University Hospitals Birmingham

Code Red Protocol

The UHB 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. Patients in need of resuscitative massive blood transfusion and potentially damage control surgery will look to be identified. This will enable care to be consultant led across multiple specialties, streamline resuscitation and movement to definite haemorrhage control.

Audit data has demonstrated likely differing pathways when considering two mechanisms of trauma: blunt or penetrating. Given this information there are now differing responses to *Blunt* Code Reds or *Penetrating* Code Reds.

The Code Red protocol consists of:

1. Early identification of Code Red patients either by:
    a. Pre-Hospital identification of a Code Red Major Haemorrhage patient by one of the regions advanced Pre-hospital teams.
    b. Emergency Department Pre-arrival activation based either on the clinical picture passed in the alert from West Midlands Ambulance Service
    c. Emergency Department Activation based on the clinical picture after the patient has arrived in the Emergency Department

2. Automatic Consultant Call in
3. Emergency Department enhanced response
4. Massive Haemorrhage Protocol activation
5. Theatre Standby

1. Code Red Activation

<u>Pre-Hospital Activation</u>

1.1. 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.
(See WMAS MAA/MERIT Code Red Major Haemorrhage Protocol)

1.2. 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.

1.3. 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

Additional Pre-hospital Requests

1.4. Additional Requests, such as a "*Required Surgical Specialty*" to be on standby or if any specific specialised required procedures (such as thoracotomy) should also be passed with the alert message.

1.5. When identified by the pre-hospital 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.

1.6. Pre-hospital Teams will endeavour to pass the alert using a conference call with the TTL.

Emergency Department Activation

1.7. It is recognised that there will be cases delivered to UHB by WMAS road crews where activation of the UHB Code Red Protocol would be beneficial. Identifying these patients based on the pre-hospital alert information is challenging.

1.8. 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, or Critical Care Paramedics caring for the patient, maybe of value.

1.9. The Trauma Team Leader (Consultant or Registrar) may activate the protocol for patients already in the Emergency Department. In this circumstance the wider Trust will need to be informed of this upgrade in trauma alert. Switchboard must be contacted and informed of the upgrade in Trauma response; allowing Switchboard to put out an additional "Code Red in Department" message over the trauma bleep system.

2. **Automatic Consultant Call in**

2.1. The protocol aims to deliver consultant led care comprising of
- Emergency Department Consultant
- Consultant Trauma Clinician
- Anaesthetic and/or Critical Care Consultant

2.2. To activate the UHB Code Red Protocol ED will need to pass to the switchboard the alert information including the following:
- the term "Code Red"
- either "Blunt Trauma" or "Penetrating Trauma"
- an estimated time of arrival
- and if identified the *Required Surgical Specialty*

For example: "Code Red, Penetrating Trauma, ETA 15.20 by air, Stabbing to chest, Cardiothoracics required"

This information will then be broadcast via the trauma bleep system to the wider hospital.

2.3. 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

2.4. If a "*Required Surgical Specialty*" has been identified then the oncall consultant and registrar for that specialty will also need to be contacted by switchboard.

2.5. The Emergency Department Consultant for Trauma will already be in the ED or will be contacted by the ED Nursing co-ordinator on receipt of the alert from WMAS.

2.6. 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**

3.1. On receipt of a Code Red alert message ED will look to provide an enhanced response for the patient:
3.2. Code Red Trauma team activation notification to switchboard including any *Required Surgical Specialty*.
3.3. Before being transferred to Blood Bank to request Massive Transfusion Pack 1 (using Trauma Identify and 'K' number)
3.4. Receptionist to generate Trauma Identity and 'K' number
3.5. Phone call to ED Imaging to prepare CT and mobile X-ray

3.6. Enhanced ED staffing (Porter, Additional Belmont/ROTEM nurses, Access Doctor (IO/Swan sheath)
3.7. Additional Equipment (central access, chest drains)
3.8. Belmont primed (with blood)
3.9. Larger 'Trauma bay' used if possible

3.10. The trauma team will plan to attend a team brief **10 minutes** prior to the given ETA of the patient.

4. Massive Haemorrhage Protocol activation

4.1. 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 Emergency Department caller will remain on the line with switch in order to be transferred to Blood Bank to pass the patient's identification and details.

4.2. 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

5.1. The Emergency Theatres Co-ordinator will receive notification of the Code Red trauma via the pager system. They may be contacted on 13818 for further updates as to theatre availability or additional requests.

5.2. 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 care and management.

5.3. The Anaesthetic Team is responsible for communicating with Theatres. They 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** prior to moving the patient to check that a theatre is available.

5.4. Theatres will have a different response between Blunt Code Reds and Penetrating Code Reds: 70% of *Penetrating* Code Reds require theatre; in comparison only 30% of *Blunt* Code Reds require theatre.

5.5. Therefore for *Penetrating* Code Red traumas theatres will enact the full Code Red Theatre Preparation Checklist. (See appendix) This identifies an appropriate theatre that will be readied to receive the patient. Measures also include preparing that theatre with equipment such as cell savers and Belmont rapid infusers and opening appropriate surgical trays.

5.6. Given the lower incidence of *Blunt* Code Red traumas requiring theatre planning and preparation can be more considered. For example a theatre may be made ready but trays not opened.

5.7. The Anaesthetic team (or ED TTL) **must** communicate with the Emergency Theatres Co-ordinator on 13818 prior to the patient leaving the Emergency Department.

5.8. 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.

5.9. Once in theatre an abbreviated Code Red WHO Checklist may be used. Intra-operative communication should then include Sit-Reps to inform the whole team of the patient status.

6. Stand Down

6.1. 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.

6.2. 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.

7. Patient Identification

7.1. In order to avoid confusion the patient will continue to be known by their admitting UHB Trauma name. 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.

8. Multiple Code Reds

8.1. Multiple Code Reds are likely to challenge the system. For multiple Code Reds using their admitting UHB Trauma alert names 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.

9. Audit

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