**Section 1: Case Summary**

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| **S****cenario Title:** | **Motorcyclist - Trauma Case** |
| Keywords: | Trauma, Multisystem, Mechanism of Injury, Hypovolemic Shock, Amputation, Tourniquet, Deadly Bleeds, Distracting Injury , Neuro Trauma |
| Brief Description of Case: | 36 year old motorcyclist involved in single vehicle accident. Participants will need to activate the Trauma Team and perform a trauma assessment, intervening as necessary. During their assessment of the patient, they will experience the re-bleeding of the patients left leg – the participants will be required to apply pressure, re-tighten the tourniquet, and activate MTP if not already done. The team will also be required to intubate this patient to protect his airway. Once these objectives are met, the scenario will end. |

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| **Goals and Objectives** | |
| Simulation Session Goal: | Management of multisystem trauma, including hemmorhagic shock |
| Objectives:  (Medical and CRM) | Prioritize and triage emergent care of a multisystem trauma  Quickly manage deadly bleed, and assess beyond distracting injury to find neuro trauma. |

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| **Learners, Setting and Personnel** | | | | | | |
| Target Learners: | Junior Learners | | Senior Learners | | | Staff |
| Physicians | Nurses | | RTs | Inter-professional | |
| Other Learners: | | | | | |
| Location: | Sim Lab | | In Situ | | | Other: |
| Recommended Number of Facilitators: | Instructor/Facilitator 1 | | | | | |
| Confederates: 1 | | | | | |
| Sim Techs: 1 | | | | | |

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| **Scenario Development** | |
| Date of Development: | April 28 2021 |
| Scenario Developer(s): | Jackie Demmy |
| Affiliations/Institutions(s): | Fraser Health Authority |
| Contact E-mail: | simulation@fraserhealth.ca |
| Last Revision Date: |  |
| Revised By: |  |
| Version Number: | 1 |

**Section 2A: Initial Patient Information**

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| 1. **Patient Chart** | | | | |
| Patient Name: Daniel Fall | | Age: 36 | Gender M | Weight: 82kg |
| Presenting complaint: MVC | | | | |
| You receive a pre-notification from ALS Paramedics:  “We are bringing in a 36 year old male involved in a serious motorcycle accident approximately 15 minutes ago. He’s a GCS 13 w/ HR 136, BP 109/89, RR 24, and SpO2 93% on 15L NRB. He has an traumatic amputation to his left leg, mid-shaft. We have controlled the bleeding with a tourniquet, have started 2 large bore IVs and are giving him his first bolus dose of TXA. Our ETA is 3 minutes.” | | | | |
| Allergies: NKDA | | | | |
| Past Medical History:  Healthy | Current Medications:  None | | | |
| Family/Social History:  Works at CP Rail | | | | |

**Section 2B: Confederate**

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| **Confederate and Standardized Patient Roles and Scripts** | |
| *Role* | *Description of role, expected behavior, and key moments to intervene/prompt learners. Include any script required (including conveying patient information if patient is unable)* |
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**Section 3: Technical Requirements/Room Vision**

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| **A. Patient** |
| Mannequin |
| Standardized Patient |
| Task Trainer |
| Hybrid |
| **B. Special Equipment Required** |
| PPE for team (eyewear, gowns, mask, gloves, shoe protection) – *from ER*  Soaker pads ++ *- from ER*  Tourniquets (CAT or Combat Application Tourniquet) x 2 – *from ER*  ABD pads, dressing supplies – *from ER*  Rapid Infuser and fluid warmer - *from ER*  IV/IO kits (trainers) – *from Sim Team*  Fluids collections bags x 2 – *from Sim Team*  Airway kit for intubation – *from Sim Team*  O2-NP, FM, NRB, ETCO2 – *from Sim Team*  Trauma Record  Cardiac monitor  Wristband- “Daniel Fall 05/06/1985 SIM000123” |
| **C. Required Medications** |
| TXA  Vasopressor-Norepi  RSI Meds- Ketamine, Roccuronium, Fentanyl, Propfol  4U PRBCs, 1u Platelets, all marked “Daniel Fall 05/06/1985 SIM000123” |
| **D. Initial Patient Set-up & Moulage** |
| IV drainage bag with attached tubing x 2  IV setup of NS and infusing @­wide open x 1  Trauma attachment-amputated leg with active bleeding and Moulage  Pale & diaphoretic  Bruising to left temple  Scrapes to both hands |
| **E. Monitors at Case Onset** |
| Patient on monitor with vitals displayed  Patient not yet on monitor |
| **F. Patient Reactions and Exam** |
| *Include any relevant physical exam findings that require mannequin programming or cues from patient*  *(e.g. – abnormal breath sounds, moaning when RUQ palpated, etc.) May be helpful to frame in ABCDE format.*  *A-Rouses to verbal stimuli, airway patient, c-spine collar applied*  *B-Pale, RR 24, increased WOB, not SOB, A/E clear throughout, on 15L NRB*  *C-Pale, cool, diaphoretic, slight oozing from amputated leg, but bleeding controlled, 2 large bore IVs in bilateral ACs with NS open to gravity, pulses weak and thready*  *D-GCS 14 (3E, 5V, 6M), pupils equal and reactice, gluc 12.4, patient calling out in pain periordically*  *E-Bruising to left temple, amputation to left thigh, bleeding controlled*  HR 136, BP 109/89, RR 24, Sp02 93% on 15L, and GCS 13 (3E 4V 6M). |

