PEDIATRIC BLOOD AND MARROW TRANSPLANT PROGRAM

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Transfusion of Packed Red Blood Cells

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PBMT-GEN-040
TRANSFUSION OF PACKED RED BLOOD CELLS

1 PURPOSE

1.1 To outline the procedure and nursing responsibilities for infusing Packed Red Blood cells (PRBCs) for the Pediatric Blood and Marrow Transplant (PBMT) patient.

2 INTRODUCTION

2.1 Blood products include random, directed, and autologous red blood cells (RBCs), platelets, granulocytes, fresh frozen plasma, and cryopreciptate.

2.2 Blood products may be administered to pediatric patients through a central line or peripheral line. If a central line is unavailable, then a a 24 gauge or larger peripheral catheter size is preferred.

2.3 Blood products may be infused alone or with normal saline solution. PRBCs are not compatible with dextrose-containing solutions.

2.4 Major indication for PRBCs: Anemia

2.4.1 Action: Restores blood volume and oxygen carrying capacity.

2.4.2 **Special Precautions**:

2.4.2.1 Must be ABO and Rh compatible with patient and stem cell donor.

2.4.2.2 PRBCs must be leukoreduced and irradiated.

3 SCOPE AND RESPONSIBILITIES

3.1 Interdisciplinary:

3.1.1 Requires an order placed by a physician or designee in the electronic medical record

3.1.2 Registered Nurses (RNs) may administer blood products after completing a training course, a blood administration test and demonstration of clinical competency with their preceptor.

3.1.3 RNs caring for pediatric stem cell transplant patients must re-validate their clinical competency to administer PRBCs on an annual basis.

3.1.4 Other licensed personnel (advanced practice providers and physicians) may administer blood products after demonstration and validation of clinical competency.

4 DEFINITIONS/ACRONYMS

4.1	IV	Intravenous
4.2	PBMT	Pediatric Blood and Marrow Transplant Program

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4.3	PPE	Personal Protective Equipment
4.4	PRBCs	Packed Red Blood Cells
4.5	RBCs	Red Blood Cells
4.6	RN	Registered Nurse

5 MATERIALS

5.1 Standard 180 Micron Filter

5.2 Normal Saline Flush

5.3 Alcohol Prep Pad

5.4 Gloves (non-sterile)

5.5 Primed Primary IV Administration Set

5.6 Medex 60 inch extension set for products dispensed in a mini-bag

6 EQUIPMENT

6.1 Volumetric Pump or Syringe Pump

6.2 60 mL syringe for products dispensed in a mini-bag

7 SAFETY

7.1 Wear appropriate Personal Protective Equipment (PPE) for handling of blood products.

7.2 Personnel must wear gloves when spiking any blood products.

8 PROCEDURE

8.1 Patient Assessment

8.1.1 Assess patient for prior transfusion reactions. Notify clinician if the patient has a history of transfusion reactions.

8.1.2 Assess intravenous (IV) site for patency.

8.1.3 Assess and document vital signs pre-administration, 15 minutes into transfusion, and at the completion of transfusion.

8.1.4 Observe the patient continuously for the first 5 minutes of transfusion and then hourly for signs and symptoms of transfusion reaction which may include:

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8.1.4.1 Fever

8.1.4.2 Chills

8.1.4.3 Anaphylaxis

8.1.4.4 Hypotension

8.1.4.5 Tachycardia

8.1.4.6 Dark or red urine

8.1.4.7 Rash, Hives, /or Urticaria

8.2 Obtaining, Verifying, and Administrating Blood Product:

8.2.1 Verify physician or designee order.

8.2.2 Verify current type and screen. Obtain new type and screen if indicated (every 72 hours).

8.2.3 Order desired product in the electronic medical record.

8.2.4 Administer pre-medications if ordered prior to blood product administration.

8.2.5 Release and dispense product in the electronic medical record for the product to be delivered to the unit.

8.2.6 Verify all identification information at bedside by two licensed professionals (one an RN) upon receipt of product.

