

Development of a Streamlined Paediatric Major Haemorrhage Pathway at a London Major Trauma Centre

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Introduction

- Penetrating trauma in children has increased
- Penetrating trauma is associated with
 - Activation of major haemorrhage pathways
 - High injury severity scores
 - Increased mortality
- Evidence of mortality reduction when major haemorrhage pathways are activated
- Pre-hospital alerts for major haemorrhage in the adult setting provide experienced personnel, blood product availability and reduces time to theatre

Method

The institution of the paediatric major haemorrhage pathway was facilitated in 3 main steps

1. Clinical
 - A joint working policy with co-located adult trauma teams; as major haemorrhage is a more frequent presentation in this setting
2. Equipment
 - Standardisation of equipment across departments (theatre / ED)
 - Creation dedicated paediatric acute injury trolleys
 - Creation of weight-based major haemorrhage protocols
3. Education
 - Introduction of a novel multi-disciplinary paediatric trauma simulation course:
 - **The Paediatric Theatre Team Trauma Course (PTTT)**
Designed for paediatric theatre staff less exposed to major trauma
 - Rotations of paediatric theatre staff to adult theatres for experience

Aim

- Develop paediatric specific criteria for a traumatic major haemorrhage
- Create a patient-centred pathway for management of major haemorrhage in critically injured children

Results

- Joint working policy: Cases managed adult or paediatric theatres depending on injuries, age of child, skill mix and theatre availability
- Simulation courses increased familiarity paediatric and adult theatres and improved staff non-technical skills
- Reduction in time to theatre – early liaison with theatre coordinators and theatre ‘pause’ for major haemorrhage pre-alerts
- Acute injury trolleys standardised with age appropriate paediatric resuscitative equipment

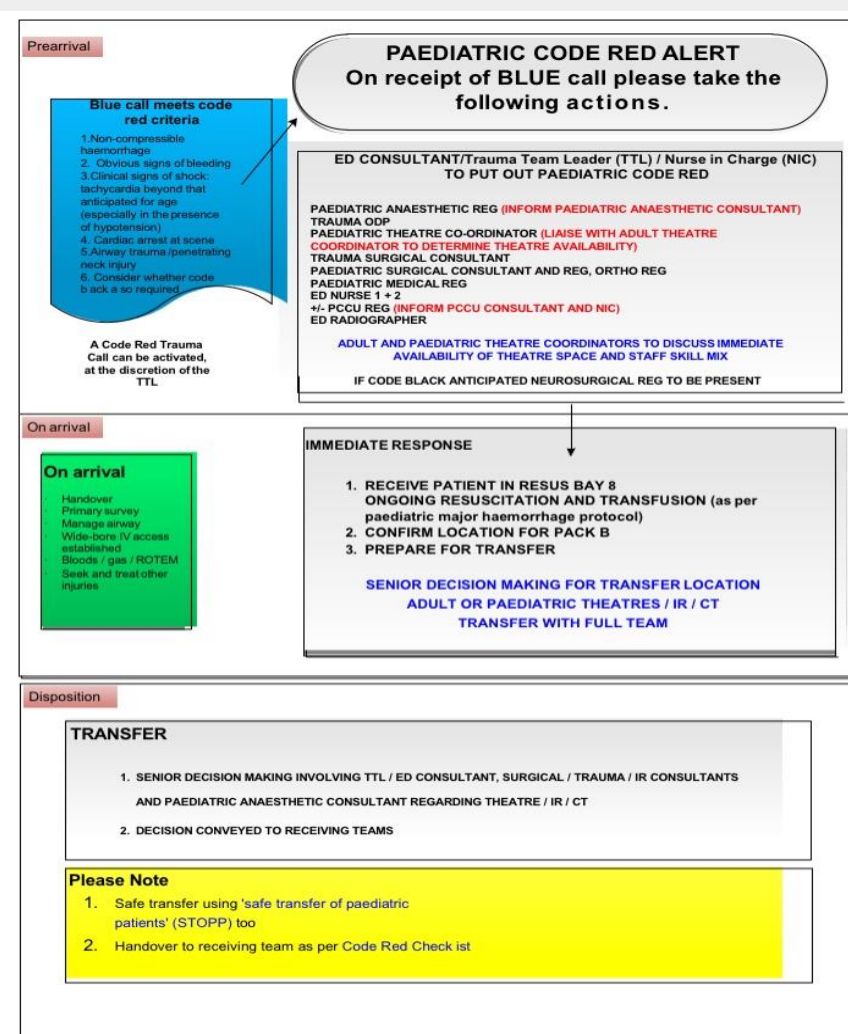
Conclusion

- Efficient management of acute severe injury in paediatric trauma with pre-determined pathways
- Education incorporating human factors improves theatre efficiency and situational awareness