**Section 4: Scenario Progression**

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| **Scenario States, Modifiers and Triggers** | | | | |
| Patient State/Vitals | Patient Status | Learner Actions, Modifiers & Triggers to Move to Next State | | Facilitator Notes |
| **Phase 1**  **Prearrival**    ***\*\*Patient not arrived\*\**** |  | Expected Learner Actions  Call team and give report  Preregistration asked for  Roles divided and plan articulated for priorities of care  TML notified  PPE applied  Equipment prepared- Additional tourniquets & dressings, bags and ice for amputated limb, Intubation Supplies, Rapid Infuser/Warmer, MTP initiated, TXA, RSI, Pressors | Modifiers  Triggers  *Completion of assessment/time*  -3 minutes |  |
| **Phase 2 Arrival**  Rhythm: Sinus Tachy  HR: 138  BP: 109/89  RR: 24  O2SAT: 93% 15L viaNRB  T: 36.0  GCS: 14 (3E, 5V, 6M)  Gluc: 12.4 | *C- Deadly bleed controlled*  *A-Rouses to verbal stimuli, airway patient, c-spine collar applied*  *B-Pale, RR 24, increased WOB, not SOB, A/E clear throughout, on 15L NRB*  *C-Pale, cool, diaphoretic, slight oozing from amputated leg, but bleeding controlled, 2 large bore IVs in bilateral ACs with NS open to gravity, pulses weak and thready*  *D-GCS 14 (3E, 5V, 6M), pupils equal and reactice, gluc 12.4. Calling out periordically in pain (is oriented but in too much pain to respond well)*  *E-Bruising to left temple, amputation to left thigh, bleeding controlled* | Expected Learner Actions  Receive handover from EHS  Assess per C-ABC  C-Deadly Bleed:  Bleeding controlled- “do not touch tourniquets”  Ensure 2 large bore IVs patient  Consider IO in humerus for additional volume delivery. NS via bolus and group & screened blood asap  consider need for MTP  Infusion of TXA  A-Airway  Assess-patient at present but plan for probable intubation  C-Spine collar to remain in situ  B-Breathing  O2 remains on, lung fields auscultated, A/e clear  No trauma evident to chest and increased WOB noted  C-Circulation  Ensure bleeding remains controlled  Cross match/intiate 2 units o neg  D-Disability  GCS completed  Pupils checked  Glucose drawn  Analgesia ordered (fentanyl & ketamine)  E-Expose  Body scan to assess for other injuries  Patient will need OR stat | Modifiers  -if tourniquet disturbed or bumped at any point, begin arterial bleed at 100%  -Any injuries or assessments missed will require debriefing  Triggers  End of primary assessment |  |
| **Phase 3- Re-bleed and deterioration**  Rhythm: Sinus Tachy  HR: 142  BP: 112/86  RR: 26  O2SAT: 93% 15L via NRB  T: 36.0  GCS: 10 (2E, 3V, 5M)  Gluc: 12.4  Arterial bleed to limb 100% | *C- Amuptation begins to bleed again with pulsing arterial bleed*  *A-Rouses to painful stimuli, airway patient, c-spine collar applied*  *B-Pale, RR 26, increased WOB, not SOB, A/E clear throughout, on 15L NRB*  *C-Pale, cool, diaphoretic, slight oozing from amputated leg, but bleeding controlled, 2 large bore IVs in bilateral ACs with NS open to gravity, pulses weak and thready*  *D-GCS 14 (3E, 5V, 6M), pupils equal and reactice, gluc 12.4. Calling out periodically in pain (is oriented but in too much pain to respond well)*  *E-Bruising to left temple, amputation to left thigh, bleeding controlled* | Expected Learner Actions  Manual pressure immediately to bleed, including pulse pressure points  Second tourniquet applied  Reassess entire primary survey due to change in status  A-Airway  Responds to painful stimulus only  Prep for intubation  B-Breathing  Reassessed, preoxygenate in aniticipation of intubation  C-Circulation  initiage MTP  Start mtp ppo  D-Disability  Assess GCS  Assess pupils prior to sedation  Recognize need for RSI and plan  Need for CT scan | Modifiers  -Manual pressure applied-slow bleed to 50%  -Second tourniquet applied, slow bleed to venous trickle and then stop  -If primary survey not reassessed post bleed management, patient begins to snore and GCS drops to    PCC to Hand MTP PPO to team  Modifier– if time permits start RSI –first 4 p’s   * PREP   Rocuronium 1.5mg/kg  -Ketamine 2mg/kg  -Fentanyl 100mcg  - Phenylephrine prn   * PRE-OXYGENATE * PRE-TREAT (BLOOD, LEVO OR EPI INFUSION) * Position   Triggers  -End scenario once ready for intubation | \*This tourniquet needs to rebleed as a distractor during the sim, so ensure this phase achieved\* |

**Appendix B: ECGs, X-rays, Ultrasounds and Pictures**

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| *Paste in any auxiliary files required for running the session. Don’t forget to include their source so you can find them later!* |

**Appendix C: Facilitator Cheat Sheet & Debriefing Tips**

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| *Include key errors to watch for and common challenges with the case. List issues expected to be part of the debriefing discussion. Supplemental information regarding any relevant pathophysiology, guidelines, or management information that may be reviewed during debriefing should be provided for facilitators to have as a reference.* |

**References**

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