCEPTABLE:   * Observes and/or touches the monitors * Cycles the blood pressure cuff OR asks that the blood pressure cuff be cycled * Mentions relevant vital signs |
| *Confirms with surgeon what drugs were administered on the field (including doses)* | ACCEPTABLE:   * Talks with the surgeon about what drug(s) were used to perform the block   AND   * Clarifies what the total amount of local anesthetic was used for the block (volume AND concentration)   STANDARDIZATION NOTE:   * Do not give credit if the surgeon volunteers the information. All the surgeon is allowed to say without being asked is “I did my usual block”. Additional information can come from surgeon or nurse but only after a specific query from the participant. |
| Confirms with nurse what IV drugs were administered (including doses) | ACCEPTABLE:   * Asks the nurse what drugs were used to sedate the patient   AND   * Clarifies what were the doses of fentanyl and versed that were administered   UNACCEPTABLE:   * Do not give credit if the nurse volunteers the dose information without being asked. |
| Administers supplemental oxygen | ACCEPTABLE:   * Actually turns on oxygen flow and delivers oxygen at reasonable flow rate. * Actually turns *up* oxygen to higher flow. * Touches the oxygen knob on the anesthesia machine while verbalizing need for increased oxygen. * Verbalizes that they are increasing the concentration of oxygen to 100% but neglects to do so. |
| *Announces the presence of intermittent ventricular tachycardia* | ACCEPTABLE:   * Verbally states that the patient is having runs of ventricular arrhythmia (V Tach) * Treats with antiarrhythmic (i.e Lidocaine or Amiodarone) implying that they have recognized the presence of V-Tach   UNACCEPTABLE:   * Calls it ectopy, PVC’s, triplets or similar |
| *Calls for First Responder* | ACCEPTABLE:   * Specifically asks for ‘another anesthesiologist’ or that person by name. |
| *Notifies surgeon/team about clinical situation* | ACCEPTABLE:   * Verbalizes (loud enough for surgeon to hear) that the patient is hypoxic * Verbalizes that the patient is seizing * Verbalizes that the patient is having ventricular arrhythmia or ventricular tachycardia * Verbalizes that the patient is hypotensive   BEST PERFORMANCE: Addresses surgeon by name, looks right at surgeon while discussing, and/or engages surgeon in conversation regarding concerns or the situation. |
| *Administers appropriate dose of sedative/hypnotic to stop the seizure (starting with small initial dose and titrating to effect as needed)* | ACCEPTABLE   * States that they are administering propofol or midazolam   AND   * States that they are using it to control seizure   UNACCEPTABLE   * If they give the drug after they have been informed that the patient is SEIZING – they have to recognize the seizure and then treat it * They have not recognized the seizure and they are using the drug as a sedative * They are using propofol to induce anesthesia and the seizures are controlled |
| Requests surgeon to stop procedure | ACCEPTABLE   * Asks the surgeon to stop the procedure so that they can get control of the situation. * Asks the surgeon to stop the procedure because it is unsafe to proceed. * Asks the surgeon to stop the procedure because the patient is unstable.   UNACCEPTABLE   * Asks the surgeon to stop during initial handover to get control of the case |
| Administers initially small doses of a vasopressor (e.g; phenylephrine ≤ 200mcg, ephedrine < 25mg, epinephrine < 50 mcg) | ACCEPTABLE:   * Actually administers phenylephrine in a reasonable dose (<200 mcg per administration) * Actually administers ephedrine in a reasonable dose (<10 mg per administration) * Gives a reasonable alternative (e.g., 1–2 U of vasopressin).   STANDARDIZATION NOTE: If they give a drug stating the drug name but do not verbalize the dose then the confederates should query or ask them for a dose then mark as present. |
