

PART TWO – SESSION MATERIALS

Session Title: AHRQ Sepsis In-Situ - Refresher

Please indicate the type of session by checking the appropriate box:

Case Scenario

Skills (Procedure) Station

Small Group Discussion

Computer-Based Learning

Simulation Enhanced Didactic

Original Session Date: 3/28/2017

Version: 2.1

Revision Date: Click here to enter a date.

Curriculum Title: AHRQ Sepsis Grant

Author 1: Lisa Barker, MD FACEP

Dept/Institution: Emergency Medicine/Jump

Author 2: Andrew Vincent, DO

Dept/Institution: Emergency Medicine/OSFMC

2.1 SESSION SNAPSHOT

**Intended Learner Group(s):**

Clinical care teams in regional EDs

**Pre-Learning to be completed before session (if any):**

1. Sepsis Introduction (Healthstream)
2. Sepsis BPA

**Program Goals:**

Individual performance is important but contributory to total team performance.That team begins with the resuscitation team on site with the patient, and is extended to and incorporates the input of remote team members.

**Interprofessional/ multidisciplinary goals:**

1. Seamless integration of telehealth into the care of septic patients by inter-professional and multi-disciplinary teams throughout a multi-site healthcare ministry. Improvement in transitions of care and optimization of transfer decisions across our system. Physician, nurse, and team accountability for optimal resuscitation as guided by the Surviving Sepsis Guidelines.
2. Demonstration of teamwork and communication skills within an inter-professional team as per Teamstepps skills domains (team structure, communication, situational monitoring, mutual support, leadership)
3. Demonstrate the value of telehealth engagement in the care of ED septic shock patients in a [simulated] busy ED environment
   1. Patient monitoring
   2. Compliance with CMS sepsis bundle
   3. ?Minimize extra work

**Clinical Objectives:**

1. Improving patient care outcomes in sepsis through the product of total team commitment to shared goals and objectives which include meeting SSCG and use of telehealth.
2. Physician, nurse, and team accountability for optimal resuscitation as guided by the Surviving Sepsis Guidelines.
   1. Special emphasis on getting access
   2. Administering IVF
   3. Documenting IVF
   4. Focused clinical exam
   5. Repeat lactate
3. Practice use of telehealth operations.
   1. It is not only anticipated but **expected** that TeleICU team members participate in the collegial management of the patient as a Team Member.
   2. Identify barriers to telehealth engagement in learners’ specific ED setting
4. Promote positive teampractices such as role delineation, verbal communication (shared mental models/situational awareness)

**Learning Objectives:**

Following participation in this session, learners will be able to:

1. Knowledge
   1. Define severe sepsis and septic shock according to the CMS guidelines effective 10/1/2015 [using CMS as the standard]
   2. List the CMS quality measures for the care of patients with sepsis
   3. Describe the components of the Focused Clinical Exam
2. Skills – Behavioral
   1. Coordinate team efforts to initiate treatment for septic shock
   2. Maintain situational awareness through verbalization to team members
   3. Demonstrate initial steps in management of shock per SSCG and department protocols
   4. Demonstrate collegial engagement of telehealth resources
3. Attitude
   1. Appreciate the benefits of telehealth engagement in critically ill patients
   2. Describe barriers experiences to telehealth utilization

**Scenario Objectives:**

1. Identify abnormal vital signs consistent with septic shock
2. Initiates aggressive IVF resuscitation
3. Orders diagnostic tests in the sepsis panel:
   1. CBC/CMP
   2. Blood cultures x 2
   3. Lactate
   4. Urine Culture
   5. CXR
4. Move telehealth cart into room after initial resuscitation
5. Work collaboratively with telehealth to meet SSCG/CMS guidelines
   1. Delivers minimum 30mL/kg IVF after patient develops septic shock
   2. Identify need for 6 hour lactate
   3. Identify need for repeat focused clinical exam
   4. IV vasopressors started when patient recurrently hypotensive after 30mL/kg IVF

**Session Description:**

Inter-professional Standardized Patient scenario where learners participate in the ED evaluation and management of an adult patient who presents to the ED with fever, shock secondary to pneumonia. Patient will deteriorate during his ED course. IV access will be an issue and IO will have to be placed and other alternatives will have to be considered as well. Aggressive fluid resuscitation and pressor support will be required for patient to stabilize. Advanced airway management is not required.

