



CHECKLIST

Massive haemorrhage / transfusion

Activate, tranexamic acid, balanced products, calcium, warmth, bloods every 30–60 minutes



EM Orbit

Patient reference

Date

Time zero

Completed by

Stop the bleeding, replace what is lost in the ratio it was lost, and keep the patient warm, calcium-replete and not acidotic.

Activate

- ☐ **Trigger: haemorrhagic shock, ABC score ≥ 2 (penetrating, SBP ≤ 90 , HR ≥ 120 , positive FAST), shock index > 1 , or anticipated ≥ 4 units in an hour**

Activate the massive haemorrhage protocol by phone; name the coordinator and the runner.

- ☐ **Two large-bore IVs or a rapid infusion catheter; send crossmatch, FBC, coagulation, fibrinogen, ionised calcium, gas with lactate**

- ☐ **Tranexamic acid 1 g IV over 10 minutes within 3 hours of injury, then 1 g over 8 hours**

Do not give after 3 hours in trauma. Also indicated in postpartum and GI haemorrhage per local protocol.

- ☐ **Fibrinogen > 1.5 g/L: cryoprecipitate 2 pools (or fibrinogen concentrate 3–4 g)**

Give early — fibrinogen falls first.

- ☐ **Calcium: ionised $\text{Ca}^{2+} > 1.1$ mmol/L — calcium chloride 10% 10 mL after every 4 units, or per ionised level**

Citrate in products binds calcium; hypocalcaemia worsens coagulopathy and contractility.

- ☐ **All products through a warmer; warm the patient; aim core temperature $> 35^\circ\text{C}$**

- ☐ **Permissive hypotension SBP 80–90 mmHg until haemorrhage is controlled — unless traumatic brain injury (then MAP ≥ 80)**

Minimise crystalloid.

- ☐ **Viscoelastic testing (TEG/ROTEM) to guide products where available**

Control the source

- ☐ **Direct pressure, tourniquet for limb haemorrhage, pelvic binder, haemostatic dressings, splint long bones**
- ☐ **Reverse anticoagulants: PCC + vitamin K for warfarin; idarucizumab for dabigatran; andexanet or PCC for Xa inhibitors**
- ☐ **Definitive control: surgery or interventional radiology — call early, decide the destination within minutes**

Transfuse

- ☐ **Red cells : plasma : platelets in a 1 : 1 : 1 ratio; start with O-negative / group-specific while awaiting crossmatch**

Whole blood where available.

Reassess every 30–60 minutes

- ☐ **Repeat FBC, coagulation, fibrinogen, ionised calcium, potassium, gas and lactate**

Targets: Hb 70–90 g/L, platelets > 50 (> 100 in TBI), PT ratio < 1.5 , fibrinogen > 1.5 .

- ☐ **Potassium — hyperkalaemia from rapid transfusion; treat**

- ☐ **Stand down when bleeding is controlled; return unused products; document totals**

Obstetric haemorrhage: fibrinogen target > 2 g/L; oxytocics and uterine measures per protocol. · Children: 10–20 mL/kg red cells, plasma and platelets in the same ratio; tranexamic acid 15 mg/kg.



A drafted aid to memory, awaiting senior review. It does not replace your local protocol or your clinical judgement. Source: PROPPR 2015 · CRASH-2 · European trauma bleeding guideline 2023. EM Orbit · Emergency medicine, in one orbit · massive-transfusion · red rows are the steps that must not be missed