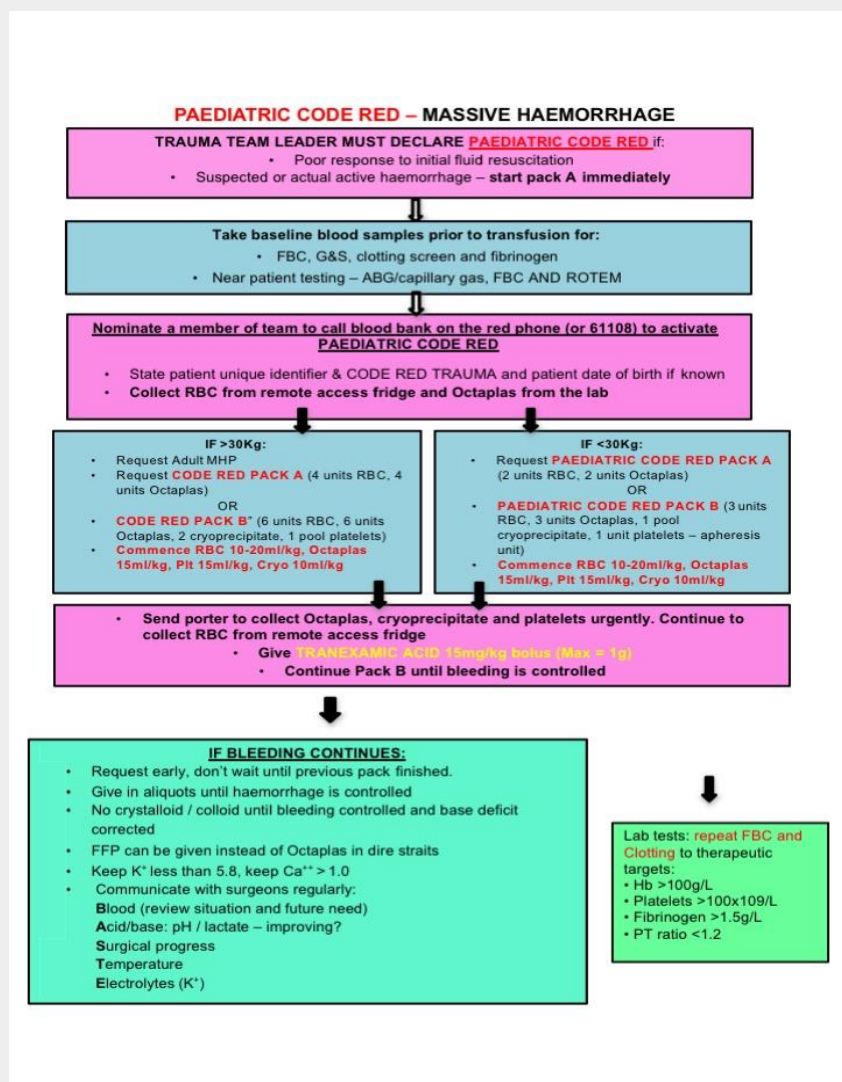
The Paediatric Theatre Team Trauma Course Major Haemorrhage Simulation



Paediatric Code Red Pathway Specific Criteria for Paediatric Trauma



Paediatric Traumatic Major Haemorrhage Protocol



Major Haemorrhage Trauma Pathway created with criteria for major haemorrhage pre-alerts defined

Major haemorrhage policy for children > and <30 Kg Ease of use reference + early blood bank response

References

1. Barts Health NHS Trust. Paediatric Code Red Protocol. 2020
2. London Major Trauma System. Paediatric Trauma Manual. 2020
3. Brohi K, Eaglestone S. Traumatic coagulopathy and massive transfusion: improving outcomes and saving blood. Southampton (UK): NIHR Journals Library; 2017 Nov.