

Massive Haemorrhage Guideline (**CODE RED**)

Version:	<i>2.0.0</i>
Author(s) and contact details:	<i>Hospital Transfusion Committee</i>
Purpose of the guideline:	<i>Management of patients who suffer massive, sudden and unexpected blood loss</i>
Who should use the guideline?	<i>Clinical personnel managing the patient</i>
How was the guideline developed?	<i>Through literature review and clinical experience of senior clinicians involved in massive haemorrhage situations</i>
How will the guideline be monitored?	<i>Audit of Code Red activations and review of the paperwork</i>
Approved by:	<i>Hospital Transfusion Committee</i>
Date Approved:	<i>September 2015</i>
Review Date:	<i>September 2018</i>

CODE RED GUIDELINE

Patient Demographics

First Name: _____ Surname: _____
 Patient Hospital Number: _____
 Patient NHS Number (if known): _____

Patient information

Age: _____
 Weight: _____
 Sex: _____
 Diagnosis: _____
 Ward/Department: _____

Consider **CODE RED** activation in any clinical situation in which there is suspected or known unexpected, uncontrolled, on-going blood loss that will require resuscitation with blood products to restore and maintain circulating blood volume

IF IN DOUBT CALL IT OUT

For medical, surgical or traumatic bleeding – call switchboard on 2222 and activate

CODE RED in...(location)

Make sure you **name the location**. The Trauma Team will be fast bleeped accordingly. Switchboard will additionally fast bleep the Blood Bank Technician, Haematology Consultant, Anaesthetic Blue Bleep holders and Theatre Co-ordinator for any **CODE RED** activation

For excessive bleeding in a controlled environment such as Theatre or PICU where an emergency response team is not required but blood products are, you can activate it as

CODE RED in THEATRE...(location)/PICU. NO TRAUMA TEAM REQUIRED

In this situation only the additional people listed above will be fast bleeped.

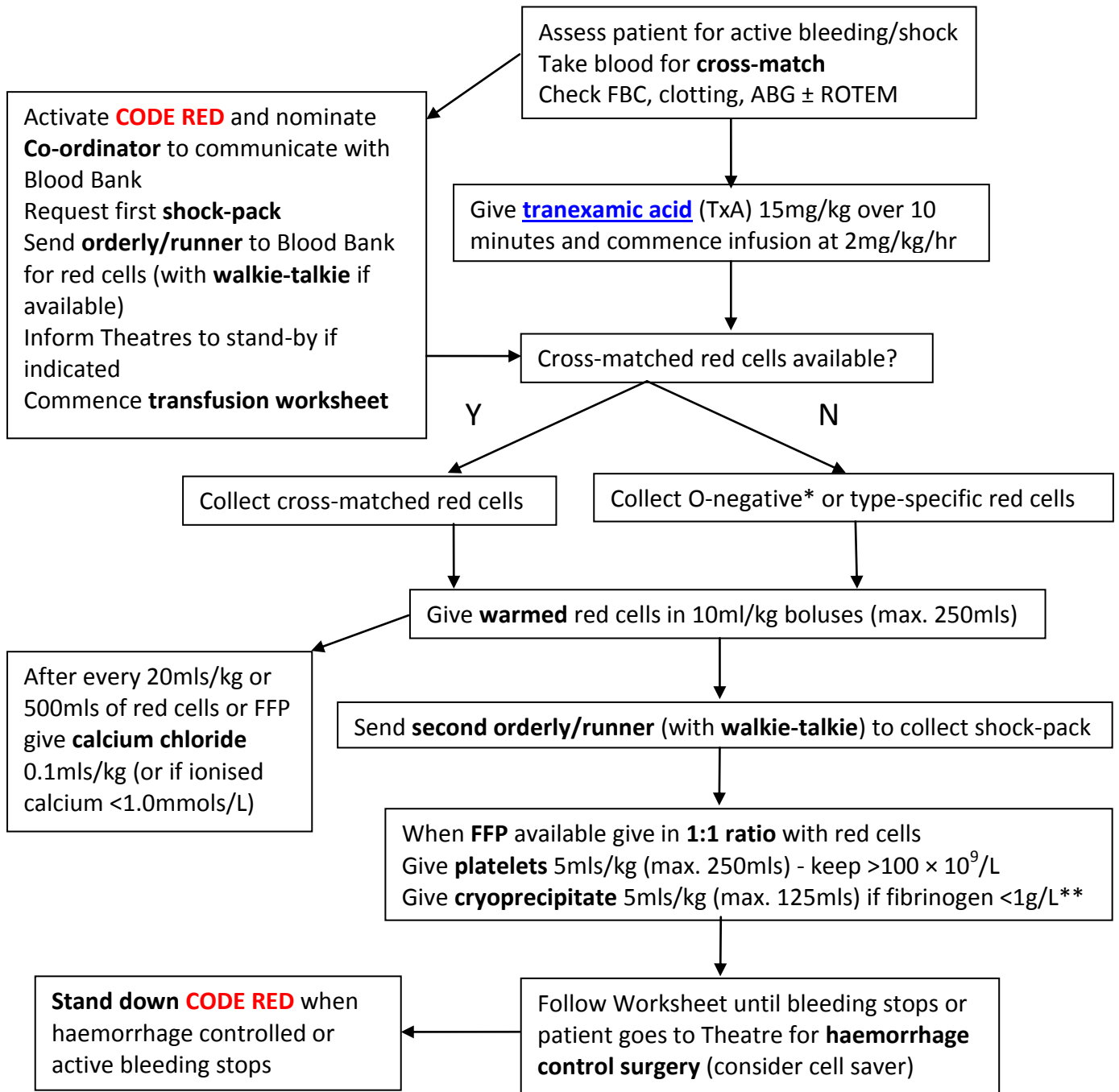
If you need to contact Blood Bank or the technician directly, use the following numbers:

