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1.0 Policy Statement

1.1 Only a physician or licensed allied health practitioner[1] as specified by the facility, within their supervised scope of practice, may order blood or blood components. The physician or licensed allied health practitioner must weigh the potential benefits of transfusion with the known risks taking into consideration modern evidence-based transfusion guidelines and their own clinical judgment.

1.2 Transfusions of blood products may be used to restore the oxygen-carrying capacity of blood and to replenish clotting factors and/or platelets.

1.3 Only a physician, CRNA, RN, or IV Certified LVN may start a blood transfusion.

1.4 Only personnel who have been trained in the blood product pick-up procedure may obtain blood from the Blood Bank.

2.0 Purpose

2.1 To ensure consistent and effective practice for the management of patients receiving blood products, with the expected outcome that the patient will be safely transfused in a timely manner and that any adverse reactions will be minimized.

3.0 Scope/Coverage

This policy applies to all employees who are employed by the following entities (collectively referred to as "Kaiser Permanente" choose applicable):

3.1 Kaiser Foundation Hospitals and Health Plan, Inc. (together, KFH/HP);

3.2 The Permanente Medical Group (TPMG) OR specified groups within TPMG

3.3 Applies to all licensed staff administering blood and blood products in the inpatient and ambulatory care settings.

3.4 Applies to all patients who receive blood and blood products.

3.5 Neonates: Refer to your local Blood/Blood Products Administration Policy for Neonates.

4.0 Definitions

4.1 Blood: For the purposes of this policy, the term "blood" will represent any of the following: packed red blood cells, platelets, fresh frozen plasma, cryoprecipitate, and whole blood. (Appendix A: Blood Product Information.)

4.2 Prepare Order: A physician order that communicates the need to prepare blood product(s) for transfusion, applicable to the Blood Bank. The order interfaces

[1] For purposes of this policy the AHP refers only to Nurse Practitioner, Physician Assistant, and Certified Nurse Midwife

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with the blood bank system, eliminating paper workflow or manual input. When the blood is prepared and ready, the prepare order will no longer be visible.

4.3 Transfuse Order: A physician order for nursing to transfuse the prepared blood product(s).

5.0 Provisions/Procedures

5.1 Refusal of Blood Products

5.1.1 The patient or the patient's legal surrogate may refuse transfusions of some or all blood products due to religion, conscience, or other reasons. In any of these situations, the physician or licensed allied health practitioner is to document the patient/legal surrogate's refusal (Medical Directive Release form per regional policy).

5.1.2 If patient has the preference to not receive blood products documented in the electronic medical record, a Best Practice Alert will show in the Transfusion Order set.

5.2 Blood Communication Order

5.2.1 Informed Consent must be obtained prior to transfusion.

5.2.1.1 The physician or licensed allied health practitioner is responsible for discussing with the patient the risks and benefits of transfusion and alternatives to transfusion.

5.2.1.2 Informed consent is required for PRBCs (autologous blood, directed donor homologous blood, and volunteer homologous blood), platelets, FFP, cryoprecipitate, and whole blood.

5.2.1.3 Acceptable informed consent documentation includes any of the following:

5.2.1.3.1 Electronic medical record Blood Communication order. Exceptions due to emergency/life threatening situation may be documented here.

5.2.1.3.2 Medical record physician or licensed allied health practitioner note for outpatients or during downtime.

5.2.1.4 If a series of transfusions is anticipated or needed, it is only necessary to complete one Informed Consent for each hospitalization or course of treatment.

5.2.2 Paul Gann Blood Safety Act (Health and Safety Code, Section 1645)

5.2.2.1 Imposes specific obligations upon physician or licensed allied health practitioner to provide information and

5.2.2.1.1 The physician or licensed allied health practitioner documents in the medical record that the standardized written summary ("A Patient's Guide to Blood Transfusion") was given to the patient or that it is not applicable, i.e. due to insufficient time to pre-donate. (Appendix B: A Patient's Guide to Blood Transfusion.

5.3 **Blood Transfusion/Compatibility Testing Orders, Requisitions, and Acceptable Specimens**

5.3.1 Compatibility Order Definitions:

5.3.1.1 Hold Blood Bank: No initial testing is done. The specimen is held in laboratory in the event compatibility testing is subsequently required.

5.3.1.2 Type and Screen Order: Includes ABO/Rh determination and antibody screen for patients who may need a blood transfusion.

