SIMulatED

Royal Darwin Hospital Emergency Department

Author: Mark de Souza

# Scenario Run Sheet: Haemorrhagic Shock, Code Crimson

## Scenario Overview

**Estimated Scenario Run Time:**  8-10 mins

**Estimated Guided Reflection Time:** 10-15 mins

**Target Group:** ED Registrars and Nurses, Trauma RN, ICU and Surgical registrars

**Brief Summary:** 32yo male, Careflight retrieval post stab wound to abdomen. Becomes haemodynamically unstable en route to ED. Prenotification to Access Line occurs, provoking activation of Code Crimson, Massive Transfusion protocols and theatre standby for cat 1 laparotomy. Primary survey shows near-exanguination. Pre-assembled trauma team focuses on time-critical resuscitative measures and transport to theatre.

## Learning Objectives

**General**

Trauma team/interdepartmental communication, disposition of critically unstable patients

**Scenario Specific**

Recognition and management of critical haemorrhagic shock (Code Crimson), including options for wide bore vascular access, hypotensive resuscitation and minimising delay to definitive haemostasis.

Knowledge of process and principles related to the request and administration of MTP 1 + 2 (including delayed arrival of FFP)

Importance of other therapies to minimise haemorrhage including blood component transfusing rations, maintenance of normothermia, TXA administration <3h post injury

Rehearsal of the leadership skills required for coordinated interdepartmental responses in critical situations

## Equipment Checklist

**Equipment**

Live male patient. Adult Resus trolley. I-sim.

Large bore IV cannulae and RICC catheters; blood collection and VBG syringe

Arterial line box. Space blanket. Ranger rapid transfuser, 2 x MTP eskies and blood components

**Medications and Fluids**

Giving set, Normal saline

Tranexamic acid 1g, Morphine, Fentanyl, RSI/sedation drugs, ADT, Ceftriaxone, metronidazole

**Documents and Forms**

Trauma admission chart

Code Crimson Protocol, MTP protocol

**Diagnostics Available**

CXR – air under R hemidiaphragm. FAST: large haemoperitoneum, poor view abdo aorta, pericardium NAD

VBG –lactic acidosis, low Hb

## Scenario Preparation/Later Parameters

**Initial Later**

GCS **14** RR 26 P 140 BP 70/45 GCS **14** RR 26 HR 120

Sats 93% RA(poor trace) T 35.9 BSL gas SaO2 95% O2 BP 80/50 T 36.2

**Patient features**

Male, RUQ wound – blood-soaked gauze dressing. Distended abdomen

## Participants

**Staff Actors**

ED Registrars x3 Careflight medical officer. Radiographer

Nurses x3ED, Trauma RN ED Consultant available by phone

ICU and SACU registrars ICU + SACU consultant referral by phone

Anaesthetic consultant

**Instructor Roles**

- Provide the team with clinical signs, VBG, CXR and FAST scan results

## Candidate Instructions/Triage Information

You are phoned on the Access Line by the Careflight retrieval doctor. He is 10 minutes away from RDH with a 32yo male who was stabbed with a kitchen knife in the RUQ of the abdomen by his wife 3 hours ago. The patient had normal vitals after receiving 3L normal saline but suddenly deteriorated on landing in Darwin. Current vitals: Confused, clammy and sweaty with distended abdomen. GCS 14, HR 140, BP 80/50, SaO2. Temp 35.7 if asked. 4th litre NS commenced.

## Patient Instructions

Confused, “wife stabbed me”

**Medical History**: Fit, no meds, NKDA, ADT unknown

**Social:** Lives in Gunbalanya with wife and 3 children. No meds. Occasional etoh.

## Proposed Scenario Progression

* Activation of Trauma Call, ETA 10 mins. Prepare Trauma team, resus equipment including vascular access, Rapid infuser primed, TXA, MTP. Consider early discussion with Duty anaesthetist and on-call surgical consultant regarding suspected Cat 1 case for laparotomy
* Patient arrives: Simultaneous CF handover and focussed primary survey. FAST scan confirms haemoperitoneum and abnormal vital signs prompts activation of Code Crimson with subsequent focus on SBP 80mmHg, delivery of essential interventions and departure for OT within 5 minutes. Log roll shows no posterior wound. Hb 70 on VBG; CXR (if taken) shows pneumoperitoneum. Resus team consider improvements to IV access/establishing arterial line. Delivers fentanyl for analgesia. Considers metaraminol boluses
* Takes baseline bloods including extended coags. Delivers appropriate GI antibiotic cover or hands over to operative team to administer
* Delivery of TXA and MTP components 1:1:1:1 via fluid warming device (FFP arrives towards end of sim); Hypotensive resuscitation – aims for SBP 80. Confers with Anaesthetic staff re need for MTP pack 2 for theatre
* Prevents hypothermia with warmed infusions and blankets; considers Bair hugger in resus. Inserts IDC with thermometer if time permits
* Team confers between surgery/OT on disposition (theatre for emergency exploratory laparotomy)
* Debrief: Consideration of team debrief, forensic issues; liaison with family in community