| Calls for crash cart and/or defibrillator | ACCEPTABLE:   * Verbally requests that the crash cart be brought into the room   STANDARDIZATION NOTE: In some centers where the crash cart is already present in the room, the participant will have to ask for the crash cart to be brought closer to the bedside |
| Discusses clinical concerns with surgeon | ACCEPTABLE:   * Talks to the surgeon about the diagnosis being LAST * States that the problems or patient’s current condition is due to the local anesthetic getting into the blood stream   UNACCEPTABLE:   * States that the problems are due to the block (without being specific) … unless immediately asks for lipid emulsion * States that the problem is due to the local anesthetic (without being specific as to how) … unless immediately asks for lipid emulsion. |
| *Manages airway with oxygen and assisted (or controlled) ventilation and places an advanced airway device* | ACCEPTABLE:   * Administers oxygen by AMBU bag and assists/controls ventilation   AND   * Attempts to place an advanced airway device (either ETT or LMA)   OR   * Administers oxygen by AMBU bag and assists/controls ventilation |
| Requests nurse/pharmacist to obtain or provide lipid emulsion | ACCEPTABLE:   * Verbalizes the need for lipid emulsion AND asks the nurse to obtain or call for lipid emulsion * Verbalizes the need for “intralipid” AND asks the nurse to obtain or call for “intralipid”.   STANDARDIZATION NOTE: Generally, the nurse or pharmacist should ask the participant what concentration or percentage they want in which case they should either say 20% or ask the pharmacist for recommendation. |
| Administers additional vasopressor for persistent hypotension (e.g.; epinephrine - minimum 20 mcg but not over 250 mcg) | ACCEPTABLE:   * Actually gives an additional dose of phenylephrine in a reasonable dose (<200 mcg per administration) * Actually administers epinephrine in a reasonable dose (<40 mcg per administration) * Gives a reasonable alternative (e.g., 1–2 U of vasopressin or small doses of norepinephrine).   STANDARDIZATION NOTE: If they give a drug stating the drug name but do not verbalize the dose then the confederates should query or ask them for a dose then mark as present. |
| Instructs team member(s) to initiate and maintain chest compressions with minimal interruption (BLS) | ACCEPTABLE:   * Instructs one of the team members to start CPR OR initiates CPR themselves (NB: It is not optimal for team leader to do chest compressions) |
| *Administers initial dose of lipid emulsion of 100 mL (1.5 ml/kg) either via syringe or bolus infusion* | ACCEPTABLE:   * States that they are giving 100ml of lipid emulsion * States that they are giving 1.5ml/kg of lipid emulsion * States that they are going to give the entire bag of lipid emulsion |
| *Defibrillates per ACLS protocol* | ACCEPTABLE:   * Connects the defibrillator, charges to the correct joules (e.g., 200J biphasic) and administers a shock to the patient.   UNACCEPTABLE:   * Using the AED mode of the defibrillator |
| After diagnosis of LAST, adjusts ACLS management as recommended by ASRA (Reduced dose epinephrine of 200 mcg instead of 1 mg, avoid use of vasopressin, calcium channel and beta-blockers, and local anesthetics) | ACCEPTABLE:   * Verbalizes that they are adjusting medication doses due to the diagnosis of LAST.   AND/OR   * Administers reduced doses of epinephrine (e.g., 200 mcg)   AND   * Does not administer vasopressin, calcium channel blockers, beta-blockers, or local anesthetics |