Engagement of telemedicine (eICU) is also desired and will be practiced at first debrief if participants have not initiated it on their own.

2.2 SESSION EQUIPMENT

**Additional Setup (Non-Medical Equipment)**

|  |  |
| --- | --- |
| ITEM | Quantity |
| SimMan monitor-laptop | 1 |
| CISCO Phone/Confederate Phone Click here to enter text. | |
| AV Needs (please describe): Continuous filming of scenario with portable video setup | |

|  |  |  |  |
| --- | --- | --- | --- |
| **ITEM** | **SOURCE** | **PEOPLESOFT NUMBER** | **QUANTITY** |
| IO insertion kit/EZIO drill/bypass setup | On-site |  | 1 per session if not reusable |
| Central Line mockup | Jump | Click here to enter text. | 1 |
| eICU telemedicine cart | eICU/in-situ ED | Click here to enter text. | 1 |
| 2nd access  18g IV hidden under sheet LAC | Jump | Click here to enter text. | 1 |
| Empty IVF bags (NS) | Jump |  | 3 |
| 1L NS IVF bags – unspiked | In-situ ED (or Jump) |  | 3 Per Session |
| 1L NS IVF bag – can be already spiked (re-use) | Jump |  | 1 |
| Zosyn 4.5g  Vancomycin 1g  Azithromycin 500mg  Cefepime 2g  Aztreonam 500mg | JUMP |  | 1 ea Per Session |
| Levophed | Jump |  | 1 Per Session |
| Studio Code Setup | Jump |  |  |
| Fake Leg for I/O | Jump |  |  |
| Mobile Confederate | Jump |  |  |

2.3 SESSION ENVIRONMENT

|  |  |
| --- | --- |
| **SIMULATION VENUES** | |
| Anatomical Skills Lab | Virtual ICU (for practice sessions only) |
| Innovation Lab | Virtual OR/Trauma Bay |
| Regional Transport Center | Virtual Patient Unit |
| Studio Apartment | Virtual Reality (Surgical Skills) Lab |
| Skills Lab | Workstation & Med Room |
| **DEBRIEFING VENUES** | |
| Briefing Theater | Debriefing Room |
| **CONFERENCE CENTER** | |
| Auditorium | Lecture Hall |
| Board Room | Pre-Function Space |
| Conference Room |  |

**In-Situ (list clinical space):** Regional ED

**Off-Site (please describe):** SJH (Pontiac) and SMMC **(**Galesburg)

**Room and Materials Setup**

Adult Standardized Participant will be in patient room or care area. Dressed age appropriate patient gown. Airway or other supplies expected in an inpatient or patient care room should be confirmed prior and provided by the unit. Room set up should model that used with a real patient exactly.

This patient will have just been placed in the room following nurse triage in ED and will not be on the monitor, and will not have IV access.

Also need second IV bypass set up attached to an 18g IV in case team orders second IV to be placed. IF they ask for CVC, it just gets taped on. Peripheral norepi is OK via a good flowing line.

2.4 SCENARIO SETUP

|  |
| --- |
| **Documents Included** |
| Scenario Setup Form |
| Patient Background (for manikin patients) |
| Standardized Participant(s) – Adult (M/F ok) |
| Other: Click here to enter text. |
| **N/A** – this session does not include case scenarios |

