

Simulation Interest Group Scenario Template

I. Core Curriculum Case 4: GI Bleeding / PEA

II. Target Audience: EM Residents

III. Learning Objectives or Assessment Objectives

A. Primary –

- Recognizing the differential diagnosis of PEA
- Management of fluid resuscitation due to blood loss
- Recognizing global ischemic ECG changes due to blood loss

B. Secondary - detailed technical goals, behavioral goals, didactic points

- Proper history gathering from surrogates
- Knowledge of when to push for blood or non-cross-matched blood
- Giving Octreotide
- Proper interaction with consultants to clearly explain level of urgency

C. Critical Actions:

Demonstrates knowledge of ddx of PEA	MK
Orders Two Large Bore IVs	PC
Identifies GI Bleeding via NG Tube or Rectal	HPD
Recognizes refractory hypotension requiring blood	DI
Gives O negative blood due to delay in cross-matched blood	SBP
Contacts Medical or Surgical Subspecialist to Stop Bleeding	SPB

IV. Environment

A. Lab Set Up

- ED or Sim Lab

B. Manikin Set Up

- Laerdal SimMan or other Simulator
 - May be made to look pale
 - Two pumps, IV lines
 - Simulated blood bag to hang
 - Saline Bags to hang

C. Props

- Basic airway and code blue cart is assumed

- X-rays: negative portable chest
 - ECGs : subendocardial ischemia see PDF file from “Basic Electrocardiography” by Stephen Scheidt, a nice source for teaching ECGs
 - Lab reports: Need ABG, H/H, lytes, coags, LFTs
- D. Distracters – Consultant can be more difficult for upper level residents

V. Actors

A. Roles –nurse, neighbor

- ED RN: ideally trained nurse confederate, if very facile with simulator control the instructor can play the nurse (requires trends programmed in to the simulator to be done well), alternatively the partner resident can play the nurse
- Neighbor can be played by instructor

VI. Case Narrative (describes what the learner will experience)

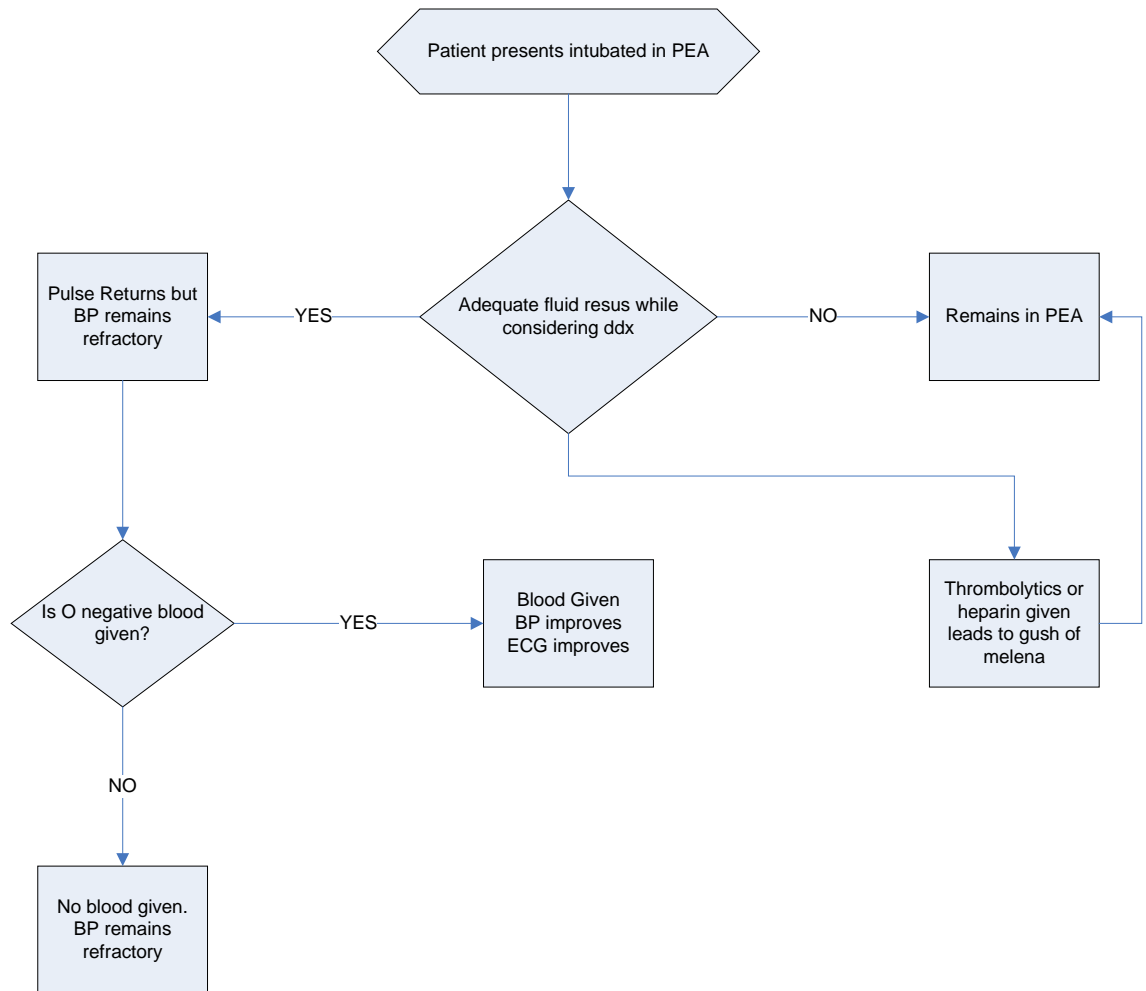
A. Scenario Background Given to Participants

