SIMULATION

Anaphylaxis

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ABSTRACT:

Audience: This simulation-based scenario is appropriate for medical students and emergency medicine residents at any level of training.

Introduction: Anaphylaxis is an acute, severe, systemic allergic reaction that is potentially life threatening. The epidemiological characteristics of anaphylaxis are not entirely accurate secondary to underreporting and misdiagnosis. Estimates of lifetime prevalence range from 0.05% to 2%, with rates up to 15% described in the literature, 2% of which have fatal episodes. The incidence is estimated at 0.03% to 0.95%, with 0.002% fatal episodes annually (~1500 annual deaths in the United States). Although described more than 100 years ago, only recently has a definition been described that provides the clinician with specific criteria for diagnosis in the clinical setting. The National Institute of Allergy and Infectious Disease (NIAID) and Food Allergy and Anaphylaxis Network (FAAN) convened a symposium that included representatives from 16 different organizations (including emergency medicine) to establish clinical criteria that would accurately identify cases of anaphylaxis. Anaphylaxis is a true medical emergency. Rapid identification and management of this condition plays a major role in patient prognosis.

Objectives: By the end of this simulation-based session, the learner will be able to: 1) recognize and diagnose anaphylaxis according to the criteria set forth by the NIAID and FAAN symposium 2) discuss the appropriate dose, concentration, and delivery route of epinephrine for anaphylaxis 3) list and discuss the rationale for the second-line therapeutic options used to treat anaphylaxis, and 4) develop an appropriate disposition algorithm to be used when managing anaphylaxis in the clinical setting.

Method: This educational session is a high-fidelity simulation.

Topics: Anaphylaxis, allergy, respiratory distress, epinephrine dosing, anaphylaxis poor prognostic risk factors, emergency department disposition, critical care medicine, simulation.

USER GUIDE

List of Resources:

Learner Audience:
Medical Students, Interns, Junior Residents, Senior Residents, Faculty, Other: Paramedics, Nurses, NPs and PAs

Time Required for Implementation:
Instructor Preparation: 30-60 minutes
Time for case: 7-13 minutes
Time for debriefing: 15-30 minutes

Recommended Number of Learners per Instructor:
2-5

Topics:
Anaphylaxis, allergy, respiratory distress, epinephrine dosing, anaphylaxis poor prognostic risk factors, emergency department disposition.

Objectives:
By the end of this simulation session, the learner will be able to:

1. Recognize and diagnose anaphylaxis according to the criteria set forth by the NIAID and the FAAN symposium.
2. Discuss the appropriate dose, concentration, and delivery route of epinephrine for anaphylaxis.
3. List and discuss the rationale for the second-line therapeutic options used to treat anaphylaxis.
4. Develop an appropriate disposition algorithm to be used when managing anaphylaxis in the clinical setting.

Linked objectives and methods:
Anaphylaxis is an acute, severe, systemic allergic reaction with specific diagnostic criteria that allow the clinician to recognize its many presentations in the clinical setting. This simulation scenario will allow the participant the opportunity to evaluate and manage a critically ill patient presenting with anaphylaxis in a safe, learner-oriented environment that is void of patient risk. Given that the objectives are geared towards shaping behavior in the clinical setting, the simulation environment allows the instructor to leverage the benefits of adult learning theory (for which one premise is that adult learners are self-directed, regulated, and motivated) to create an educational environment using a student-centered approach. Through experiential learning, the student is able to reshape and/or create mental frames during debriefing while simultaneously allowing the instructor to assess performance at the level of "shows how" on Miller's pyramid of clinical competence.

Recommended pre-reading for instructor:
We recommend at a minimum reviewing the practice parameter article on the emergency department diagnosis and treatment of anaphylaxis.[1] We also recommend reading the Summary Report from the Second National Institute of Allergy and Infectious Disease/Food Allergy and Anaphylaxis Network Symposium.[2] The references for these resources, along with additional optional reading is provided under "References/suggestions for further reading" below.

Results and tips for successful implementation:
This simulation scenario was designed for use with a high- or moderate-fidelity human patient simulator. However, the content can also be used in a problem based learning or mock oral board format. The scenario is intended to unfold in real time until the last ~2 minutes of the case where the instructor may leap to the 6-8 hour time frame after initial patient presentation to allow the learner to make a disposition decision for the patient. Running the case real time (i.e. no labs or imaging results will return even if ordered) during the first ~7 – 10 minutes of the scenario is representative of the time frame of managing anaphylaxis in the clinical setting and will require the learner to manage the patient using their clinical skills and reasoning.