**Patient Information:**

**CC**: Fever **PMHx:** HTN **Weight**: 100kg **Allergies:** NKDA

**Clinical Setting:** Regional ED

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **STATE NAME** | | **VITAL SIGNS** | | **EXAM/ADDL MANIKIN INFO** | | **ACTIONS DESIRED** |
| **ACT ONE:**  Initial Presentation | | *Temp: 102.4*  *HR: 135*  *BP: 70/40*  *RR: 24*  *SPO2: 92% on RA* | | *PATIENT IS ALERT*  History per Background Info  Patient just arrived via EMS without IV access  **Cap refill 5 seconds sticker on heel** | | 1. Primary /Secondary Survey 2. Identifies SIRS criteria 3. Septic Workup Initiated 4. Place pt on Monitor 5. Place on O2 via NC 6. IO access after 2 failed IV attempts 7. Initiate IVF bolus |
| ***TRANSITIONS: 1.*** *If Tylenol given , lower temp to 99.5.**2. After IVF >2L bolus ordered, go to Transient Response over 2 minutes. 3. If any O2 applied, increase Pox to 97% over 30 seconds. 3. For every 500mL IVF, reduce HR by 10 and Increase SBP by 5. 4. If no O2 applied, leave at 92%* | | | | | | |
| Transient response to IVF | | *HR: 115*  *BP: 95 / 60*  *RR: 24*  *SPO2: per O2* | | Display labwork, CXR, ECG if ordered  *IF asked: cap refill improved to 3 seconds* | | IF team makes contact with Telehealth   1. RN bring machine to bedside 2. Introductions. 3. Initial transfer of information 4. Telehealth recommendations re: any missing bundle elements 5. IVF bolus (30 cc/kg) |
| ***TRANSITIONS: 1.*** *Manual transition to debrief by facilitators. (after workup initiated, IO obtained, IVF started )*  ***\*\*\*Debrief\*\*\****  *Debrief will start up the telehealth cart if not done already. Act Two starts with team re-entering the room (with cart). Telehealth nurse can review care to date, and notify them that the lactate has come back elevated* | | | | | | |
| **ACT TWO:**  Refractory Hypotension | | *HR: 136*  *BP: 80./40*  *RR: 22*  *SPO2: per O2* | | **2 empty IV bags hanging,** third one running.(depends on SP weight)  Eyes closed, drowsy.  **Cap refill 3 seconds [sticker]**  “I’m not feeling well – I feel weak” if stimulated  \*Lactate available upon arrival | | 1. Identify/verbalize septic shock to the team 2. Discuss change in status with telehealth team: septic shock 3. Discuss disposition needs (transfer/ICU)Discuss transport needs, confirm treatment. |
| ***TRANSITIONS:***   1. If Central Line ordered/started, apply mockup to chest of SP. 2. After 30mL/kg infused and pressors started, go to Ready for Transfer 3. After disposition determined, case ends | | | | | | |
| Ready for Transfer | *HR: 120*  *BP: 90/60*  *RR: 18*  *SPO2: 95%* | |  | | Case ends with call to transfer services | |

**Moulage:** Surgical scar RLQ. IO insertion setup with bypass bag. Second 18g IV set up with bypass bag. Cap refill sticker. CVC mockup.

**Multimedia:** CXR, ECG, labs [CBC, CMP, UA, Lactate] **Monitor Setup:** ED [manual BP, ECG lead II, Pox]

EMS Run Script

Medic 23 is bringing in a 55 year old male from home for complaint of generalized weakness.

Past medical history includes HTN.

No IV access after multiple attempts en route.

Field vital signs: 130 80/50 16 95% on RA

Accucheck was 104

PATIENT BACKGROUND INFO-

CC: Lightheaded

HPI: 2 day history of generalized weakness. You almost passed out getting out of bed this morning – so you called the ambulance. 1 week of fevers, cough, some shortness of breath. It has been progressive, initially noticed only with activity such as going up steps, but now occurring at rest as well. There is an associated cough, initially dry, now productive of sputum, occasionally blood tinged, no frank hemoptysis. Describes worsening cough when lying flat, as well as an episode of waking up dyspneic early this morning.

PMH: Hypertension. Admitted 2 months ago for open appendectomy. 3 day hospital stay due to delay in bowel function returning. Cleared by surgeon for normal activities.

Wt: 100kg

ALL: NKDA

Fam Hx: No cardiac or lung disease.

Soc Hx: 1ppd smoker x 30 years

ROS: No abdominal pain, N/V/D. No urinary symptoms.

**Physical Exam (Sim findings in bold):**

VS: Per **monitor**

Gen: Lethargic appearance.

HEENT: Dry MM

Neck: No bruits, no JVD

CV: **Tachycardic, no murmurs, no gallops.**

Lungs: **Right sided rales. No wheezing.**

Abd: **Healed surgical scar.**

Skin: **No rash**

Extremities: No edema

Rectal:

Neuro: non-focal. Drowsy but arousable when SBP <90

2.5 LEARNERS’ SESSION HANDOUTS

1. EMS Run Script
2. Stimuli (via monitor):
   1. CXR
   2. ECG
   3. Labwork results
      1. CBC
      2. CMP
      3. Lactate
      4. UA