5.3.1.2.1 Multiple occurrences, per comment order may be used to facilitate obtaining a sample to support conditional transfusion workflows when there is no longer a valid sample in the Blood Bank.

5.3.1.3 Type and Cross-match Order: Includes ABO/Rh determination, antibody screen, and Cross-match testing to assign specific units which are compatible with the patient. An order to Type and Cross-match is appropriate for patients who are likely to need a transfusion and to need blood quickly.

5.3.2 Inpatient transfusions are ordered in the medical record whenever possible. Orders are released by a nurse or physician.

5.3.2.1 The Blood Product Administration Module (BPAM) Report contains relevant information needed to manage transfusions and can be accessed from the PER home page, by clicking on "Blood Product" or the Report link in the Blood Administration Flowsheet.

5.3.2.2 The Blood Product Administration Module (BPAM) Report shows the Blood Ready banner, current Type & Screen results, Now and Conditional Prepare orders, Now and

Conditional Transfuse Orders, Transfusion related fluid and pre-medication orders, Blood Communication order and Blood Administration history.

5.3.2.2.1 Access the BPAM Report to manage transfusion orders

5.3.2.2.2 When ordered blood is available, click "Release" to print the pick-up slip and add unique documentation group to the flowsheet

5.3.2.2.3 For Conditional Orders: when the condition is met, release the conditional Prepare order to the Blood Bank using the "Send" link. When ordered blood is available, click "Release" to print the pick-up slip and unique documentation group to the flowsheet

5.3.2.3 The Blood Product Administration Flowsheet has a link to the Blood Product Administration Module Report, which highlights in blue if there are active Transfuse orders.

5.3.2.4 The ED Narrator links to the Blood Product Administration Module Report and documentation.

5.3.2.5 Transfuse Blood Products Order: Indicates amount or volume to be transfused, reason for transfusion, special requirements and Infusion duration.

5.3.2.6 Conditional Transfuse Orders: To be used for transfusion once a specified condition is met. Conditional orders do not automatically communicate to the blood bank when the physician or licensed allied health practitioner places the order. When the condition is met, the nurse must manually release the conditional prepare order for communication to the Blood Bank.

5.3.3 During system Downtime, the paper form, "Laboratory Requisition Transfusion Service" will be used to order blood from the Blood Bank . (Appendix C: Laboratory Requisition Transfusion Service.)

5.3.3.1 Transfusion documentation during Downtime will be completed on the paper Transfusion Record that accompanies the unit.

5.3.3.2 The completed form will be placed in the patient's MinRec.

5.3.3.3 To document administered blood volumes, after the downtime add the Manual Blood Product Entry Group to the

Blood Administration flowsheet using the "Add Row" button and document relevant information

5.3.4 Specimen Collection:

5.3.4.1 Check for active Type & Screen results in the BPAM report or contact the Blood Bank to determine if a specimen is required.

5.3.4.2 Collection by the nurse or Laboratory Assistant:

5.3.4.2.1 For nurse collection: Specimen and printed order requisition are sent to the Laboratory.

5.3.4.2.2 For Laboratory Assistant collection: Unit assistant or nurse places the printed order requisition with the RILIS label on the laboratory clipboard [or per facility protocol].

5.3.4.2.3 If a specimen draw is needed before the next Laboratory round, the Laboratory is contacted to arrange for a specimen draw [or per facility protocol].

5.3.4.3 Phlebotomist (MD, RN, or Laboratory Assistant) identifies the patient following the facility's patient identification procedure.

5.3.4.4 The Blood Bank specimen tube label must be completed at the patient's bedside at the time of collection with the following information:

5.3.4.4.1 First and last name of patient

5.3.4.4.2 Medical record number

5.3.4.4.3 Date/time specimen is drawn

5.3.4.4.4 Identity of the phlebotomist (unique identifier as specified by facility)

5.3.4.5 The phlebotomist signs the attestation of positive patient identification on the printed order or paper requisition form and indicates date and time of specimen collection. The specimen tube and signed requisition are expected to be delivered to the laboratory at the same time.

5.3.4.6 Note: The Laboratory will NOT accept:

5.3.4.6.1 Unlabeled specimen(s) or incompletely labeled specimen(s)

5.3.4.6.2 Specimens in which the tube label and requisition do not match

5.3.4.6.3 Requisitions that are not signed, dated, and timed

5.3.4.7 Note: Blood Bank specimens are acceptable for three (3) days.

5.3.4.7.1 After three (3) days, a new specimen must be drawn from the recipient. No blood can be released without this new specimen.