This simulation scenario was designed after an actual patient case, has been piloted on over 120 medical students and 25 emergency medicine residents, and contains content that was used in a prospective randomized crossover study comparing the effectiveness of simulation vs. standard didactic training for teaching medical students the evaluation and management of crucially ill patients.[5] This study found simulation training to be superior to didactic lecture for teaching medical students the assessment and management of patients presenting with anaphylaxis. As diagnostic studies have little to no role in the acute diagnosis and management of anaphylaxis, we have found that the most effective and efficient way to implement the scenario is without the use of any diagnostic studies (i.e. labs and imaging) that would not be expected to return results in the first ~10 minutes of managing an actual patient with anaphylaxis in the clinical setting.

References/suggestions for further reading:

1. Campbell RL, Li JT, Nicklas RA, Sadosty AT; Members of the Joint Task Force; Practice Parameter Workgroup. Emergency

department diagnosis and treatment of anaphylaxis: a practice parameter. *Ann Allergy Asthma Immunol*. 2014;113(6):599-608. doi: 10.1016/j.anai.2014.10.007

2. Sampson HA, Munoz-Furlong A, Campbell RL, Adkinson NF Jr, Bock SA, Branum A, et al. Second symposium on the definition and management of anaphylaxis: summary report - second National Institute of Allergy and Infectious Disease/Food Allergy and Anaphylaxis Network symposium. *Ann Emerg Med*. 2006;47(4):373-380. doi: 10.1016/j.jaci.2005.12.1303
3. Gottesman B. Anaphylaxis. *Emergency Medicine Reports.* 2011;32(2):9-19.
4. Tejedor-Alonso MA, Moro-Moro M, Mugica-Garcia MV. Epidemiology of anaphylaxis: contributions from the last 10 years. *J Investig Allergol Clin Immunol*. 2015;25(3):163-175.
5. McCoy CE, Menchine M, Anderson C, Kollen R, Langdorf MI, Lotfipour S. Prospective randomized crossover study of simulation vs. didactics for teaching medical students the assessment and management of critically ill patients. *J Emerg Med*. 2011; Apr 40(4):448-455. doi: 10.1016/j.jemermed.2010.02.026

INSTRUCTOR MATERIALS

Case Title: Anaphylaxis

Case Description & Diagnosis (short synopsis): The patient is a 27- year old male with a history of peanut allergy who presents to the emergency department by ambulance with a chief complaint of abdominal pain, vomiting, and shortness of breath shortly after eating a meal at a nearby Asian restaurant that was cooked using peanut oil. His initial vitals are significant for hypotension, tachycardia, tachypnea, and hypoxia. The patient's physical examination is notable for respiratory distress, hypotension, and a diffuse urticarial rash. The participant is to perform a rapid and focused history and physical examination to arrive at the diagnosis of anaphylaxis and begin treatment immediately thereafter.

Equipment or Props Needed:
High- or moderate-fidelity simulator
Gurney
Crash cart with defibrillator
IV line/infusion pumps
Normal saline
Non-rebreather mask
Cardiac monitor
Blood pressure cuff
Pulse oximeter
Intubation equipment
Labeled drug syringes (optional)
Peak Flow meter (optional)

Confederates needed: This simulation needs at least one confederate (or narrator from the simulation control room). However, if resources permit, separate individuals can take the role of the confederates listed below:
Paramedic
Nurse
Friend

INSTRUCTOR MATERIALS

Stimulus Inventory:
Diagnostic studies have little to no role in the acute diagnosis and management of anaphylaxis; however, the only diagnostic test that may result within the real-time frame of this scenario is a bedside peak expiratory flow, which is only to be provided if ordered by the learner.

#1 Peak flow attempt #1 (120 L/min)

#2 Peak flow attempt #2 (100 L/min)

#3 Patient is unable to attempt peak flow reading a third time

#4 Optional stimuli of picture of patient with urticarial rash (the instructor can also choose to download pictures, of their choosing, from the Internet to be used during this simulation in lieu of or in addition to describing the rash to the participant)

Background and brief information: The patient is a 27-year old male with a history of peanut allergy who presents to the emergency department by ambulance with anaphylaxis after eating a dish that was cooked using peanut oil.

