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| **Audience and Participants** |
| **Target Learning Group** * All groups
 |
| Learning Objectives |
| **Educational Goal*** To enhance resuscitation and team management skills of a major trauma in the rural setting.

**\*Crisis Resource Management (CRM) Objectives:*** Demonstrate effective communication during scenario: constructing clear messages, closed loop communication, and sharing mental model.
* Mobilizes resources early (calls staff in)
* Recognizes need to transfer early
* Effectively lead a trauma team and delegate roles appropriately.

**\*Medical Objectives:*** Identify and treat a trauma brain injury (TBI)
	+ Demonstrate management of increased ICP
* Identify and treat a unstable pelvic fracture
	+ Demonstrate management of hemorrhagic shock
* Effectively resuscitate patient prior to Intubation (address low BP in TBIs) \*Key learning objective as recommended by *Hazel Park/ Shannon Chestnut*
 |
| ****Case Summary:****  |
| **A 32 year old male presents after being bucked off his horse. EHS gives notification that they are en route, ETA 5 minutes. His GCS is 8, BP is 82/40, head injury.**  |
| Physical Props / Equipment  |
| Mannequin:* High fidelity patient simulator (Adult Mannequin)
* Boggy hematoma to right temporal area
* Abrasions across abdo/pelvis area
 |
| Monitors:* Telemetry
 |
| Personnel:* EHS
* RN (#of staff usually working on shift)
* Observer team (CRM Forms)
* Physician Lead
* Confederate to play paramedic role.
* Rural to call in lab and xray tech
 |
| Other:* Basic airway materials and Advanced Airway materials
* Code blue cart
* Pelvic Binder
* Rapid Infuser or fluid warmer
* Blankets or patient warmer
* Urinary catheter/OG
 |
| Room |
| Set-Up:* Rural ED Trauma Bay
 | Medications & Fluids:* Blood Products and or NS/Plasmalyte for IVF
* Analgesia (e.g. fentanyl, morphine)
* RSI Drugs (ketamine, Roc/Succ)
* TXA
 | Diagnostics:* CXR Normal
* CXR post intubation
* XR with Pelvic Fracture
* FAST images showing no free fluid
 | Documentation Forms:* Typical RN trauma documentation forms.
* Rural Massive Transfusion Protocol
* Cognitive Aids (Push Dose Pressors)
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| Scenario |
| Patient Identification: 32yr old male bucked off his horse and kicked. |
| Chief Complaint / History: Chest painYou are working in a rural Emergency Department. You have access to X-ray and lab but there is no CT scanner in the department. The nearest trauma center is a 30 minute flight away via BCAS. The paramedics have just rolled in with a 32 year old male who was bucked off his horse and kicked. He was not wearing a helmet. Witnesses say the horse was given a fright and threw patient off onto his head and kicked him in his lower abdomen area. The patient had a loss of consciousness and remains GCS of 8. He has received 500cc of fluid from the EHS and had a c-spine collar applied. He was unconscious at scene now just moaning with pain stimulus.  |
| Past Medical History:1. Healthy
 | Medications:1. None
 |
| Allergies: NKDA |  |
| Family History: Non-contributory | Social History: * Lives with girlfriend.
* Denies etoh, smoking, or illicit drug use.
 |
| Key Management Interventions: |
| Stage 1: Initial management of poly-trauma patientA young male brought in by EMS following his trauma. He is on a backboard with cervical collar. IV infusing to left AC. |
| Vitals: |
| HR: 120 | BP: 80/40 | Temp: 36.0°C | O2 Sat: 96% RA | RR: 22 | Glc: 6.5 mmol/L |
| Physical Exam Findings: | Review of Systems (ROS) |
| * **CNS:** GCS 8 (moaning only), PERL 3mm. Appears Unwell
 | Positive ROS:  |
| * **CVS:** Normal S1S2, cool and pale to peripheries.
 |
| * **RESP:** Normal breath sounds bilaterally
 |
| * **GI:** Soft, non-distended, non-tender.
 |
| * **GU:** No blood at meatus.
 | Negative ROS: |
| * **HEENT:** Airway patent. Boggy hematoma over right temporal area. Trachea midline. C-spine collar on
 |
| * **SKIN:** Abrasions to hands, pelvis and right flank
 |
| * **MSK:** Pelvis unstable.
 |  |
| Interventions |
| * Obtains large bore IV access x2 or IO
* Applies continuous cardiorespiratory monitoring
* Applies oxygen
* Orders labs (including Trauma Panel, CXR, ECG)
* Obtains a full set of vitals including NVS, temperature and glucose
* Performs a primary survey
* Airway: Oral Airway and BVM (Would like to consider intubation but not immediately)
* Breathing: O2
* Circulation
	+ Comments on hypotension
	+ Begins infusion of crystalloid or O-negative blood (Considers initiating MTP) Request blood early if not available
	+ Examines abdomen
	+ Binds Unstable pelvis
* Disability:
	+ Notes GCS 8
	+ Examines pupils
* Exposures
	+ Performs log roll
* Urinary catheter to measure urine output
* Inserts art line to manage BP monitoring
 |
| Successful Intervention:* Binding Pelvis
* Initiating MTP
* Keeps Patient warm
* Call PTN, Trauma Services, Ortho
* FAST if GP able to perform
 |
| Unsuccessful Intervention:* BP Drops if Pelvis not bound
* BP Drops if Intubated with considering pressors

Stage 2: Herniation The patient shows signs of increased ICPVitals:HR: 45 BP: 75/45 RR: 6 (If Not intubated) Left pupil blownInterventions* Intubate if not done so already (can hyperventilate if advised by PTN)
* HOB @ 30 degrees
* Hypertonic Saline 100ml or,
* Mannitol IV (1-1.5g/kg) IV over 10 minutes via filter
* Call Neurosurgery
* Ensures C-spine collar not too tight
 |
| Stage 3: Disposition of trauma patient The patient is packaged and transport is arranged |
| Vitals: |
| HR: 110 | BP: 100- 110/65 | Temp: 36.9°C | O2 Sat: 98% O2 | RR: 20 |
| Physical Exam Findings: |
| * **CNS:**
 |
| Interventions |
| * Asks for adjuncts if not done already (labs, ECG, CXR)
* Performs a FAST
* Takes an AMPLE history
* Begins process to transfer patient
* Intubated for transfer
* Begins secondary survey
 |
| Successful Intervention:* If the patient transfer network is paged for transfer then a confederate playing the trauma surgeon at the referral hospital will answer the learner will handover.
 |
| Unsuccessful Intervention:* If the learner does not attempt to transfer patient the RN or confederate will ask “What is the plan with this patient?”
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| Notes |
| **Possible Debriefing Points:** * How to perform a primary survey
* How to call for help early – call PTN
* How to bind pelvis
* How to manage ICP
* Rural massive hemorrhage flowchart TXA - PRBCs and FFP (Give Blood w NS) \**Avoid Crytalloids, if you need to give Plasmalyte, warm it.*
* CRM Principles (teamwork, clear communication)
* How to resuscitate prior to intubation in the management of hypotension with TBI
 | **Debriefer Notes:** |
| References, Resources, Protocols, Algorithms, or Evidence Informed Practice Guidelines: |
| References:Adjuncts:1. Macintosh HD:Users:jonathanmcgrogan:Desktop:Trauma SIM Pelvic X-Ray.jpg
2. Macintosh HD:Users:jonathanmcgrogan:Desktop:Trauma SIM sinus-tachycardia.jpg
3. Macintosh HD:Users:jonathanmcgrogan:Desktop:Trauma SIM CXR.jpg
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