University Hospitals Birmingham

Code Red Protocol

The Code Red protocol is designed to identify and provide advance notice of the arrival of critically hypovolaemic trauma patients allowing for enhanced care to be planned and delivered. Prior warning will be given of the arrival of a patient in need of resuscitative massive blood transfusion and potentially damage control surgery. This will enable care to be consultant led across multiple specialties, and streamline resuscitation and movement to definite haemorrhage control.

The Code Red protocol consists of:

1. Pre-hospital identification and early notification to UHB of patient arrival
2. Automatic Consultant Call in
3. Emergency Department enhanced response
4. Massive Haemorrhage Protocol activation
5. Theatre Standby

1 Pre- hospital Code Red Activation

Code Red is a West Midlands Trauma Network alert term used by the regions advanced pre-hospital teams to notify receiving Major Trauma Centres (MTCs) of the impending arrival of a critically hypovolaemic patient.

The regions advanced pre-hospital teams (MAA/MERIT, TAAS, NSB, MARS, WMCT, CSI) are staffed by senior, often consultant grade, clinicians. The alert term is not for use by wider West Midlands Ambulance Service (WMAS) crews. The pre-hospital team will attempt to give as much notice as possible to enable receiving MTC measures to be in place ready for the patient arrival.

Code Red Patients *should* meet all three inclusion criteria:

- **Suspected ongoing active haemorrhage**
- **Sustained Systolic BP<90mmHg or absent radial pulse**
- **Transient or no response to volume resuscitation where appropriate**

It is recognised that some patients will continue to compensate and maintain a blood pressure above 90mmHg, despite being critically hypovolaemic, before suddenly deteriorating. **Identification of these patients will rely on the pre-hospital clinician's judgement**.

Additional requests, such as surgical specialty required to be on standby and whether any specific specialised procedures (such as thoracotomy may be needed), should also be passed with the alert message. When identified by the prehospital clinician, or if considered required by the Consultant Trauma Team Leader, the Consultant surgeon for that specialty will be contacted as part of the Consultant Call in.

In-hospital Code Red Activation

It is recognised that there will be cases delivered to UHB by WMAS road crews where activation of the Code Red protocol would be beneficial. Identifying these patients based on the pre-hospital alert information is challenging. The decision to activate the Code Red Protocol prior to patient arrival at UHB will be made by the Consultant Trauma Team Leader, discussion with the Regional Trauma Desk maybe of value. The Code Red Protocol should **not** be activated by ED when cases are already being attended to by one of the regions advanced pre-hospital team following the inference that they have judged that a Code Red activation is not warranted.

2 Automatic Consultant Call in

On receipt of Code Red activation from ED switchboard will pass, via the trauma pager system to the wider hospital, a Code Red Trauma call. This will include the term "Code Red", an estimated time of arrival, and if identified the surgical specialties required. For example: "Trauma by air, Code Red, Penetrating chest, Cardiothoracics, ETA 15.20"

Switchboard will then contact, in order, the following Clinicians informing them of a Code Red Trauma alert and the ETA:

- Co-ordinating Trauma Consultant (CTC)
- General Surgical Registrar on Bleep 1243

If a required surgical specialty has been identified by the pre-hospital team or the Consultant Trauma Team leader then the oncall consultant and registrar for that specialty will also need to be contacted by switchboard.

The ED Consultant for Trauma will already be in the ED or will be contacted by the ED co-ordinator on receipt of the alert from WMAS.
The Consultant Anaesthetist(s) responsible for emergency theatres will be contacted by the Emergency Theatre Co-ordinator.

The consultants will be informed of the impending arrival of a Code Red patient, using the term "Code Red", and the expected patient arrival time. Ideally the consultants will have sufficient notification to enable them to attend ED prior to the patient's arrival.

3 Enhanced Emergency Department response

On receipt of a Code Red alert message ED will look to provide an enhanced response for the patient:

a. ***Code Red Trauma team activation notification to switchboard including any required surgical specialties***
b. ***Receptionist to generate temporary patient number***
c. ***Phone call to Blood Bank requesting Massive Transfusion Pack 1 (using temporary patient number)***
d. ***Phone call to ED Imaging to prepare CT and mobile X-ray***
e. ***Enhanced ED staffing (Porter, Additional Belmont/ROTEM nurses, Access Doctor (IO/Swan sheath)***
f. ***Additional Equipment (central access, chest drains)***
g. ***Belmont primed (with blood)***
h. ***Larger 'Trauma bay' used***

The trauma team will plan to attend a team brief **10 minutes** prior to the given ETA of the patient. The Anaesthetic Team will contact theatres on 13818 to confirm theatre availability and any requirements. Should the TTL wish to move the patient rapidly to theatres the Emergency Theatre Co-ordinator must be contacted on 13818 to check that a theatre is available.

