MEDICATION MANUAL

BLOOD, FRESH FROZEN PLASMA, PLATELETS AND CRYOPRECIPITATE PROCEDURE (I.V. PUMP)

I. PURPOSE:

To safely and efficiently maintain or replace specific blood components in the patient who cannot maintain an adequate balance by normal hemo-static means. The cryoprecipitate administration will maintain or replace blood factors in the patient who cannot maintain or replace an adequate balance. The red blood cell and platelet inventories are leukocyte reduced.

II. SKILL LEVEL: Registered Nurse
    Graduate Nurse

III. POLICY:

A. A written order from the physician is required to requisition and to administer blood products to a patient.

B. An informed consent for transfusion must be obtained by the physician or the transfusion will be withheld unless the transfusion is deemed emergent. Informed consent is required for each inpatient admission. An informed consent for transfusion is valid for one year for outpatient transfusions.

C. With the exception of 0.9% Sodium Chloride (USP), drugs or medications shall not be added to blood or components.

D. Physicians, allied healthcare professionals and Nursing personnel requisition blood products from the Blood Bank.

E. All blood products MUST be administered via filter set.
III. POLICY (Con’t):

1. A type and screen-sample is considered valid for 3 days from when the sample was collected. Day 0 is the date the sample was drawn.

   *Exception:* Fresh frozen plasma, cryoprecipitate and platelets may be transfused past the 3 day expiration as no compatibility test is required.

2. A patient sample collected with Typenex is automatically expired 3 days after it has been drawn, at 2300 p.m. on the third day. Please see exception for Pre-admission Testing Patients.

   Example: 01/01/10 01/02/10 01/03/10 01/04/10
   Day 0  Day 1  Day 2  Day 3

F. A physician order is required to administer blood products using a blood warming system. NOTE: Refer to the Medication Manual Policy/Procedure “Warming of Blood Products and IV Solutions Prior to Administration”

G. The Typenex Blood Recipient Identification System shall be utilized for every patient for whom blood products are requisitioned. The typenex code is unique for each sample collected. There are no duplicate codes or armbands. The typenex armband is bar-code readable.

   1. Competent Laboratory or Nursing staff initiates this system when obtaining the blood sample for type and screen or ABO/Rh for FFP, Platelets or Cryoprecipitate transfusions.

      a. Patient identification is established at bedside and samples for collection are labeled at bedside.

      b. The Typenex bracelet will be attached to the patient and will include the patient’s full name, medical record number, date and time drawn and initials of the person drawing the sample.

         *Note:* The patient’s birth date may be used if the medical record number is not available.

      c. Pre-admission testing (PAT) samples may be collected up to 14 days prior to the surgery date and will be valid for cross matching Red Blood Cells up to 2 days after the surgery date, if the patient has not been pregnant or transfused in the preceding 3 months. If the patient does not meet the above criteria, the patient sample must be collected no more than 3 days prior to the surgery date or on admission. PAT patients will be given a Typenex band. The patient must bring the band in on day of admission. Nursing personnel will attach the bracelet to
the patient’s arm after proper patient identification and confirmation of
Typenex Code in the computer system.

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III. POLICY (Con’t):

*Note: If the patient does not present with the Typenex bracelet, all PAT
blood bank work is invalid and the patient must be redrawn with new
orders placed in the computer system.

H. Blood may only be unrefrigerated for 30 minutes prior to administration,
therefore, before obtaining blood products from the Blood Bank:

1. Administer any medications, by M.D. order, before the infusion. If given
   orally, wait 30-60 minutes; if given by I.V., a 10 minute wait time is
   adequate.

2. Take and record the patient’s vital signs, including temperature.

3. If the patient’s temperature is 38 degrees Celsius or above, notify the M.D.
   prior to the transfusion. If a patient is febrile, consideration should be given
to postponement of blood transfusion, since the fever may mask the
development of a febrile reaction to the blood component itself.

4. Ascertain a patent I.V. access.

5. Ascertain that the patient has a current Typenex band on arm.

   a. To manually obtain blood products, the patient’s name, medical record
      number and Typenex Code are required.

   b. If using the pneumatic tube system, complete Patient Identification Form
      (PIF).

I. The patient’s vital signs are to be taken and recorded on the transfusion record
or in the Transfusion Administration Record (TAR) at the following intervals:

1. Prior to infusion.
2. Every 15 minutes x 2 for the first 30 minutes of the infusion.
3. At the conclusion of the infusion.

*Note: More frequent recording of vital signs is determined by the ongoing
nursing assessment of the patient.
J. The staff nurse shall continuously monitor the patient for the first fifteen minutes after the start of the infusion at the bedside.