8.2.7 Complete the blood product verification co-signature in electronic medical record under the "Blood Administration Tab".

8.2.8 Return the product to Transfusion Services, if any discrepancies.

8.2.9 Verify the following identification information:

8.2.9.1 Patient's name and medical record number on armband matches with the Transfusion Report Form and the Compatibility Label on the product bag.

8.2.9.2 Product name, identification numbers/letters, donor ABO blood type and Rh factor on the bag label matches the Transfusion Report Form.

8.2.9.3 Expiration date and time on the product matches the form. Dates on the product tag and the form may be separate dates but neither should have expired.

8.2.9.4 Special orders are met, as applicable.

8.2.10 Transfuse blood products within 4 hours of the time dispensed from the Transfusion Service (on Blood Component Request Form). Return the product to the Transfusion Service immediately, if the order to transfuse is cancelled.

8.2.11 Obtain vital signs per protocol.

8.2.12 Don gloves.

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8.2.13 Spike blood product bag with appropriate blood administration set. Prime the tubing. Be sure to fill the filter.

8.2.14 If PRBCs arrive at unit in mini-bags, spike blood product with appropriate tubing and filter, draw up in 60 mL syringe, prime Medex tubing and infuse via syringe pump.

8.2.15 Clear the infusion line with Normal Saline (3-5 mL). Medications or solutions other than Normal Saline (0.9%) may not be added to blood products or infusion lines.

8.2.16 Clean central line catheter cap with alcohol prep pad.

8.2.17 Connect tubing to patient's infusion access and administer through an infusion pump.

8.2.18 All infusions shall be traced from infusion bag to tubing insertion point of catheter to verify correct fluid is infusion into correct port with each bag or tubing change and with any change in caregiver.

8.2.19 Infuse red blood cells at a rate of 3 mL/kg/hr for first 15 minutes then may increase to 5 mL/kg/hr over time period NOT TO EXCEED 4 HOURS after release of blood from transfusion services. Record volume of blood transfused on Intake and Output Form.

8.2.20 If a reaction occurs, follow action in Section 8.4 Reportable Conditions.

8.2.21 After infusion complete, flush central line with 5 mL 0.9% Saline Reconnect IV tubing or Heparin lock central line as indicated.

8.2.22 Discard tubing and PRBC product bag in hazardous waste container.

8.3 Documentation

8.3.1 Transfusion Report Form may be discarded in a shred box once the transfusion and associated documentation is complete without a reaction noted.

8.4 Reportable Conditions:

Reportable Condition	**Action**
Hypotension Anaphylaxis Chills Temperature Elevation > 1 degree Celsius Dark or red urine Tachycardia Dyspnea Back pain Nausea and/or Vomiting	STOP THE TRANSFUSION, notify the physician, and follow instructions for transfusion reaction on the Transfusion Report Form
Rash Hives (Urticaria)	Slow transfusion. Contact the physician or designee regarding antihistamine administration and follow instructions on the Transfusion Report Form

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9 RELATED DOCUMENTS/FORMS

9.1 Transfusion Report Form (M3902)

10 REFERENCES

10.1 Accreditation Requirements Manual of the American Association of Blood Banks. Current Edition.

10.2 The Duke Hospital Blood Administration Policy.

10.3 The AABB Technical Manual. Current Edition

10.4 The Duke Hospital Process Standards Manual.

11 REVISION HISTORY

Revision No.	Author	Description of Change(s)
06	Sally McCollum	- Title Header on Page 1: Transfusion was spelled incorrectly as transfusion - Major indication for PRBCs: Response updated to Anemia (formerly Symptomatic Anemia and low RBCs) - Acronyms were defined throughout and added to definition section - Document flow was updated to match the other PBMT blood product documents. - Section 7 was updated to include the following: Wear appropriate Personal Protective Equipment (PPE) for handling of blood products. - Nausea and/or Vomiting added to list of reportable conditions.

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Signature Manifest

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PBMT-GEN-040 Transfusion of Packed Red Blood Cells

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