4 Massive Haemorrhage Protocol activation

Blood Bank will receive the Code Red Trauma activation broadcast over their 1376 pager. On hearing this broadcast they will activate the Major Haemorrhage Protocol. The default contact number to call the Emergency Department to gain patient identification and details will be: **12609.**

Portering services on receipt of the Code Red Trauma activation broadcast over their pagers should follow the Major Haemorrhage Protocol process and report to Blood Bank to collect and deliver blood and blood products to the Emergency Department.

5 Theatre Standby

The Emergency Theatres Co-ordinator will receive the Code Red trauma via the pager system.

The Emergency Theatres Co-ordinator will contact the Consultant Anaesthetist(s) responsible for emergency theatres and liaise with them regarding theatre use and staffing. The Anaesthetic Consultant will then attend ED to help with patient management. Ongoing communication between ED and theatres, regarding requirements and time frames, is done via **13818** and that responsibility lies with the anaesthetic team.

On receipt of Code Red notification they will enact the Code Red Theatre Preparation Checklist. (See appendix) This identifies an appropriate theatre that will be readied to receive the patient if required. Measures also include preparing that theatre with equipment such as appropriate surgical trays, cell saver and Belmont rapid infuser.

The theatre should be made ready to receive the patient by the expected arrival time of the patient at UHB. This will allow for a rapid transit through ED if required. The ED TTL or anaesthetic team will communicate with the Emergency Theatres Co-ordinator prior to the patient arriving in theatres. A member of the theatre team will be responsible for meeting the team in theatre reception and directing the team to the relevant theatre if the Anaesthetic team have not already been informed of the theatre to be used.

Stand Down

In the event of the patient dying prior to arrival at UHB, on receipt of notification from WMAS of the non-arrival of the patient, a "*Code Red Stand-down*" will be broadcast via the trauma pager system. Each link in the system is then responsible for standing down what it would normally activate.
There is **no** option for the pre-hospital clinicians to 'downgrade' a Code Red alert should the clinical situation improve. The process may be stood down once the patient has been assessed in the Emergency Department.

Patient Identifying details

In order to avoid confusion the patient will continue to be known by their admitting trauma name e.g. Trauma Echo. This will avoid the need for repeat blood sampling and streamline transfusions. Once on the Critical Care Unit the true patient details can be given to the patient.

Multiple Code Reds

Multiple Code Reds are likely challenge the system. For multiple Code Reds using their admitting trauma alert names e.g. Trauma Echo, Trauma Foxtrot will be vital for communication.
Calling in of additional Consultant staff is at the discretion of the Lead Consultant for that specialty. Out of hours additional non-resident theatre staff may need to be called in to staff further theatres.

Audit

The Code Red protocol at UHB is audited on a continuous rolling basis.

Code Red Policy – Emergency Department

ED notified by WMAS Trauma Desk of Code Red patient
Clinical details passed plus, if identified, required Surgical Specialties.
Follow Code Red Checklist on Trauma Alert Form

1. Inform ED Consultant for Trauma of Code Red

2. Contact Switchboard inform Code Red (plus any Specialty Requests)

3. Prepare trauma bay:
Staff
Equipment – Belmont, invasive lines, chest drains etc

4. Inform Reception – Patient documentation

6. Inform ED Imaging

5. Confirm Blood Bank have called back and received patient identification and details for MTP

Aim for Team Brief 10 minutes prior to patient arrival

PATIENT ARRIVAL

Theatre required?