1. Chief complaint: Found down by neighbor in his bathroom.
Medic Report: “We were called by the neighbor. We found this guy slumped over on the toilet in his bathroom. He was barely breathing when we got there – agonal respirations. We intubated him with little resistance. He went into PEA at some point while we were intubating. We initiated CPR and IVF. Rhythm has not changed and we have not felt a pulse in the ambulance. He got one round of epi during our short transport, which increased his PEA rate but did not seem to do much else.”
2. Past medical history: Neighbor reports he drinks fairly heavily, but other than that does not know much medical hx
3. Meds and allergies (none available)
4. Family/social history (none available)

B. Scenario conditions initially

1. History patient gives: none
2. Patients initial exam: Patient presents intubated in PEA
 - HR monitor Rate of 140
 - BP 80/40 pulse weak if checked
 - RR spontaneous rate very slow around 6
 - Temp 96 if taken
 - POx: 100%
3. Patients physiology
 - Hypovolemia with BP refractory to fluid resus of two liters
 - Responsive to blood
 - Lactic Acidosis from Hypoperfusion

C. Scenario



VII. **Instructors Notes** (what the instructor must do to create the experience)

- A. tips to keep scenario flowing in lab and via computer
- B. Tips to direct actors
- C. Scenario programming
 1. Optimal management path
 - a. Initiates IV, O2 / ventilator, Monitor
 - b. Confirms endotracheal tube placement
 - c. Initiates 2 Large Bore Ivs
 - d. Fluid resuscitation with NS
 - e. Work up with FSBS, lytes, LFTs, coags, CBC, ABG, UA, ETOH and ECG
 - f. Orders blood
 - g. Gives Octreotide
 - h. Recognizes ECG is abnl
 - i. Reassesses pulse and BP after fluids
 - j. Places NGT, performs secondary exam and rectal

- k. Transfuses blood
 - l. Establishes frequent monitoring
 - m. Consults specialist for definitive care
 - n. ICU admission
2. Potential complications path(s)/ potential errors path(s)
- a. Under Resuscitation with NS = continued PEA
 - b. No resuscitation with Blood = continued ischemia
 - c. Giving heparin or thrombolytics for the ECG changes = death (at discretion of instructor)

VIII. Debriefing Plan

- A. Method of debriefing: Group with instructor facilitation, review of critical actions
- B. Actual debriefing materials: review of the critical actions/critical errors, handout
- C. Rules for the debriefing:
- D. Questions to facilitate the debriefing
 - What is the ddx of PEA?
 - When should blood be given in this case?
 - What constitutes criteria for O negative blood?
 - What must be stressed to the consultant?

IX. Pilot Testing and Revisions

- A. Numbers of participants: Thus far 4 EM residents in the hot seat and 4 EM residents helping as nurse.
- B. Performance expectations, anticipated management mistakes:
 - 1. Some will make the mistake of giving thrombolytics and heparin. This is a great opportunity to stress the dangers of these drugs and to stress the need to ask about contraindications and perform the rectal exam.
 - 2. It is also important to show an example of ischemic ECG changes that are not due to acute thrombosis, but rather due to blood loss.
 - 3. Residents may question the NGT in a potential variceal bleeder. However, in this case we are not worried about stirring up bleeding, since he is already gushing blood. And it is probably more important to get an estimate of the amount and rate of bleeding for now.
- C. Evaluation form for participants (see separate sheet)

X. Authors and their affiliations

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