5.3.4.7.2 If the current specimen was drawn pre-operatively as an outpatient, contact the Blood Bank for acceptability.

5.3.4.8 Note: A double check specimen (a second sample that is separately drawn at a different time from the initial sample) is required to confirm the patient's ABO/Rh if no previous ABO/Rh is on record.

5.4 Special Transfusion Circumstances

5.4.1 Emergency Release: In life threatening situations, the physician or licensed allied health practitioner may authorize release of uncross-matched blood.

5.4.1.1 Notify the Blood Bank with a direct telephone call that uncross-matched blood is needed. Provide the patient name and medical record number, and name of ordering physician.

5.4.1.2 The "Transfusion Service Emergency Release of Donor Blood" form (Appendix D) with the patient's name, medical record number, and ordering physician's or licensed allied health practitioner's signature must be completed. Blood can be released as a verbal order but the form must be signed by the ordering physician as soon as possible.

5.4.1.3 The Blood Bank will record the unit number, type, and expiration date on the "Transfusion Service Emergency Release of Donor Blood" form.

5.4.1.4 The person picking up the emergency release must bring the "Transfusion Service Emergency Release of Donor Blood" form or a paper pick-up slip or identifier with the patient's name and medical record number.

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5.4.1.5 A specimen for STAT compatibility testing shall accompany the request for emergency release of blood or be obtained as soon as possible, to determine compatibility.

5.4.1.6 Place relevant paper documentation in the MinRec.

5.4.1.7 To document administered blood volumes, add the Manual Blood Product Entry Group to the Blood Administration flowsheet using the "Add Row" button and document relevant information

5.4.2 Massive Transfusion Protocol (MTP): In cases of severe, ongoing, life-threatening hemorrhage, the facility's MTP may be initiated by the treating physician. Refer to the facility's MTP. Vital sign requirements may not be achieved during MTP due to patient's condition.

5.4.3 Neonates: Refer to your local Blood/Blood Products Administration Policy for Neonates

5.5 **Pre-Transfusion**

5.5.1 Patient/family education for patients receiving blood and blood products should include the rationale for transfusion and the need to notify the nurse for symptoms of possible transfusion reaction.

5.5.2 Check for pre-medication and administer medication(s) to patient as ordered.

5.5.3 Up to thirty (30) minutes prior to transfusion, take baseline (pre-transfusion vital signs include temperature, pulse, respirations, and blood pressure).

5.5.4 Obtain the administration set and filter.

5.5.4.1 All blood components must be filtered using in-line or add-on filters that are appropriate for the component or specifically requested through a physician's order. A standard blood filter (170 – 260 micron screen) may be used for all blood products.

5.5.4.2 Almost all blood products are currently leukocyte-reduced by the blood supplier. If a unit is not pre-filtered and leuko-reduced blood is ordered, a leukocyte reduction filter will be required.

5.5.4.3 The blood administration set will be changed after two (2) transfusions, after four (4) hours, or if the filter appears clogged.

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5.5.5 Establish patent primary intravenous line with a catheter gauge 20 to 24 based on vein size, 14 to 18 if rapid transfusion is required. For pediatrics, a 22 or 24 gauge catheter is recommended.

Note: NO intravenous solution other than isotonic saline (0.9% NaCl) should be added to or administered simultaneously with blood.

5.5.5.1 Attach blood tubing into the primary Normal Saline line as close to the IV site as possible.

5.5.5.2 Prime blood tubing with Normal Saline. The drip chamber should always be primed with Normal Saline to above the filter before starting the transfusion. Prime the blood down to the tubing to just before entering the patient and before starting the timing of the transfusion.

5.5.5.3 Flush blood tubing with Normal Saline solution prior to administering the blood, between units of blood, and at the end of a transfusion to prevent precipitation and clots

5.5.5.4 Medication may be given through the injection port closest to the patient while blood is infusing, provided that compatibility exists. For questions of compatibility, consult the pharmacist. To inject a medication, the blood must be stopped and the line must be cleared with Normal Saline. Inject the medication and follow with a Normal Saline flush, then resume the transfusion.