**Endoscopic retrograde cholangiopancreatography with post-operative malignant hyperthermia**

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| **CPE** | **ACCEPTABLE/UNACCEPTABLE ACTIONS** |
| *Assesses patient mental status (e.g., talks to the patient).* | ACCEPTABLE:   * Talks to the patient and asks about ongoing problems |
| Assesses patient physiological status (e.g., checks vital signs.) | ACCEPTABLE:   * Observes and/or touches the monitors * Cycles the blood pressure cuff or asks to cycle the blood pressure cuff * Mentions relevant vital signs |
| *Examines patient [Observes patient as conversing with her; Places hands on patient; Listens to patient's lungs, asks what they're seeing]* | ACCEPTABLE:   * Observes patient as conversing with her * Places hands on patient and speaks with her * Listens to patient's lungs * Asks what the bedside nurse what they're seeing |
| Reviews patient's anesthesia record and preoperative history | ACCEPTABLE:   * Observes and/or handles anesthesia record and pre-op records * Actively participates during handover with the bedside nurse and checks the anesthesia / pre-op records during handover   NOTE:   * The bedside nurse should cue the HS to the fact that these records are available if they do not realize it] |
| Discusses clinical concerns with GI doc | ACCEPTABLE:   * Talks to the GI Doc and tells him about the patient’s current status * Tries to elicit information from GI doc about the patient, past medical history and or intra-op procedure |
| Discusses concern about this being MH with nurse/team members | ACCEPTABLE:   * Verbally states that they are concerned that this may be malignant hyperthermia (or MH) * Asks the nurse to obtain the malignant hyperthermia/MH cart or dantrolene * Asks the nurse to call the MHAUS hotline |
| *Calls for First Responder* | ACCEPTABLE:   * Needs to specifically ask for ‘another anesthesiologist’ or that person by name. |
| *Requests that labs be drawn [minimum of an ABG and potassium]* | ACCEPTABLE:   * Asks the bedside nurse or FR (or obviously tries on own) to get an ABG.   NOTE:   * Some participants will state “and with everything that is available” or something to that effect. What we have realized during debrief is that at a lot of centers an “ABG” routinely includes the common electrolytes. So we have been giving credit if the participant asks for the ABG. |
| Administers IV fluids (open wide or deliberate bolus) | ACCEPTABLE:   * States / verbalizes that they are giving a fluid bolus, IV bolus, or “volume” * Opens up fully the IV roller clamp. * Raises IV pole or squeezes IV bag * Touches the roller clamp, stop cock, IV tubing and verbalizes need for fluid/volume |
| *Requests MH cart (or box) containing dantrolene* | ACCEPTABLE:  Asks for the MH Cart, MH box, Dantrolene |
| Reads/uses MH protocol from poster | ACCEPTABLE:   * Seen using the paper or poster as verbalizes MH-responsive actions   NOTE:   * Sometimes the MH cart is out of sight and we are unable to see if the participant has used the poster or not. Mark as can’t score for these instances |
| Dantrolene is mixed in appropriate diluent (sterile water) and volume (60 ml per vial) | ACCEPTABLE   * The participants have to state both elements   + Diluent is sterile water   + Volume is 60 ml |
| *Announces that the initial dose of dantrolene is 2.5 mg/kg* | ACCEPTABLE:   * The patient weighs 64 kgs – participants may state that the total dose is 160 mg * Dantrolene dose required is 2.5 mg/kg * We will need 8 vials of Dantrolene   NOTE   * Math in the head is difficult so if they get it close that’s OK |
| *Manages airway with oxygen and assisted (or controlled) ventilation and attempts to place an advanced airway device* | ACCEPTABLE:   * Escalates to mask oxygen and attempts to place an advanced airway device (either ETT or LMA) * Escalates to mask oxygen and continues with bag-mask ventilation (e.g., if unable to insert ETT secondary to trismus) but assures ventilation by either commenting on chest rise or bilateral breath sounds |
| *Treats hyperkalemia with one of the following: calcium, insulin + dextrose, bicarbonate, and/or beta-agonists* | ACCEPTABLE:   * Recognizes hyperkalemia and treats hyperkalemia using at least one of the agents |
| *Treats hyperthermia with active cooling (after temperature exceeds 37.5°C)* | ACCEPTABLE:   * Asks the nurse what the temperature is asks for active cooling measures |
| Gives at least one vial of dantrolene | ACCEPTABLE:   * Must observe actual administration into IV of mannequin of what appears to be most of a vial of dantrolene.   NOTE:   * In some cases, the contents of several incompletely diluted vials of dantrolene may be administered. This may be acceptable. |
| Asks nurse to place a foley urinary catheter | ACCEPTABLE:   * Participants asks the nurse for a foley catheter   NOTE:   * Some centers have been hiding the foley out of sight and when the participants ask for the foley catheter the nurse shows the foley to them (which typically contains red urine). |
| Checks the color of the urine and/or asks to send urine specimen to lab | ACCEPTABLE:   * Verbally notes red colored urine * Specifically asks that urine sample be sent to lab |

