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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 pain  You 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 patient  A 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 ICP  Vitals:  HR: 45 BP: 75/45 RR: 6 (If Not intubated) Left pupil blown  Interventions   * 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 | |
| **Authors / Contributors:** | |
| Case drafted by Kelsey Innes with contributions from Shannon Chestnut, Afshin Khazei and Karen Schafer.  Case Peer reviewed and edited by Michelle Connell and Jaime Gallaher | |