Simulation Scenario- SbCST for ___Trauma Protocol _________

Scenario Overview

Objectives of Scenario: Using simulation-based clinical system testing methodology, evaluate current planned __________________________________________________

Specific Testing Priorities based on degree of change, risk, and/impact:

Facilities and Environment:
1. The Trauma Room and the OR was identified in a timely fashion.

Technology and Devices:
1. Appropriate technology is available and accessible in each location.

Processes of Care/Workflows:
1. Notification system is in place and notifies team in a realistic time frame that allows them to prepare for the trauma.
2. Team was mobilized in quickly and there was no delay in care.

Roles and Responsibilities:
1. It is clear what roles are responsible are delineated in the communication algorithm.

Patient Description:

Patient History (Medical, Surgical, Social)
7 year old male gunshot wound right upper quadrant abdomen. Intubated in field for combativeness. 1 large-bore PIVs placed and IO.
Stable en route, but rapidly deteriorates to hypotensive and tachycardic.

Baseline Vital Signs
- HR 130
- RR Bagged
- BP 65/35
- SaO2 92
- Weight 20 kg

Target Participants and Responsibilities:
To involve all appropriate teams in the triage and implementation of care of a level 1 trauma patient
Anticipated Duration:
Scenario Time 1 hour

Debriefing Time (typically 2-3x scenario length)

## Scenario Set-UP

| Location and Setting | Room: Insitu | Setting: EC/OR |
|----------------------|-------------|----------------|
| **Mannequin Set Up** |             |                |
| Mannequin            | Pediatric Hal and Trauma Kid+Surgical Trainer |            |
| Wardrobe             |             |                |
| Monitors             |             |                |
| Moulage              | Gunshot Wound Left Upper Quadrant (Mehron Coagulated Blood) Gunshot Wound right abdomen. |            |
| Access               | R PIV and IO right Leg |            |
| ID Band Info:        | Intubated |                |
| Other Details        |            |                |

| SPs                  | Character Names and Roles: (Parent) N/A |
|----------------------|---------------------------------------|
| Embedded Person Roles | Role (RN, MD, Parent, etc)            |
|                      | Scripts or Hand-Off information:      |
|                      | 1. N/A                                |
|                      | 1. *Script for EMS Com Center*        |

| Room Staging (environment) and Equipment in Room | □ Patient Starts off at an outside location |
|--------------------------------------------------|---------------------------------------------|

| Medical Chart Information | □ Electronic/Paper Chart required: |
|                          | □ Lab Results: See last page |
|                          | □ Diagnostic Imaging: |

| Pre-Sim Checklist | □ Video recording is enabled |
|                  | □ Debriefing location is identified |
|                  | Vital signs: weight: kg |
|                  | Heart rate: 130 |
Simulation Program

| Blood pressure: 65/35 |
|-----------------------|
| Respiratory rate: 55  |
| Oxygen saturation: 92 |
| Temperature:          |

**Expected Participants**
- EMS, EC Trauma Team, OR Team, MET Team

**Room For Running SbCST:** Will be determined when call is received.

**Actual/Real vs. Simulated Medical Equipment and Supplies to be set up in space for SbCST include:** Real Medicine/Simulated for controlled substances or meds that are constrained.

**Simulation Equipment Needed:**
- Audio recorders
- Camera and video recording set up
- Method for taking notes
- Observer signs for wearing
- Sim Team signs for wearing
- Note cards with patient examination and lab findings as needed

**Mannequins/ Task trainers/ Standardized Patients Needed:**

**Patient Medical Chart Information:** Patient information will be entered into Cerner. Labs and Pharmacy orders will be entered in there as well.

**Demonstration Items needed for Debriefing:**
- Flip charts for note taking or laptop computer
- Scripted debriefings
- Observer checklists

**Scenario Logistics**

**Expected Scenario Flow (Flow Chart):**
- Participants given pre-briefing:
  - The goal of this simulation is to evaluate if we have the optimal processes of care, resources (people, equipment/supplies, etc), layout and space, and necessary skill sets and competencies to care for trauma patients. After we
Simulation Program

complete this scenario we will debrief to identify and address as many latent safety threats, issues and concerns as possible.