**Small bowel obstruction with unstable atrial fibrillation followed by a myocardial infarction**

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| **CPE** | **ACCEPTABLE/UNACCEPTABLE ACTIONS** |
| Surveys anesthesia workspace | ACCEPTABLE:   * Observes and/or touches at least two (three) of the following: monitors, patient, drugs, airway equipment, IVs, surgical field. * Cycles the blood pressure cuff or asks to cycle the blood pressure cuff * Checks the ventilator, makes adjustments * Asks about IV’s and gauges |
| Reviews patient's anesthesia record and preoperative history | ACCEPTABLE:   * Observes and/or handles anesthesia record post-handover * Actively participates during handover with the outgoing anesthesiologist using the pre-operative records   UNACCEPTABLE:  If checks anesthesia records for first time during handover to the First Responder |
| *Announces that the rhythm is or could be atrial fibrillation* | ACCEPTABLE:   * Verbally states that it is atrial fibrillation or Afib. * Verbally states that it is an “irregularly irregular” rhythm. * Important to notice irregularity and sudden onset of event.   UNACCEPTABLE:   * States that it is a supraventricular tachycardia without ever mentioning irregularity. * States patient is “tachycardic” without clarifying the nature of tachycardia |
| *Announces that the rhythm is unstable or that there is hypotension* | ACCEPTABLE:   * States out loud that the patient (or the hemodynamics) is unstable. * States out loud that the blood pressure is low or the patient is hypotensive * Treats the patient with pressors. * Treats the patient with appropriate medications to slow the HR. (implication that it will improve the blood pressure) |
| Administers vasoconstrictor of choice (phenylephrine - < 200mcg) | ACCEPTABLE:   * Actually gives phenylephrine in a reasonable dose (< 200 mcg per administration) * If they give an alternative – e.g. 1 – 2 U Vasopressin. * If they give the drug but do not verbalize the dose and the confederates do not query / ask them for a dose – mark as present. (Standardization error) |
| Administers IV fluid bolus | ACCEPTABLE:   * States / verbalizes that they are giving a fluid bolus, IV bolus, or “volume” * Opens up fully the IV roller clamp. * Raises IV pole or squeezes IV bag * Touches the roller clamp, stop cock, IV tubing and verbalizes need for fluid/volume |
| Administers drugs to slow the heart rate | ACCEPTABLE:   * Administers a beta-blocker, adenosine or amiodarone. * If they give the drug but do not verbalize the dose and the confederates do not query / ask them for a dose – mark as present. (Standardization error) |
| *Notifies surgeon/team about clinical situation* | ACCEPTABLE:   * Communicate with the surgeon/ team about unstable state despite treatment – fluid and/or phenylephrine and prior to cardioversion * Communicates about the blood pressure being low despite treatment * Communicates about Heart Rate being high despite treatment |
| *Calls for crash cart and/or defibrillator* | ACCEPTABLE:   * Verbally requests that the crash cart be brought into the room   STANDARDIZATION NOTE: In some centers where the crash cart is already present in the room, the participant will have to ask for the crash cart to be brought closer to the bedside |
| *Performs effective cardioversion using appropriate synchronized settings (≥120J biphasic)* | ACCEPTABLE:   * If they use the correct energy and perform synchronized cardioversion and they have talked about cardioverting prior to being prompted by the surgeon.   UNACCEPTABLE:   * States that we might need to cardiovert but, does not cardiovert until prompted by the surgeon. |
| *Calls for First Responder* | ACCEPTABLE:  Specifically asks for ‘another anesthesiologist’ or that person by name. |
| Notifies the surgeon/team about restoration of NSR (and improvement in BP) following cardioversion | ACCEPTABLE:   * Informs surgeon that “vitals are looking better” or something to that effect *implying restoration of perfusion*.   UNACCEPTABLE: |
| *Notifies surgeon/team about ST elevation* | ACCEPTABLE:   * Informs surgeon that there is ST elevation * Informs surgeon that there is ongoing ischemia * Informs surgeon that there is ongoing Myocardial infarction or infarction |
| *Discusses clinical concerns related to anti-coagulation with the surgeon* | ACCEPTABLE:   * Goal - Recognize STEMI and the need for anti-coagulation. * Participants need to verbalize the need for anticoagulation – ASA, Plavix, Heparin, TPA * If the concerns are discussed with the first responder and not the surgeon then mark as positive * If concerns are discussed with the cardiologist when he calls mark as positive |
| *Requests that cardiologist be contacted* |  |
| Discusses treatment options with cardiologist and/or surgeon including at least two of the following:  a. Transfer to cardiac catheterization laboratory,  b. Heparin infusion in the OR,  c. Additional hemodynamic support,  d. Intraaortic ballon counter-pulsation,  e. Amiodarone infusion in the OR,  f. Use of TEE or TTE | ACCEPTABLE:   * If they discuss at least two of the treatment options either with   + Surgeon   + Cardiologist   + Team (first responder and hot seat) * If the Cardiologist suggests it – the team has to demonstrate behavior befitting a consultant and discuss the treatment option with the cardiologist   UNACCEPTABLE:   * If the cardiologist or surgeon suggests it and the teams decides to follow orders |

