PROCEDURE

BLOOD PRODUCTS SETUP

Indications

- Blunt or penetrating trauma to abdomen or torso
- Obvious massive external blood loss
- Abdominal or thoracic aneurysm
- Significant GI bleeding
- Uncontrollable bleeding
- Any visualized or suspected severe internal or external hemorrhage

Considerations

- Rh negative blood products should be given to women of child-bearing age whenever possible.
- Some patients' religious beliefs may prohibit the administration of blood products.

Equipment

- Selected blood products
- (1) 1000 mL bag of normal saline
- 1 Y-type blood tubing set
- Warming device
- Pressure infuser (if needed)

Procedure

1. Obtain IV/IO access, preferably at least 2 that are 18 gauge or larger.
2. Quickly assess for any indicators that the patient would not want to receive blood products (e.g., verbal religious preference, medical alert tag, wallet card). **This should not delay patient care**.
3. Verify and document blood product identification:
    - Product type
    - Unit/donor number
    - Expiration date
    - Blood type
    - Temperature indicator status (if present)
4. Connect the Y-type blood tubing to normal saline and prime the tubing with normal saline.
5. Connect the Y-type blood tubing to the chosen blood product.
6. Connect the tubing to a warming device.
7. Connect the tubing outlet directly to the IV/IO hub.
8. Infuse over 3-5 minutes. Use a pressure infuser if necessary to achieve the desired infusion time.
9. Monitor and document vital signs every 5 minutes during transfusion (before, during, and after):
    - Blood pressure
    - Heart rate
    - Respiratory rate
    - Oxygen saturation
    - $EtCO_2$
    - Temperature
10. Continually monitor for signs of transfusion reaction.

ADULT PROTOCOL

BLOOD PRODUCT ADMINISTRATION

UNIVERSAL PATIENT CARE

Obtain multiple 18 gauge or larger IV/IO ACCESS sites.

Request a captain and blood products to the scene immediately!

See BLOOD PRODUCTS SETUP procedure for instructions on how to set up for blood product administration.

Before, during, or after PRBC and plasma transfusion, administer:

tranexamic acid (TXA) **2 g IVP** (unless GI bleed is suspected)

AND

calcium gluconate **3 g IV drip** over 10 minutes

Administer **1 unit** of PRBCs (O+/O-) and **1 unit** of liquid plasma over 3-5 minutes.

If blood products are given, notify the receiving hospital or air medical crew as soon as practical!

Assess vital signs every 5 minutes and assess for transfusion reaction.

If unable to obtain MAP > 65 after administration of PRBC and plasma, administer an additional unit of each at the same rate (if available).

If after 2 units of PRBCs and plasma MAP is still < 65, administer push-dose epinephrine 1:100,000 **5-20 mcg IV** every 3-5 minutes as needed to maintain MAP > 65.

If transfusion reaction is suspected, immediately discontinue transfusion and treat with ANAPHYLAXIS protocol.

TRANSFUSION REACTION SIGNS & SYMPTOMS

- **Hives**
- **Wheezing**
- **Hypoxia**
- **Rigors**
- **Fever**
- **Abdominal pain**
- **Vomiting**
- **Sudden worsening of tachycardia/hypotension**

SCOPE OF PRACTICE

EMR	EMT-B	AEMT	PARAMEDIC	CCP	CP

Assessment
• Visualized or suspected severe internal/external hemorrhage **AND/OR** • HR > 110 • Systolic BP < 90 • RR > 24 • Capillary refill > 2 seconds or cool, pale skin

Indications
• Blunt or penetrating trauma to abdomen or torso • Obvious massive external blood loss • Abdominal or thoracic aneurysm • Significant GI bleeding • Uncontrollable bleeding

Contraindications/Precautions
• Rh negative blood products should be given to women of child-bearing age whenever possible. • Some patients' religious beliefs may prohibit the administration of blood products.

PEDIATRIC PROTOCOL

BLOOD PRODUCT ADMINISTRATION

BROSELOW									
	< 3 mos	3-5 mos	6-11 mos	12-24 mos	2 yrs	3-4 yrs	5-6 yrs	7-9 yrs	10-11 yrs
	3-5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
	6-11 lbs	13-15 lbs	18-20 lbs	22-24 lbs	26-31 lbs	33-37 lbs	42-51 lbs	53-64 lbs	66-81 in
	18-24 in	24-26 in	26-29 in	29-33 in	33-38 in	38-43 in	43-48 in	48-52 in	52-57 in

UNIVERSAL PATIENT CARE

Obtain multiple 20 gauge or larger IV/IO ACCESS sites.

See BLOOD PRODUCTS SETUP procedure for instructions on how to set up for blood product administration.

Request a captain and blood products to the scene immediately!

Before, during, or after PRBC and plasma transfusion, administer:

tranexamic acid (TXA) **15 mg/kg IVP** (max dose 1 g)

AND

calcium gluconate **100 mg/kg IV drip** over 10 minutes (max dose 1 g)

If patient ≥ 20 kg, administer **1 unit** of PRBCs (O+/O-) and **1 unit** of liquid plasma over 3-5 minutes.
If patient is < 20 kg, administer **10 mL/kg** of PRBCs and **10 mL/kg** of liquid plasma,

If blood products are given, notify the receiving hospital or air medical crew as soon as practical!

Assess vital signs every 5 minutes and assess for transfusion reaction.

If hypotension persists after administration of PRBCs and plasma, repeat once.

If hypotension persists after 2 rounds of PRBCs and plasma, administer push-dose epinephrine 1:100,000 **1 mcg/kg IV** (max 10 mcg) every 3-5 minutes to achieve age-appropriate SBP.

If transfusion reaction is suspected, immediately discontinue transfusion and treat with ANAPHYLAXIS protocol.

TRANSFUSION REACTION SIGNS & SYMPTOMS

- **Hives**
- **Wheezing**
- **Hypoxia**
- **Rigors**
- **Fever**
- **Abdominal pain**
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SCOPE OF PRACTICE

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