K. If a suspected transfusion reaction occurs during administration of blood products, the transfusion should be stopped immediately. Notify the physician and the Blood Bank. Initiate an incident report and document transfusion reaction symptoms in TAR. If TAR is not available, complete manual transfusion reaction form. Follow the instructions on the reverse side of the product copy of the unit tag.

*Note: Refer to the Laboratory Manual Policy/Procedure “Adverse Effects of Blood Transfusions”.

*Any 1.0 degree Celsius change in temperature is considered an adverse effect.

L. Prior to administration, qualified personnel at patient’s bedside to perform the identification verification process are two Registered Nurses or a Registered Nurse and a Licensed Practical Nurse, or a Registered Nurse and a Graduate Nurse, all of whom have been deemed competent on Blood Administration. Physicians may also participate in the identification verification process (such as in the Operating Room).

M. When using the two nurse bedside verification process, one of the two nurses conducting the identification verification will be a qualified transfusionist (RN), who will administer the blood or blood component to the patient.

N. A new secondary blood administration set (170-200 Micron) shall be used for every two units of blood.

O. Rate of infusion depends upon the clinical condition of the patient and the type of product being transfused. Most patients who are not in congestive heart failure or in danger of fluid overload tolerate the infusion of packed cells in 1 ½ to 2 hours. Rate of infusion for fresh frozen plasma, platelets or cryoprecipitate may be approximately 10 ml/min. Transfusions for all blood products must be completed within 4 hours.
The infusion should start slowly at approximately 2 mL per minute for the first 15 minutes while the transfusionist remains near the patient. If there is no sign of an adverse effect after the first 15 minutes, the flow rate can be increased to the designated infusion rate.

Suggested Infusion Rate of Components in Nonemergency Settings*

<table>
<thead>
<tr>
<th>Component</th>
<th>Suggested Infusion Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Blood Cells</td>
<td>150-300 mL/hr</td>
</tr>
<tr>
<td>Fresh Frozen Plasma</td>
<td>200-300 mL/hr</td>
</tr>
<tr>
<td>Platelets</td>
<td>200-300 mL/hr</td>
</tr>
<tr>
<td>Cryoprecipitated AHF</td>
<td>As rapidly as tolerated</td>
</tr>
</tbody>
</table>

*Transfusion must be completed in < 4 hours  hr = hour; mL = milliliter

Q. There should be a platelet count before and within 24 hours after a platelet transfusion.

R. A single donor platelet (plateletapheresis) will replace all random platelet orders (4, 6, 8 or 10 units).

S. **Do Not Use** a blood warmer for platelet administration.

T. The transfusion must be initiated prior to the outdate of the product.

U. Documentation of the amount of fluid intake will vary based upon which type of label is on the bag for packed cells. Volume for all other products is stated on the label of the product bag and is printed on the unit tag (transfusion record).

V. Packed cells may be labeled in a variety of the ways:

1. Label containing “CPDA”. (Leukocyte-reduced)
   a. Contains volume of 300ml.
   b. No Sodium Chloride has been added.
2. Label containing “Leukocytes Reduced” Adenine/Saline
   a. Contains volume of 350ml.
   b. 0.9% Sodium Chloride (USP) has been added.

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W. Refer to the Laboratory Manual for additional information.

X Outpatients are to be given written instructions regarding possible delayed transfusion reactions. The patient handout “Post-Transfusion Instructions for the Patient” is to be used for this purpose.

IV. **EQUIPMENT:**

   A. Blood Product – From Blood Bank
   B. 0.9% Sodium Chloride, (USP) 250 ml
   C. Primary Plumset
   D. I.V. Pump

V. **PROCEDURE (I.V. PUMP) & *POINTS OF EMPHASIS:**

   Packed Red Cells
   Fresh Frozen Plasma
   Platelets
   Cryoprecipitate

   A. Obtain vital signs prior to obtaining blood from the Blood Bank. Ascertain that patient has a current Typenex Band on wrist.
   *Notify the M.D. if the patients temperature is **38 degrees Celsius** or above.

   B. Perform venipuncture.
   *Follow the policy/procedure for Insertion of an Intravenous Cannula. An18 gauge needle is preferred. A smaller gauge needle may be used in scheduled blood administration depending on venous status, utilizing #22 as the smallest gauge.

   C. The Nursing Personnel obtains the blood product from the Blood Bank Complete Patient Identification Form (PIF) if using pneumatic tube system. Present written documentation of patient’s full name, medical record number, Typenex Code. Documentation of informed consent must also be presented at this time.

   D. On the nursing unit, at the patient’s bedside, complete the Identification verification process with two qualified nurses, checking against the unit tag, the label of the blood bag, and the identification bands. Document the identification verification on the unit
tag with the two signatures or follow protocol when using TAR. The unit tag is a two-part form (CHART COPY and PRODUCT COPY).