Initial presentation: His initial vitals are significant for hypotension, tachycardia, tachypnea, and hypoxia. The patient's physical examination is notable for significant respiratory distress, hypotension, and a diffuse urticarial rash.

How the scenario unfolds: The patient presents with signs and symptoms consistent with anaphylaxis and the participant should rapidly obtain a focused history and physical examination and begin management accordingly. The majority of the initial history is to come from the paramedic as the patient can only speak in 2 – 3 word sentences owing to significant respiratory distress. The paramedic reports that they responded to a restaurant for this patient who had an initial complaint of abdominal pain, vomiting, and shortness of breath. The restaurant is less than 3 minutes from the emergency department and the only interventions started by the paramedic was oxygen by face mask and 250 mL of normal saline. No further useful history is obtained from the paramedic (including the fact that the patient has a peanut allergy).

The patient initially continues to decline with worsening respiratory distress and tachycardia. The participant is to gather enough information to make the diagnosis of anaphylaxis and immediately administer epinephrine, followed by the second-line therapies (i.e., H_1/H_2

blockers, bronchodilators, steroids, IV fluids, etc) for this condition. If epinephrine is given within a timely manner, the patient will have improved symptoms and will be able to give his full medical history that is significant for asthma and peanut allergy. If the participant does not recognize the patient is in anaphylaxis or only administers second-line therapies without epinephrine, the patient will deteriorate into respiratory arrest with pulseless electrical activity and will require resuscitation according to ACLS guidelines. An optional prompt for novice learners includes the use of a confederate who will serve as the patient's friend who was present at the restaurant when the incident occurred. The friend will arrive to the scenario early in the course if the participant does not recognize anaphylaxis (and before respiratory arrest) and will provide the history of the patient consuming an Asian dish that was prepared using peanut oil.

The first dose of epinephrine significantly improves the patient's symptoms, although without complete resolution. The participant can give another dose of epinephrine or start an epinephrine drip. During the last ~2 minutes of the scenario, the instructor is to inform the participant that 6 hours have passed since initial patient presentation. The patient still has scattered wheezing, but is no longer in respiratory distress and is speaking in full sentences. The patient is also still mildly tachycardic. The case ends when the participant either spontaneously (or when prompted by the nurse) indicates an admitting service and level of care for the patient.

Critical Actions:

1. Assess airway, breathing, circulation
2. Establish 2 large bore IV catheters
3. Order fluid resuscitation (at least 1 Liter)
4. Place patient on oxygen
5. Place patient on monitors (cardiac and pulse oximeter)
6. Make diagnosis of anaphylaxis
7. Administer epinephrine (0.3 – 0.5 mg IM to anterolateral thigh)
8. Order second line therapies for anaphylaxis
9. Make the appropriate disposition for the patient (medicine/telemetry or higher)

INSTRUCTOR MATERIALS

Case title: Anaphylaxis

Chief Complaint: 27-year-old male presents to emergency department by ambulance with a chief complaint of abdominal pain, vomiting, and shortness of breath after eating.

Vitals: *HR* 155 *BP* 70/40 *RR* 35 *Temp* 37.8 *O2Sat* 91%

General Appearance: 27-year-old male, ill appearing, diaphoretic, in respiratory distress

Primary Survey:

- **Airway:** respiratory distress, stridor, 2-3 word sentences
- **Breathing:** tachypnea, bilateral shallow respirations
- **Circulation:** faint, thready, tachycardic pulse, awake, follows commands

History:

- **History of present illness:** 27-year-old male presents by ambulance after eating at a restaurant. Patient shortly developed abdominal pain, nausea/vomiting, shortness of breath and diaphoresis. Chief complaint from patient is shortness of breath.
- **Past medical history:** Asthma
- **Past surgical history:** Appendectomy
- **Patients medications:** Albuterol inhaler
- **Allergies:** NKDA
- **Social history:** occasional alcohol
- **Family history:** asthma, eczema

Secondary Survey/Physical Examination:

- **General Appearance:** ill appearing, diaphoretic, in respiratory distress
- **HEENT:**
    - **Head:** Normocephalic, atraumatic
    - **Eyes:** within normal limits
    - **Ears:** within normal limits
    - **Nose:** within normal limits
    - **Throat:** stridor, speaking in 2 – 3 word sentences
- **Neck:** suprasternal retractions
- **Heart:** tachycardic, regular rhythm, no murmurs, rubs or gallops
- **Lungs:** rapid, shallow respirations with longer expiratory phase, bilateral wheezing