**RATING GUIDE FOR AHRQ MOCA GRANT PROJECT**

Raters will rate two types of performance during a simulation scenario: the Medical/technical performance and the Behavioral (or Non-technical skill-NTS).

**MEDICAL/TECHNICAL SCORING**

Raters will use a checklist of about 10 clinical actions to document technical performance during a scenario.

* Check off these items either as they happen, or, at the latest, immediately after the scenario finishes
* Check off these items regardless of who performs them (the hot seat (HS) or first responder (FR))
* You are not to rate the quality, adequacy, accuracy or any other qualitative assessment of performing the action. Simply rate it as done or not.
* The site PIs will provide a set of rules to the RTRs that describe how some of the actions are defined (for e.g., ‘giving a drug’ is defined as connecting the syringe to the stopcock, turning the stopcock, and pushing the plunger on the syringe)
* Each scenario has a paper form with the items raters are to score. Please fill it out completely (Rater name, Scenario, Site, Date). The site PI will be responsible for recording the Encounter ID on the form. Please return this rating form to the site PI after you have completed your rating.
* Your demographics (degrees, years of practice, gender, and perhaps a few other items) will be recorded.

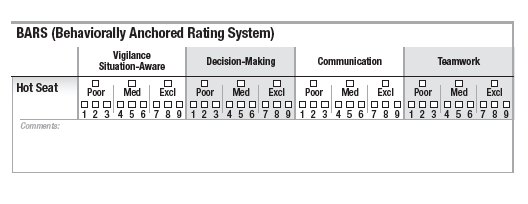
**THE BEHAVIORAL/NON-TECHNICAL RATING SYSTEM**

In addition to the technical elements of performance, the RTRs will rate the behavioral, or non-technical skills (NTS) of the scenario’s Hot Seat participant. The four categories of NTS performance to be rated are: vigilance/awareness, dynamic decision-making and task management, communication, and teamwork.

Raters must observe the entire scenario before making NTS and holistic ratings. Equal weight should be given to behaviors at all periods of the scenario, and raters should be wary of being biased either by early behaviors (interpreting later events with “haloes” or “pitchforks” established early) or by the occurrence of late behaviors (which may be the most recent in memory before the rating is assigned).

**The Behavioral/Non-technical Rating System MATRIX**

RTRs will use a BARS (Behaviorally Anchored Rating System) to score the NTS. The BARS is based on the MATRIX shown on the following page that details the aspects to be considered in making each rating. Immediately below is an excerpt from the “AHRQ MOCA Rater Form” itself showing how the rater would then enter the ratings, using terms and numbers that correspond to those shown in the MATRIX.



**(PLEASE LOOK AT THE BARS MATRIX ON THE FOLLOWING PAGE)**

The first row shows the **4 CATEGORIES** of Behavioral/Non-Technical performance:

• Vigilance/Awareness

• Dynamic Decision-making and Task Management (Abbreviated as ‘Decision-Making’)

• Communication

• Teamwork

Row 2 of the NTS BARS Rating Matrix provides a set of DESCRIPTORS for three gross levels of performance for each of the **CATEGORIES** (“Poor, Med (for ‘medium’), and Excl (for ‘excellent’). We call a gross level of performance a **BIN**. Row 3 shows that within each **BIN** there are three possible numbers that can be chosen as a sub-score for the participant’s performance in that **BIN**. These sub-scores can be thought of as adding a “-“, neutral, or “+” to the grade corresponding to that **BIN**.