5.5.5.5 For routine transfusions, only one type of blood product is to be administered in one line. More than one type of blood component may be given if the patient has multiple peripheral or IV lines and has been ordered by physician that they can be given at the same time

5.5.6 Blood products may be safely administered via an electronic infusion device. Mechanical pumps with the manufacturers' blood tubing may be used to transfuse the blood. Directions supplied with the tubing are to be followed.

5.5.7 Set up blood warmer, if ordered:

5.5.7.1 Blood warming requires a physician or licensed allied health practitioner order and the use of a mechanically approved warming device that shall be employed in accordance with the manufacturer's instructions.

5.5.7.2 Annual and monthly maintenance of blood warmers, if applicable, is performed by Clinical Technology.

5.5.7.3 Nursing is responsible for visually checking the condition of the unit and testing the alarm, if applicable, prior to use.

5.5.7.4 Prior to use, Nursing will check that the water level is above the minimum on the tank and add distilled water to the tank through the fill port if required.

5.6 **Obtaining Blood From the Blood Bank**

5.6.1 Prior to obtaining blood from the Blood Bank, assure that the patient and equipment are ready for transfusion and any pre-medications have been administered (See Section 5.6: Pre-Transfusion).

5.6.1.1 Verify the physician's order to transfuse blood or blood products.

5.6.1.2 Verify informed consent has been obtained.

5.6.2 The person picking up the blood must bring the acceptable paper pick-up slip.

5.6.2.1 The pick-up slip will print when the RN releases a unit of blood from the Transfuse order in the BPAM report. This is the primary form that Blood Bank will accept. Alternative paper downtime forms for blood pick-up are accepted per facility policy. The medical record pick-up slip must match the specific order (Now or Conditional, blood product type, e.g. PRBC) in order to contain the correct information. The nurse enters the number of products to be picked up now, signs (with NUID) and dates the Nursing Attestation at the bottom of the form.

5.6.2.1.1 The nurse attests that the product requested matches the physician's order (Now or Conditional), including any special requirements, and that the requirements for conditional orders have been met.

5.6.2.1.2 In multi-unit transfusions, the nurse is responsible to be aware of any previous transfusions associated with this order or part of this order.

5.6.2.2 A paper pick-up slip can be used during a downtime, from the operating room, or from the outpatient infusion center. (Appendix E: Downtime Blood Pick-up Slip.) The "Transfusion Service Emergency Release of Donor Blood" form or a paper pick-up slip or identifier with the patient's

name and medical record number are acceptable pick-up slips for emergency release blood.

5.6.3 There is a two-person read back process between the Laboratory personnel and the individual picking up the blood comparing the blood pick-up slip, Cross-match report, and blood unit labels (the blood supplier face label on one side of the blood product bag and the patient Cross-match label attached to the other side of the blood product bag) for:

5.6.3.1 Patient name

5.6.3.2 Medical record number

5.6.3.3 ABO/Rh of patient

5.6.3.4 ABO of unit and Rh if applicable

5.6.3.5 Unit number

5.6.3.6 Expiration date and if applicable time

5.6.3.7 Special requirements i.e. irradiated, CMV negative, etc.

5.6.3.8 Compatibility result, if applicable

5.6.3.9 All information during this process must match; the unit ABO/Rh may be different from the patient's ABO/Rh but must be compatible with the patient's ABO/Rh (Appendix F). Any discrepancies must be investigated, documented, and resolved before proceeding to dispense.

5.6.4 The unit is visually inspected for integrity and defects.

5.6.5 The Clinical Laboratory Scientist (CLS) initials the Cross-match report on "issued by". The pick-up person signs and records the date and time on "accepted by" line.

5.6.6 The blood is delivered directly to the person who will transfuse the blood product.

5.6.7 Transfusion should be started upon receipt of the blood product from the Blood Bank.

5.6.7.1 The maximum time for a unit of blood or blood component to be transfused is four (4) hours from the time it was issued from the Blood Bank.

5.6.7.2 Blood products must be returned to the Blood Bank immediately if transfusion cannot be started within 30 minutes or as soon as a decision is made not to transfuse the blood product. The Blood Bank will determine if the unit

can be issued to another patient. Return all unused blood products to the Blood Bank, even if past 30 minutes.

5.6.8 Under normal circumstances, only one (1) unit of blood shall be released at a time.

5.6.8.1 Multiple units of Fresh Frozen Plasma (FFP) can be released if rapid transfusion is anticipated.

5.6.8.2 In emergencies, or if ordered to be given with Dialysis, more than one (1) unit for a single patient can be released.