| Patient Background | Mechanism: 7 year old male gunshot wound right upper quadrant abdomen and . Intubated in field for combativeness. 1 large-bore PIVs placed and IO. Stable en route, but rapidly deteriorates to hypotensive and tachycardic. |
|--------------------|--------------------------------------------------------------------------------------------------|
| Location           | Ambulance | EC | OR |
| State:1            | Pre Arrival | Pre Arrival | Pre Arrival |
| Expected Interventions | • Access Obtained | • Level Patient | • After Control Desks calls with MRN Pulls Supplies (trauma cart, trauma instruments/supplies. |
|                    | • Patient intubated | • HUC send out Rave alert/ | • EC will transport patient up to control desk; OR team will meet EC at desk to take patient |
|                    | | • Preregisters Patient | • Patient Transferred to OR Table |
|                    | | • Pre arrival huddle with Team | • Patient placed on the monitor |
|                    | | • Secondary Nurse will call blood bank to confirm level one trauma/need for blood cooler | |
|                    | | • Tech Will Run to Blood Bank Grab Cooler | |
|                    | | • Medic will grab warmed fluids (push pull) and surgical equipment | |
|                    | | • Anesthesia arrives | |
|                    | | • Trauma Service Practitioner Control Desk calls the OR Team. | |
|                    | | • Secondary Nurse will call and get med rec number for OR to pull equipment | |
|                    | | • Radiology Waiting at Bedside | |
|                    | | • EC staff have PPE and Led | |
| Vitals             | HR 130 | HR 140 | HR 160 |
| HR 130             | BP 65/35 | BP 60/30 | BP 60/30 |
| BP 65/35           | SATs 92 | SATs 89 | SATs 92-88 (increase after chest tube is placed and then decompensates again due to hemodynamic instability) |
| SATs 92            | RR Bagged (RR 20 on monitor) | RR 20 on monitor | |
| RR Bagged (RR 20 on monitor) | | Decreased breath Sounds on the Left | |
| Decreased breath Sounds on the Left | | | |
### State 2: Arrival in the EC

**Arrival in Trauma Bay**

**Arrival in the OR**

**Expected Interventions**

- Start Primary assessment
- Identify decreased breath sounds
- Place 20 gauge IV or Central
- Place A Line
- Switch out to Level 1
- Begin Meds (pharmacy)
- MTP should continue
- Place on monitors
- Prep and Drape

(Additional mannequin setup – Art Line Central Line) Pause and Switch To SurgiSam after Patient is moved.

#### Vitals

| RR Bagged | RR Bagged (RR 20 on monitor) |
| --- | --- |
| HR | HR 150 |
| BP | BP 60/30 |
| Sats | SATs 89 |
| RR | RR Bagging |

Decreased breath Sounds on the Left

### State 3: Ongoing Tachycardia/Hypotension

**Expected Interventions**

- Set up atrium
- Place chest tube
- Give Fluid and Blood
- Fast Scan
- Activate MTP
- May get to Secondary or Transfer to OR
- Surgeon Makes Incision
- Find Bleeds
- MTP Continues
- Cauterizes Bleed/Clamps Bleed
- Scenario Ends
Simulation Program

**Expected Endpoint of the Scenario:** Scenario will end after MTP is initiated in OR.

**Debriefing Points:** audio record debriefing

See scripted debriefing

**Labs:**

| Venous Blood Gas | Chemistry   | Coags | Hematology |
|------------------|-------------|-------|------------|
| pH 7.19          | BUN 9       | AST 215| WBC 10.7   |
| pCO2 56          | Sodium 137  | Amylase 90 | Hgb 5.5 |
| pO2 60           | Potassium 3.6 | Lipase 49 | Hct 17   |
| HCO3 20.2        | Chloride 108 | Coags   | Plt 136   |
| Base Excess -7.7 | CO2 21      | PT 15.8 |           |
| O2 saturation 86 | Calcium 7.9 | INR 1.22 |           |
| Lactate poc 4.0  | Glucose 217 | APTT 23.8 |           |
| Hgb 5.8          | Creatinine 0.35 |       |           |
| Hct POC 18       | Total bili 1.0 |       |           |

**Vitals**

| HR     | BP     | Sats | RR |
|--------|--------|------|----|
| HR 170 | BP 60/30 | SATs 92-90 (increase after chest tube is placed and then decompensates again due to hemodynamic instability) | RR Bagged (RR 20 on monitor) |
| HR 75  | BP 45/25 | Sats 82 | RR - Anesthesia |

HR 75 BP 45/25 Sats 82 RR - Anesthesia