The matrix cells each describe the kinds of performance elements for a given **CATEGORY** that would place someone’s performance rating in that BIN. The lists of performance items in each descriptor are presented as examples. They are **NOT** to be rated individually, nor will they all be present or observable/observed for any given scenario or for any given candidate. The descriptors “paint a picture” of the types of behaviors likely to be seen for a given performance domain and a given level **(BIN)** of performance. The descriptors should allow raters to match what they observed to the general nature of what is described at the different levels.

**BARS MATRIX**

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To qualify for a rating within one of the BINS, the OVERALL performance should be assessed as most similar to the kinds of behaviors listed in that BIN’s descriptors. Performances at the top level are expected to show frequent and consistent behaviors similar to those described, but there may be occasional lapses to lower levels. Similarly, performances at the bottom level are expected to show frequent or consistent behaviors similar to those described but with occasional performance at higher levels. At the middle level, some excursions to higher and lower levels may occur.

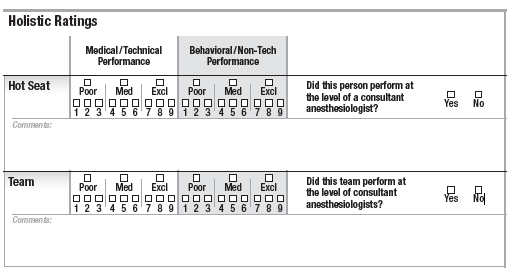
To make the rating of NTS, the rater should:

1. Watch the entire scenario performance, perhaps taking notes regarding performance in the 4 domains
2. Choose the bin (‘Poor, Med, or Excl’) that best describes the overall performance of the individual or team being rated
3. Then decide upon the sub-score within that bin, by determining if the observed performance was closest to the bottom performance belonging in that BIN, in the middle of that bin’s performance, or closer to superior behavior within that bin. A higher frequency or consistency of behaviors in one or the other direction may influence the choice of the numerical rating. The occurrence of occasional outliers of behavior outside the bin may also influence the choice.

Using ‘vigilance’ as an example, a real-time rater may watch a participant initially get stuck in a fixation error, but then reasonably quickly pick up on another clinical clue and start to develop a broader differential diagnosis; they may ask for other data (a blood gas, for example), interpret that information correctly, but end by getting distracted by artifact on the ECG. After observing the entire performance, the RTR determines if the performance was poor or excellent. If was neither of those, they determine that the ‘vigilance’ performance was medium. In this example, the RTR might think that the person’s ‘vigilance’ score was closest to excellent, and make a determination that that score should be in the ‘Excl’ bin. Now, the RTR considers the degree of excellence (by evaluating the amount of time that the participant’s vigilance was excellent, and the degree and magnitude of lapses into ‘poor’ or ‘med’ behavior displayed), and determines if the participant’s vigilance was closer to poor-excellent, superior-excellent or if determined to be neither of those, is medium-excellent. In this example, the rater determined that there were enough lapses of vigilance that this subject behaved closest to the ‘poor-excellent’ limit, and therefore assigned them a score of 6 for this element of non-technical behavior.

**HOLISTIC AND GLOBAL RATINGS:**

After scoring the individual elements of the HS’ non-technical performance, the RTRs rate the holistic (or overall) medical/technical and non-technical/behavioral performance of the HS and the team (HS & FR) for the whole scenario. These ratings use the same 9-point scale and algorithm for determination as described above – first, the RTR considers the HS’ medical/technical performance in-toto for the scenario, and assigns it to a BIN (it was either poor or excellent, or, if neither of those, then it was medium). Then they pick the relevant sub-score for that BIN. After giving a holistic score for technical performance, the RTR uses the same algorithm to determine the holistic non-technical skill rating. The score sheet (see example below) provides places for a numerical score for each of the two holistic questions.



**Global Rating (Binary Choice)**

Finally, an overall global rating of the HS and team performance (“Did the simulation participant perform as a consultant anesthesiologist?”) is made. For purposes of this question, a consultant anesthesiologist is a physician fully trained in anesthesiology and able to practice completely independently; the term should be considered synonymous with the term "attending anesthesiologist." Tick N for “no” and Y for “yes” on the score sheet. Yes, the question intentionally forces the rater to make a stark choice.

If you have questions about this Guide or how to do real time ratings for this project, please contact one or more of the following individuals:

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