

Code Crimson simulation training checklist

This document is for staff who manage critically bleeding trauma patients in tertiary trauma centres and smaller secondary hospitals. It is one of four resources to support the implementation of guidelines and standardise the management of critical bleeding. The resources are available online in editable or print formats here: www.hqsc.govt.nz/our-programmes/national-trauma-network/publications-and-resources/publication/4398.

Purpose

Simulation training creates an opportunity to understand and support system and process change, while considering site-specific challenges and human factors that can influence how the national best-practice critical haemorrhage bundle of care guidelines (www.hqsc.govt.nz/our-programmes/national-trauma-network/publications-and-resources/publication/4177) are applied within an organisation.

This checklist is intended to be used as a guide for running an in-situ simulation of a critically haemorrhaging trauma patient in an emergency department (ED). Some criteria may not be relevant at every locality depending on infrastructure.

Scenario

This simulation checklist reflects a trauma patient who is recognised either pre-hospital or on arrival to the ED as having life-threatening critical haemorrhage and the Code Crimson/local equivalent accelerated treatment pathway is activated.

Traumatic critical haemorrhage simulation checklist			Comments
Activation and preparation			
Are pre-hospital 'Code Crimson' criteria met on ambulance pre-arrival notification? <ul style="list-style-type: none"> • ABC Score greater than 2 <ul style="list-style-type: none"> – HR ≥ 120 bpm – Systolic BP ≤ 90mmHg – Penetrating injury (thoracic, abdominal or junctional) – E-FAST scan positive or • Received pre-hospital blood products 	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>
ED charge nurse or designated staff member activates trauma call and/or accelerated treatment pathway ('Code Crimson' or local equivalent)	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>
Trauma team roles are allocated before patient arrives (as follows)	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>
Team leader: <ul style="list-style-type: none"> • Ensures the following teams are contacted with ETA if not already notified: <ul style="list-style-type: none"> – Anaesthetist – Operating room nurse coordinator – Blood bank – Radiology registrar 	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>
Airway doctor: <ul style="list-style-type: none"> • Makes airway management plan 	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>
Airway nurse/anaesthetic technician: <ul style="list-style-type: none"> • Sets up airway equipment • Checks suction 	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>
Procedure doctor: <ul style="list-style-type: none"> • Ultrasound machine at bedside 	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>

Procedure nurse: <ul style="list-style-type: none"> • Venous access and blood sampling supplies prepared for trauma bloods • Fluid warmer primed and ready for use • Rapid infuser primed and ready for use or pressure bags available at bedside • Pelvic binder on trauma bed 	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Surgical registrar: <ul style="list-style-type: none"> • Contacts on-call surgical consultant if not already notified in trauma call 	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
ED charge nurse or ED registrar: <ul style="list-style-type: none"> • Contacts on-call ED consultant if not already on site 	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
ICU registrar: <ul style="list-style-type: none"> • Contacts on-call ICU consultant 	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Staff: <ul style="list-style-type: none"> • Don appropriate PPE 	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
<p style="text-align: center;"><u>STOP</u></p> <ul style="list-style-type: none"> • Team briefing of roles and responsibilities • Review airway checklist • All team members aware goal is to move patient from ED to site of definitive haemorrhage control within 30 minutes 	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Time of ED arrival:				
Take handover from ambulance personnel	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Confirm if TXA has been administered pre-hospital	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Confirm estimated blood loss volume	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Initiate primary survey	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	

Activate Code Crimson/accelerated treatment pathway if the patient meets criteria and it has not already been activated	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Blood bank notified of need for emergency blood units	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Obtain at least two points of IV access	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Take initial bloods for: <ul style="list-style-type: none"> • Full blood count including platelet count • Coagulation screen • Dilute thrombin clotting time (dTCT) if on a direct oral anticoagulant • Arterial or venous blood gas for lactate • Crossmatch sample 	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Initiate secondary survey	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Perform bedside E-FAST	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Temperature measured within 15 minutes of arrival	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Actively warm the patient	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Actively warm IV fluids/blood products	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
<ul style="list-style-type: none"> • Give 2 g dose of TXA within 3 hours of injury • If 1 g TXA given pre-hospital, consider additional 1 g IV bolus 	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Emergency blood units arrive at the bedside within 10 minutes	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Pre-transfusion bedside patient and product identification check is performed before administration of any component	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	

Team leader/designated staff member ('MTP guardian') rings blood bank and states they are activating the MTP	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Team leader or designated staff member/MTP guardian calls for each box as required	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Limit or stop crystalloid fluids	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Consider reversal of anticoagulant drugs if indicated	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Senior surgeon confirms plan for destination of definitive haemorrhage control	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Interventional radiologist consulted for options if IR service available	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Senior anaesthetist/intensivist communicates plan for operating room availability and transfer	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
ED charge nurse or primary nurse provides brief handover to operating room nursing staff	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	
Patient begins movement from ED to area for definitive haemorrhage control within 30 minutes	Y <input type="checkbox"/>	N <input type="checkbox"/>	N/A <input type="checkbox"/>	

Abbreviations: ABC = assessment of blood consumption; BP = blood pressure; bpm = beats per minute; dTCT = dilute thrombin clotting time; ED = emergency department; E-FAST = extended focused assessment with sonography for trauma; ETA = estimated time of arrival; HR = heart rate; ICU = intensive care unit; IR = interventional radiology; IV = intravenous; MTP = massive transfusion protocol; PPE = personal protective equipment; TXA = tranexamic acid.

Providers are free to edit and adapt this document as needed, including addition of provider logo.

If you have any suggested changes or areas for improvement you would like considered for inclusion in the national best practice critical bleeding bundle of care, please email help@majortrauma.nz.

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