Blood Bank

Extension 9874 (9am-5pm)
 Bleep 55034 (all other times)

O-negative blood is stored in blood fridges in PICU, ED, Main Theatres and Blood Bank

CODE RED FLOWCHART



Shock packs			
	<10kg 1 year	10-20kg 1-5 years	>20kg >5 years
Red cells	One unit	Two units	Four units
FFP	One unit	Two units	Four units
Platelets	One unit	Two units	Four units

*Collect only number of units appropriate for size of child

**FFP normally provides enough fibrinogen in 1:1 ratio

CODE RED TRANSFUSION WORKSHEET

Surname: Forename:
 PID: Age:
 Weight: Estimated Y N

Weight formulae: 0-1= (Age/2)+4 (in months)
 1-5 = (Agex2)+8 (in years)
 5-12 = (Agex3)+7 (in years)

Bolus size (max 250 mls): RBC (10mls/kg)..... FFP (10mls/kg)..... Plts (5mls/kg).....

Time	Bolus count	RBC	FFP	Platelets	Cryo	Blood result	Think about
:	1	[]	[]				TxA (15mg/kg)
:	2	[]	[]				Cell saver Gas/Hemocue
:	3	[]	[]				ROTEM/ clotting
:	4	[]	[]				Call for Plts±cryo
:	5	[]	[]				Calcium (0.3ml/kg CaGlu)
:	6	[]	[]				TxA infusion
:	7	[]	[]	[]	[]		ROTEM/ clotting
:	8	[]	[]				Blood gas Hemocue
:	9	[]	[]				Calcium (0.3ml/kg CaGlu)
:	10	[]	[]				Call for Plts±cryo
:	11	[]	[]				TxA infusion
:	12	[]	[]				ROTEM/ clotting
:	13	[]	[]				Blood gas Hemocue
:	14	[]	[]	[]	[]		Calcium (0.3ml/kg CaGlu)
:	15	[]	[]				Call for Plts±cryo
:	16	[]	[]				TxA infusion
:	17	[]	[]				ROTEM/ clotting
:	18	[]	[]				Blood gas Hemocue
:	19	[]	[]				Calcium (0.3ml/kg CaGlu)
:	20	[]	[]				Call for Plts±cryo

Paediatric Major Trauma?

Paediatric Major Haemorrhage? Then...

T	Tranexamic Acid	<ul style="list-style-type: none"> • If not administered already: • 15 mg/kg bolus (max 1g), followed by • 2 mg/kg/hr over 8 hours
R	Resuscitation	<ul style="list-style-type: none"> • Code Red, Dial 9874 / Bleep 55034 & consider: • Level one rapid infuser • Cell salvage • Hypotensive resuscitation (if post-pubertal) • Pelvic binder/splint #s/tourniquet • Limit crystalloid and colloid use
A	Avoid Hypothermia	<ul style="list-style-type: none"> • Target temperature > 36^oC • Remove wet clothing and sheets • Warm fluids • Warming blanket/mattress
U	Unstable? Damage Control Surgery	<ul style="list-style-type: none"> • If unstable, coagulopathic, hypothermic or acidotic, perform damage control surgery • Aim surgery time < 90 minutes • Haemorrhage control, decompression, decontamination and splintage
M	Metabolic	<ul style="list-style-type: none"> • Avoid acidosis • Base excess guides resuscitation • If lactate > 5mmol/L or rising, consider stopping surgery, splint and transfer to ICU
A	Avoid Vasoconstrictors	<ul style="list-style-type: none"> • Inappropriate use of vasoconstrictors doubles mortality • However, use may be required in cases of spinal cord or traumatic brain injury
T	Test Clotting	<ul style="list-style-type: none"> • Consider TEG/ROTEM • Check clotting every 15ml PRBC/kg BW • Aim platelets > 100x10⁹/L • Aim INR & aPTT ≤ 1.5 • Aim fibrinogen > 1.5g/L
I	Imaging	<ul style="list-style-type: none"> • Consider: <ul style="list-style-type: none"> • FAST (Not to delay CT) • CT: <ul style="list-style-type: none"> • Most severely injured/haemodynamically unstable patients gain most from CT • Interventional radiology
C	Calcium	<ul style="list-style-type: none"> • Maintain ionised Ca²⁺ > 1.0 mmol/L • Administer 0.3ml/kg 10% Calcium Gluconate over 10 mins as required