INSTRUCTOR MATERIALS

- **Abdominal/GI:** soft, minimal epigastric tenderness, no rebound or guarding
- **Genitourinary:** within normal limits
- **Rectal:** within normal limits
- **Extremities:** within normal limits
- **Back:** within normal limits
- **Neuro:** awake, alert and oriented x3, follows commands, moves all extremities
- **Skin:** diffuse urticarial rash to body
- **Lymph:** within normal limits
- **Psych:** within normal limits

Results:

The stimuli of peak flow (if ordered by participant) can be given verbally by the nurse or overhead by the scenario narrator. (All other orders taken by the nurse will not return for the duration of the real-time scenario. Note: If participant requests the laboratory or radiology results when the instructor fasts forward the case 6 hours in the future for disposition, the nurse can report all the results as within normal limits)

OPERATOR MATERIALS

SIMULATION EVENTS TABLE:

Minute (state)	Participant action/ trigger	Patient status (simulator response) & operator prompts	Monitor display (vital signs)
0:00 (Baseline)	Entering room with Emergency Medical Services (EMS)	Patient in severe respiratory distress, with rapid shallow breathing, stridor, and diaphoresis	T: 37.8 HR: 155 BP: 70/40 RR: 35 O2: 91% RA
1:00	Obtain focused H&P Assess ABCs Start 2 large bore IVs Place patient on oxygen Monitors (cardiac and pulse ox)	Patient will continue to be in respiratory distress with stridor and wheezing, only to give limited history Paramedics note of chief complaint of abdominal pain, vomiting, and shortness of breath. They note that the patient does have history of asthma if asked. They did not see the patient's rash.	T: 37.8 HR: 155 BP: 70/40 RR: 35 O2: 95 % with oxygen O2: 89% without
3:00	Begin treatment for anaphylaxis Labs ordered (any labs ordered will not return during scenario) Imaging ordered (any imaging will not be performed during scenario owing to patient's critical condition.)	Patient with worsening respiratory symptoms and hemodynamics Patient should have treatment for anaphylaxis started by this time If participant does not begin treatment for anaphylaxis, can have confederate (patient friend) enter case and give history of asthma and allergy to peanuts to allude to the diagnosis Peak flow reading available only if ordered	T: 37.8 HR: 165 BP: 75/43 if IV fluids started BP: 65/35 if no IV fluids RR: 30 with oxygen RR: 40 without oxygen O2: 95 % with oxygen O2: 89% without

OPERATOR MATERIALS

Minute (state)	Participant action/ trigger	Patient status (simulator response) & operator prompts	Monitor display (vital signs)
5:00	Treatment for anaphylaxis should be administered by this time Epinephrine H_1/H_2 blockers Bronchodilators Steroids IV fluids	Patient with improved symptoms if epinephrine given (even more improvement if in combination with second-line therapies) Patient will go into respiratory arrest if no epinephrine given by this time, even if given second line therapies	Epinephrine given: BP: 110/85 HR: 180 RR: 25 O2: 97% If no Epinephrine: Pulseless electrical activity (PEA)
7:00	Participant should be monitoring for physiologic response to therapy Participant may give additional push dose of epinephrine or start epinephrine drip	Patient improves with epinephrine, but vitals still not all within normal limits Patient comments that shortness of breath has greatly improved and can speak in full sentences Patient reports itchiness of rash has resolved If no epinephrine given patient will be in PEA	BP: 115/90 HR: 110 RR: 15 O2: 99%
9:00	Participant to discuss what they believe occurred to the patient at this time	Patient asks participant what happened and what caused the signs and symptoms he suffered Pt will come out of PEA into sinus tachycardia with pulse if epinephrine given during arrest	BP: 115/90 HR: 110 RR: 12 O2: 99%

OPERATOR MATERIALS

Minute (state)	Participant action/ trigger	Patient status (simulator response) & operator prompts	Monitor display (vital signs)
10:00 – 13:00	If participant does not disposition patient - inform participant that it is now 6 hours into the patients course and have nurse ask participant what service and level of care should the patient be assigned to	Patient disposition to appropriate service and level of care	Same as above

Diagnosis: Anaphylaxis secondary to peanut exposure

Disposition: Medicine service, telemetry level of care (Patient will need ICU level of care if intubated for airway protection if participant failed to administer epinephrine in a timely manner)