2.6 SESSION ASSESSMENT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **AHRQ Septic Shock** | **C**  **O**  **M**  **P**  **L**  **E**  **T**  **E** | **P**  **R**  **O**  **M**  **P**  **T**  **E**  **D** | **N**  **O**  **T**  **D**  **O**  **N**  **E** | Date:  Team Members: |
| **ACT ONE – Initial Resuscitation** |  |  |  | Identifies shock state |
|  |  |  | Starts IVF |
|  |  |  | Lung exam: Identifies rales RLL |
|  |  |  | Sepsis work-up: adds Lactate if not done |
|  |  |  | Cultures: blood, urine |
|  |  |  | CXR |
|  |  |  | CBC is ordered or sent per protocol |
| **ACT TWO** |  |  |  | Identifies patient as having sepsis/severe sepsis/septic shock to team |
|  |  |  | Empiric antibiotics: |
|  |  |  | Pressor support (for persistent hypotension)  Med/dose given: |
|  |  |  |  |
|  |  |  |  |
| **Team Interactions** |  |  |  | Call-outs |
|  |  |  | Check-backs |
|  |  |  |  |

2.7 SESSION SPECIFIC REFERENCES/SOURCES

.

**Flow of Case**

**Briefing (10 minutes):**

1. Psychological safety applies
   1. no individual performance data, this is about team function and the system we work in
   2. sessions will be recorded for aggregation / re-enactment of sepsis care for future learning materials
2. Physical safety also applies – please use all of your normal equipment (needles, Lifepack etc)! Your patient will be a mannequin You may examine the way you normally would, excluding invasive exam or procedures. Initiate the process/verbalize, and we will provide results or create a simulated version (e.g. IV), lines get taped on, etc. vitals are from monitor not the patient, if unsure of a physical finding ask.
3. The goals for today:
   1. Review and apply the updated sepsis guidelines
   2. Explore the use of telehealth in the care of ED patients with sepsis
4. This will be different than a usual simulation in that there are 2 “acts”, we will start and stop scenario to explore sepsis care and the integration of telehealth into your practice. Stopping does not indicate problems in care.
   1. Please suspend disbelief, we know the case is a bit artificial, the team would not usually be at bedside simulataneously, etc.
   2. The eICU can see in high definition, can see the monitor, can also get monitor data when running for real if they have room # The performance is by the team, not the individual – this is about improving processes, no information about individual performance will be released.

Each clinical “Act” will occur at patient bedside in the clinical space. Debriefings will occur either outside room or on other side of simscreens at foot of bed so that camera filming the scenario can still pick up the debriefing discussion without identifying participants.

**Case starts with facilitator reading the EMS run sheet**

|  |  |  |  |
| --- | --- | --- | --- |
| STAGE | TIME  (min) | ED TEAM | TELEHEALTH |
| ACT ONE | 10 | At bedside: Full team  MD – perform H&P  RN/tech – pt on monitor, draw labs, IV start | Monitor Cart Off |
| DEBRIEF #1 | 10-15 | Questions to explore:   * + - 1. What does the team think is going on with this patient?       2. Now that the patient has been resuscitated, how would ongoing monitoring occur on a busy shift?       3. Who would set up the cart?       4. Demonstrate raise, lower the cart, and how you might position it       5. Please set up the cart       6. Pictures for the telehealth nurse to help the team set up if they are struggling with what to do   **45 minutes transpire** | Brief introduction when cart turned on.  Identify room # for scenario.  After introductions, eICU RN can let team know that sepsis BPA fired, and…(last) share that lactate elevated as well (if ordered).  [this triggers transition to ACT 2] |
| ACT TWO | 10 | 1. Team pulls activated cart into room (if not done in Act One) 2. No introductions – pt unresponsive 3. Reviews bundle with telehealth, additional orders/interventions 4. Starts pressors and arranges for transfer/admission | 1. Introductions to patient 2. Review bundle elements so far – what is still outstanding 3. Recommend 30cc/kg amount which is approximately 3 Liters for our 100kg SP. |
| FINAL DEBRIEF | 15 | *Includes all clinical team members plus telehealth. Issues to explore:*   1. Telehealth interactions: telephone vs video monitoring 2. Point-of-contact? (MD vs RN) 3. Communication strategies – in front of patient and/or families? 4. Conflicting views – how to address (CUS?, 2-challenge) 5. The Sepsis Hospital 6. Balancing barriers vs benefits    1. What are the barriers to telehealth?    2. How does telehealth monitor? (algorithms alert them to vitals, bPA, other?)    3. What is telehealth able to do? what can they see? what can't they see?    4. When would their engagement help you in your regular workflow? [high volume? Multiple sepsis patients? Pt going to regional ICU?] | |