# Suggested criteria for activation of MTP

- Actual or anticipated 4 units RBC in < 4 hrs, + haemodynamically unstable, +/– anticipated ongoing bleeding
- Severe thoracic, abdominal, pelvic or multiple long bone trauma
- Major obstetric, gastrointestinal or surgical bleeding

## Initial management of bleeding

- Identify cause
- Initial measures:
  - compression
  - tourniquet
  - packing
- Surgical assessment:
  - early surgery or angiography to stop bleeding

## Specific surgical considerations

- If significant physiological derangement, consider damage control surgery or angiography

## Cell salvage

- Consider use of cell salvage where appropriate

## Dosage

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|---|---|
| Platelet count < 50 x $10^9$/L | 1 adult therapeutic dose |
| INR > 1.5 | FFP 15 mL/kg[a] |
| Fibrinogen < 1.0 g/L | cryoprecipitate 3–4 g[a] |
| Tranexamic acid | loading dose 1 g over 10 min, then infusion of 1 g over 8 hrs |

a Local transfusion laboratory to advise on number of units needed to provide this dose

## Resuscitation

- Avoid hypothermia, institute active warming
- Avoid excessive crystalloid
- Tolerate permissive hypotension (BP 80–100 mmHg systolic) until active bleeding controlled
- Do not use haemoglobin alone as a transfusion trigger

## Special clinical situations

- Warfarin:
  - add vitamin K, prothrombinex/FFP
- Obstetric haemorrhage:
  - early DIC often present; consider cryoprecipitate
- Head injury:
  - aim for platelet count > 100 × $10^9$/L
  - permissive hypotension contraindicated

## Considerations for use of rFVIIa[b]

The *routine* use of rFVIIa in trauma patients is not recommended due to its lack of effect on mortality (Grade B) and variable effect on morbidity (Grade C). Institutions may choose to develop a process for the use of rFVIIa where there is:

- uncontrolled haemorrhage in salvageable patient, and
- failed surgical or radiological measures to control bleeding, and
- adequate blood component replacement, and
- pH > 7.2, temperature > $34^0$C.

Discuss dose with haematologist/transfusion specialist

[b] rFVIIa is not licensed for use in this situation; all use must be part of practice review.

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|---|---|---|---|---|---|
| ABG | arterial blood gas | FFP | fresh frozen plasma | APTT | activated partial thromboplastin time |
| INR | international normalised ratio | BP | blood pressure | MTP | massive transfusion protocol |
| DIC | disseminated intravascular coagulation | PT | prothrombin time | FBC | full blood count |
| RBC | red blood cell | rFVIIa | activated recombinant factor VII | | |