Ensure Emergency Theatres Coordinator on **13818** contacted

Code Red Policy – Switchboard

Switchboard notified by ED of Code Red arrival
OR
Code Red in Emergency Department
Details include Land or Air, Estimated Time of Arrival, Surgical Specialties required

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Trauma alert message passed via the pager system
For example: "**Code Red Trauma** by air, Cardiothoracics, ETA 15.20"

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Consultant Call in: switchboard will contact:

- Co-ordinating Trauma Consultant (CTC)
- General Surgical Registrar on Bleep 1243

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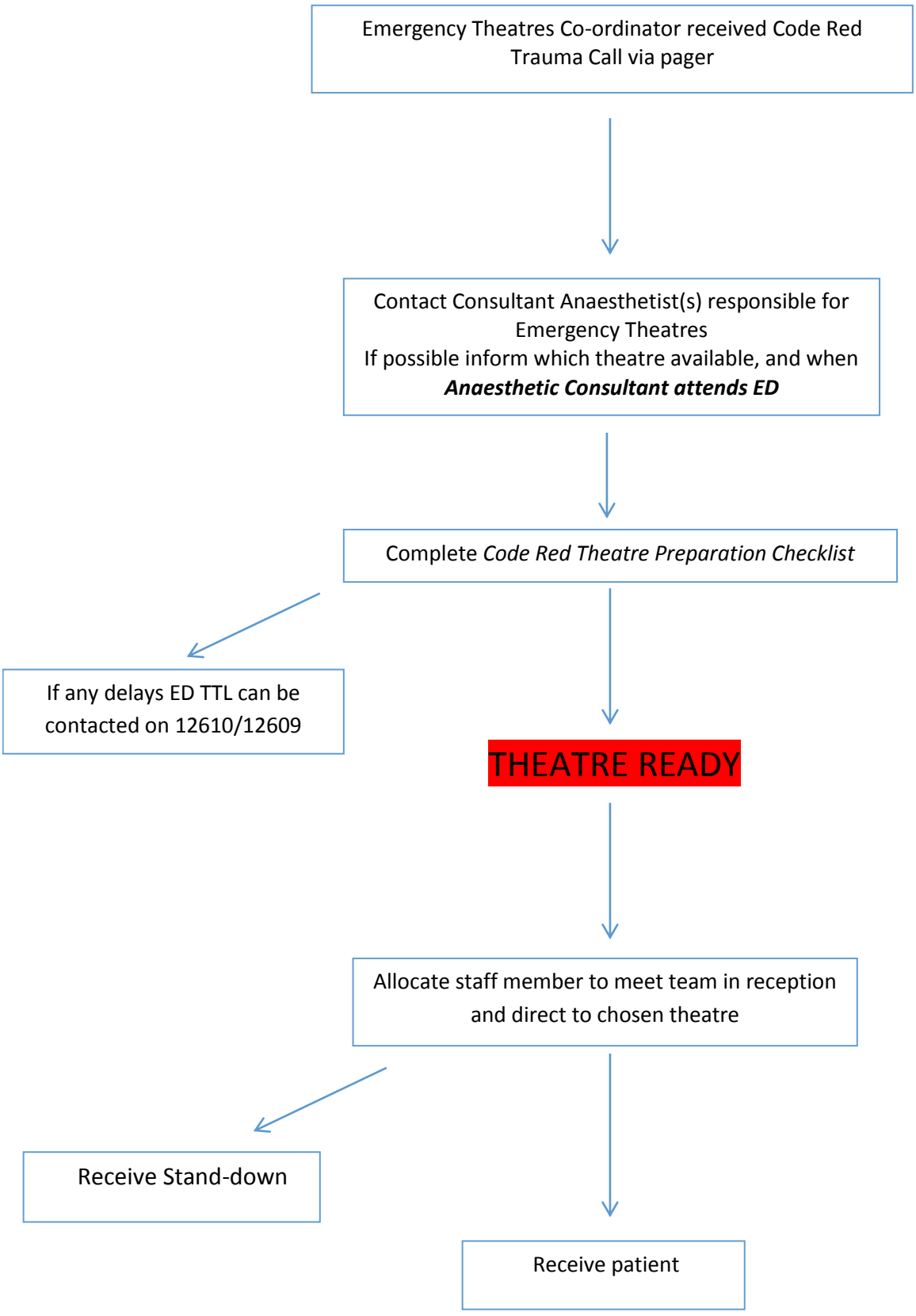
Additional Required Surgical Consultants Called in:

- Requested Surgical Specialty oncall Consultant Surgeon and Registrar

Code Red Policy – Theatres



Code Red Policy – Blood Bank

Blood Bank notified of Code Red Trauma arrival by Code Red Trauma message broadcast over Bleep 1376