DEBRIEFING AND EVALUATION PEARLS

Anaphylaxis

Definition:

- Anaphylaxis is a rapid-onset and potentially life-threatening allergic reaction
- Diagnosis is clinical and anaphylaxis is highly likely when any ONE of the following 3 criteria are fulfilled:[2]
    - 1. Acute onset of illness (min-hrs) with involvement of skin, mucosal tissue, or both, AND at least one of the following:
        - Respiratory compromise
        - Reduced blood pressure or associated symptoms of end-organ dysfunction
    - 2. Two or more of the following that occur rapidly after exposure to a likely allergen for that patient:
        - Involvement of skin/mucosal tissue
        - Respiratory compromise
        - Reduced blood pressure or associated symptoms
        - Gastrointestinal symptoms
    - 3. Reduced blood pressure after exposure to a known allergen for that patient:
        - Infants/children: low systolic BP (age specific) or > 30% decrease in systolic BP
        - Adults: systolic BP < 90 mmHg or > 30% decrease from baseline

Risk factors:

- Patients at risk of severe anaphylaxis include those with:
    - Peanut and tree nut allergy (especially adolescents)
    - Pre-existing respiratory or cardiovascular disease
    - Asthma
    - Delayed administration of epinephrine
    - Previous biphasic anaphylactic reactions
    - Advanced age

Presenting signs and symptoms:

- Dermatologic: ~80-90%
- Respiratory: ~70%
- Cardiovascular: ~45%
- Gastrointestinal: ~45%

DEBRIEFING AND EVALUATION PEARLS

Diagnosis:

- Diagnosis of anaphylaxis is clinical. See diagnostic criteria under definition section

Treatment:

- Airway, Breathing, Circulation
- 2 large bore IVs with fluid bolus
- Oxygen
- Cardiac monitor and pulse oximetry
- Epinephrine is the single most important/effective therapy in anaphylaxis. (IV and drip dosing can be discussed during debrief, however, it is imperative that learners become familiar with and memorize the IM dosing and route of administration)
    - Adult dose: 0.3 – 0.5 mg of 1mg/mL solution IM to anterolateral thigh
    - Infant/child dose: 0.01 mg/kg of 1mg/mL solution IM to anterolateral thigh (max dose of 0.3mg)
- Second line therapies:
    - Antihistamines H_1 and H_2 blockers for preventing symptoms of anaphylaxis
    - Steroids may assist in preventing biphasic or protracted courses
    - Bronchodilators for respiratory symptoms
    - Glucagon (consider for patients on B-blockers with inadequate response to epinephrine)

Disposition:

- No generally accepted or validated rule for all patients
- Considerations for prolonged (>6h) observation include but are not limited to:
    - Severe initial presentation
    - Repeat doses of epinephrine
    - Laryngeal edema
    - Significant respiratory distress
    - Slow response to treatment
    - History of biphasic reactions
    - High risk factors as described in risk factors section
- End of observation: all signs/symptoms resolved → consider discharge with strict return precautions, close follow up, and prescription for EpiPen(s) (at a minimum) and second line therapies (as needed)
- End of observation: abnormal vital signs → admit to telemetry level of care
- End of observation: abnormal vital signs + concern for airway or hemodynamic compromise → admit to ICU level of care

SIMULATION ASSESSMENT

Anaphylaxis

Learner: _____

Assessment Timeline

This timeline is to help observers assess their learners. It allows observer to make notes on when learners performed various tasks, which can help guide debriefing discussion.

Critical Actions	0:00
1. Assess airway, breathing, circulation 2. Establish 2 large bore IV catheters 3. Order fluid resuscitation (≥ 1 L) 4. Place patient on oxygen 5. Place patient on monitors (cardiac and pulse oximeter) 6. Make diagnosis of anaphylaxis 7. Administer epinephrine (appropriate dose & route) 8. Order second line therapies for anaphylaxis 9. Make the appropriate disposition for the patient	

SIMULATION ASSESSMENT

Anaphylaxis

Learner: _____

Critical Actions:

- ☐ Assess airway, breathing, circulation
- ☐ Establish 2 large bore IV catheters
- ☐ Order fluid resuscitation (at least 1 Liter)
- ☐ Place patient on oxygen
- ☐ Place patient on monitors (cardiac and pulse oximeter)
- ☐ Make diagnosis of anaphylaxis
- ☐ Administer epinephrine (0.3-0.5 mg IM to anterolateral thigh)
- ☐ Order second line therapies for anaphylaxis
- ☐ Make the appropriate disposition for the patient (medicine/telemetry or higher)