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E. Prepare 250 ml 0.9% Sodium Chloride (USP) with a primary plumset and prime according to the policy on Pg. 4b of the Medication Manual and connect to the extension set.

F. Immediately before transfusion, mix the bag thoroughly by gentle inversion. Spike the blood unit, with the product copy of the unit tag attached, with the secondary blood tubing. Attach the secondary blood tubing to the primary plumset. Backprime with 0.9% Sodium Chloride (USP) until inline filter is covered.

G. Hang the blood bag on an I.V. pump and set the secondary infusion rate.
   *If required, a second unit may now be added after the proper identification steps, repeating steps (F-G). If not using TAR, document on the Blood Bank unit tag (chart copy --- THE PRODUCT COPY MUST REMAIN ATTACHED TO THE UNIT)) the date and time completed, the amount infused, the patient’s vital signs and note if a suspected reaction occurred.

H. When the blood product bag is empty, stop the secondary infusion and start the primary infusion of 0.9% Sodium Chloride (USP) until the tubing is cleared.
   *Dispose of the empty blood bag. (Use universal precautions). Ascertain that all required information is completed on the unit tag. Place the completed chart copy on the patient’s medical record if TAR was not used. There is NO Blood Bank copy to be returned to the Blood Bank if TAR is not used.

I. If evidence of a suspected transfusion reaction occurs, return the blood bag(s) and the Blood Bank copy to the Blood Bank. Follow the instructions on the reverse side of the product copy of the unit tag. Complete the patient identification and document on the product copy. Do not send blood product to blood bank using Pneumatic Tube System.
   *Follow procedure for transfusion reaction symptoms in TAR.
VI.  **PROCEDURE (Via Gravity):** *Only to be used when I.V. pump is not available, or in emergency situations.

**EQUIPMENT:**

Blood Product – From Blood Bank
0.9% Sodium Chloride, (USP) 250 ml
Blood Administration Set – From CSR

Complete steps A through D in Procedure (IV Pump) then follow steps outlined below:

VII. **PROCEDURE (Via Gravity) & *POINTS OF EMPHASIS:***

A. Prepare 250 ml 0.9% Sodium Chloride, (USP) with the blood administration set. Connect the Y tubing to the extension set.

*Invert the drip chamber, covering the filter with 0.9% Sodium Chloride (USP). Then lower the drip chamber to an upright position and prime the distal tube with 0.9% Sodium chloride (USP).*

B. Start the 0.9% Sodium Chloride (USP) and infuse slowly.

*0.9% Sodium Chloride (USP) may be added to Packed Red cells if needed to aid in infusing. It is not usually necessary to add 0.9% sodium Chloride (USP) to fresh frozen plasma or platelets. If TAR is not utilized, document on the chart and blood Bank copies of the unit tag, the date and time the infusion began, the name of nurses, and the patient’s vital signs.*

C. Immediately before transfusion, mix the bag thoroughly by gentle inversion. Add the blood unit to the Y tubing with the product copy of unit tag attached.

*Document all vital signs on the Blood Bank unit tag chart copy/blood Bank copy if TAR is not utilized.*

D. Hang the blood bag on a I.V. stand, and regulate infusion.

E. When the unit of blood is empty, clamp off the tubing and open the saline tubing allowing the blood in the filter chamber and the tubing to be infused.

*If required, a second unit may now be added after the proper identification steps, repeating steps G-I. If TAR is not utilized, document on the chart copy of the Blood
Bank unit tag, the time and date completed, the amount infused, the patient’s vital signs and note if a suspected reaction has occurred.

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F. If there is no evidence of a suspected transfusion reaction:
   *Dispose of empty blood bag. (Use universal precautions). Ascertain that all required information is completed on the unit tag. Place the chart copy on the patient’s medical record and the completed Blood Bank copy is returned to the Blood Bank.

G. If evidence of a suspected transfusion reaction occurs, return the blood bag(s) and the Blood Bank copy to the Blood Bank. Follow the instructions on the reverse side of the product copy of the unit tag. Complete the patient identification verification and document on the reverse side of the product copy.
   *If a suspected transfusion reaction occurs, do not remove the administration tubing from the bag. Place the bag and tubing in a plastic zip-lox bag. Follow the instructions for a transfusion reaction investigation. Do not send through pneumatic tube system.

VIII. DOCUMENTATION:

A. eMAR
B. Transfusion Administration Record (TAR)
C. Blood Bank Unit Tag (Chart Copy)
   1. Two (2) nurses’ signatures to verify the identification check procedure.
   2. Time and date the unit began.
   3. Time and date the unit completed.
   4. Amount infused.
   5. Suspected Reaction – yes or no