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Recognise that **Code Red** equals activate the **Major Haemorrhage Protocol**

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Biomedical Scientist contacts **ED Resus** on **12609** to receive patient details and identification

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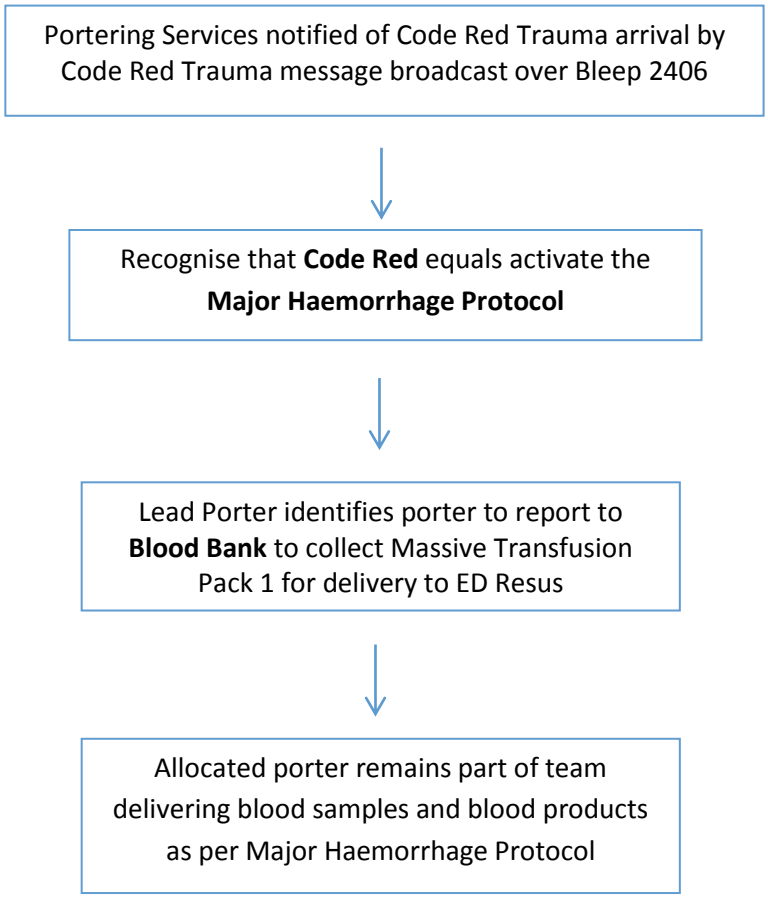
Continues to issue blood and products as per Major Haemorrhage Protocol

Code Red Policy – Portering Services



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Code Red Trauma Call

Theatre Department Checklist

1.	Identify available theatre for “Code Red” urgent trauma	
2.	0800-2000 Notify/Ensure Anaesthetic Consultant aware of case	
3.	Ensure correct skill mix of staff	
4.	Communicate information regarding patient injuries to theatre team in advance	
5.	Inform Emergency Department on 12610 if theatre not available prior to patient ETA	
6.	Operating table in central position with 2 arm boards, arm supports and heel pads	
7.	Diathermy machine and leads checked	
8.	Suction units x2 connected and checked	
9.	Full set of lateral supports with table attachments	
10.	Bair hugger and fluid warmer	
11.	Urinary catheter trolley checked	
12.	Stapling trolley available and checked	
13.	Tourniquet machine with range of cuff sizes	
14.	Chest drain insertion kit available	
15.	**Laparotomy:** Major General, Abdominal Tray, Omnitract, Golliger, (with a Major Vascular and an Aneurysm Extras Tray on standby)	
16.	**Thoracotomy:** Cardiac Emergency Bypass Tray, Cardiac Stryker Saw and blade, Major Chest Tray, Accessible defibrillator	
17	**Craniotomy:** Mayfield head attachments, basic neuro tray, Anspach drill & foot pedal, intracranial monitoring system	

On Patient Arrival

1.	Brief patient handover to ENTIRE theatre team from ED Team Leader/Anaesthetic Consultant	
2.	Patient transferred to operating table	
3.	Monitoring secured	
4.	WHO Safety Checks	
5.	Copy of ED transfusion details given to lead Anaesthetist	
6.	Confirmation of location of shock pack	
7.	Commence	

Team debrief at end of procedure