Summative and formative comments:

Milestones assessment:

	Milestone	Did not achieve level 1	Level 1	Level 2	Level 3
1	**Emergency Stabilization (PC1)**	☐ Did not achieve Level 1	☐ Recognizes abnormal vital signs	☐ Recognizes an unstable patient, requiring intervention Performs primary assessment Discerns data to formulate a diagnostic impression/plan	☐ Manages and prioritizes critical actions in a critically ill patient Reassesses after implementing a stabilizing intervention

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SIMULATION ASSESSMENT

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Learner: _____

	Milestone	Did not achieve level 1	Level 1	Level 2	Level 3
2	**Performance of focused history and physical (PC2)**	☐ Did not achieve Level 1	☐ Performs a reliable, comprehensive history and physical exam	☐ Performs and communicates a focused history and physical exam based on chief complaint and urgent issues	☐ Prioritizes essential components of history and physical exam given dynamic circumstances
3	**Diagnostic studies (PC3)**	☐ Did not achieve Level 1	☐ Determines the necessity of diagnostic studies	☐ Orders appropriate diagnostic studies. Performs appropriate bedside diagnostic studies/procedures	☐ Prioritizes essential testing Interprets results of diagnostic studies Reviews risks, benefits, contraindications, and alternatives to a diagnostic study or procedure
4	**Diagnosis (PC4)**	☐ Did not achieve Level 1	☐ Considers a list of potential diagnoses	☐ Considers an appropriate list of potential diagnosis May or may not make correct diagnosis	☐ Makes the appropriate diagnosis Considers other potential diagnoses, avoiding premature closure
5	**Pharmacotherapy (PC5)**	☐ Did not achieve Level 1	☐ Asks patient for drug allergies	☐ Selects an medication for therapeutic intervention, consider potential adverse effects	☐ Selects the most appropriate medication and understands mechanism of action, effect, and potential side effects Considers and recognizes drug-drug interactions

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Anaphylaxis

Learner: _____

	Milestone	Did not achieve level 1	Level 1	Level 2	Level 3
6	**Observation and reassessment (PC6)**	☐ Did not achieve Level 1	☐ Reevaluates patient at least one time during case	☐ Reevaluates patient after most therapeutic interventions	☐ Consistently evaluates the effectiveness of therapies at appropriate intervals
7	**Disposition (PC7)**	☐ Did not achieve Level 1	☐ Appropriately selects whether to admit or discharge the patient	☐ Appropriately selects whether to admit or discharge Involves the expertise of some of the appropriate specialists	☐ Educates the patient appropriately about their disposition Assigns patient to an appropriate level of care (ICU/Tele/Floor) Involves expertise of all appropriate specialists
9	**General Approach to Procedures (PC9)**	☐ Did not achieve Level 1	☐ Identifies pertinent anatomy and physiology for a procedure Uses appropriate Universal Precautions	☐ Obtains informed consent Knows indications, contraindications, anatomic landmarks, equipment, anesthetic and procedural technique, and potential complications for common ED procedures	☐ Determines a back-up strategy if initial attempts are unsuccessful Correctly interprets results of diagnostic procedure
20	**Professional Values (PROF1)**	☐ Did not achieve Level 1	☐ Demonstrates caring, honest behavior	☐ Exhibits compassion, respect, sensitivity and responsiveness	☐ Develops alternative care plans when patients' personal beliefs and decisions preclude standard care

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Learner: _____

	Milestone	Did not achieve level 1	Level 1	Level 2	Level 3
22	**Patient centered communication (ICS1)**	☐ Did not achieve level 1	☐ Establishes rapport and demonstrates empathy to patient (and family) Listens effectively	☐ Elicits patient's reason for seeking health care	☐ Manages patient expectations in a manner that minimizes potential for stress, conflict, and misunderstanding. Effectively communicates with vulnerable populations, (at risk patients and families)
23	**Team management (ICS2)**	☐ Did not achieve level 1	☐ Recognizes other members of the patient care team during case (nurse, techs)	☐ Communicates pertinent information to other healthcare colleagues	☐ Communicates a clear, succinct, and appropriate handoff with specialists and other colleagues Communicates effectively with ancillary staff

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