5.6.9 Blood is transported for only one (1) patient at a time. Under no circumstances can one person pick up blood for two different patients at the same time (or per facility policy if there is an ambulatory site).

5.6.10 Blood is refrigerated in the Laboratory until immediately prior to use and except in specific situations, is never refrigerated on the patient care units.

5.6.11 In some facilities, a refrigerated ice chest is available on request for transport of whole blood, packed red blood cells, and FFP to the Operating Room or outpatient transfusion setting (facility-specific).

5.6.11.1 Ice chest utilization, including dispensing/tracking/monitoring, storage time, and capacity must follow facility protocol.

5.6.11.2 Monitor overtempt indicators if part of the ice chest protocol.

5.6.11.3 Only one (1) patient's units are in an ice chest at a time.

5.7 **Checking Blood Products at the Bedside**

5.7.1 Inspect blood and return to Blood Bank if there is any evidence of hemolysis recognized by color change of plasma (from yellowish to reddish brown) or evidence of bacterial contamination i.e.) gas bubbles or presence of clots.

5.7.2 The blood product for transfusion must be positively identified by either one registered nurse/clinician and the electronic verification system in the medical record, two registered nurses, one clinician and one registered or two clinicians.

5.7.2.1.1 With Electronic Verification System:

5.7.2.1.1.1 Scanning the patient wristband and blood component identifies:

5.7.2.1.1.1.1 Patients full name and medical record number

5.7.2.1.1.1.2 Blood product

5.7.2.1.1.1.3 Type, Rh factor

5.7.2.1.1.1.4 Donor number and expiration date

5.7.2.1.2 Without electronic verification:

5.7.2.1.2.1 Both verifiers must identify:

5.7.2.1.2.1.1 Patients full name (read and spell) tag with armband

5.7.2.1.2.1.2 Medical record number (read) tag with armband

5.7.2.1.2.1.3 Blood product (tag with bag)

5.7.2.1.2.1.4 Type and Rh factor (tag with bag)

5.7.2.1.2.1.5 Donor number and expiration date (tag with bag)

5.7.3 The patient will be positively identified with two (2) patient identifiers, at a minimum first and last name and medical record number:

5.7.3.1.1 Ask the patient to state his/her name.

5.7.3.1.2 Confirm the patient's identification on the patient's identification bracelet, the patient Cross-match label attached to the blood component, and the Cross-match report.

5.7.3.1.2.1 Blood unit number

5.7.3.1.2.2 ABO/Rh of unit and patient

5.7.3.1.2.3 Expiration date of the unit

5.7.3.1.2.4 Special requirements i.e.) irradiated, CMV negative, etc.

5.7.3.1.2.5 Compatibility result, if applicable

5.7.3.1.3 The unit ABO/Rh may be different from the patient's ABO/Rh but must be compatible with the patient's ABO/Rh (Appendix F). If there is any discrepancy, call the blood bank or return the blood product to the Blood Bank.

5.7.3.2 Launch the Blood Product Administration Module activity from the Blood Product Administration Flowsheet by clicking the syringe in the Action row of the Transfusion group.

5.7.3.2.1 Scan the Patient; then Scan all four quadrants of the blood product label. An error message will appear if the scanned information does not match what was sent from the Blood Bank.

5.7.3.2.2 If the barcode is not scanned, the module will add a field to document the reason for not scanning. Manually entered information must match Blood Bank information to proceed. Notify the blood bank if scanning is not possible.

5.7.3.3 The unit ABO/Rh may be different from the patient's ABO/Rh but must be compatible with the patient's ABO/Rh (Appendix F). If there is any discrepancy, call the blood bank or return the blood product to the Blood Bank.

5.7.3.4 If there is any discrepancy, call the blood bank or return the blood product to the Blood Bank.

5.8 Transfusion

5.8.1 Start the transfusion.

5.8.2 For the first fifteen (15) minutes, infuse the blood slowly at 1mL/min or at 60 mL/hr on the IV pump and closely monitor the patient for any reactions.

5.8.2.1 Exception: Life-threatening emergencies may necessitate rapid infusion of blood products.

5.8.2.2 Do not transport a patient during the first fifteen (15) minutes of a non-emergency transfusion. Patients who are subsequently transported with blood products infusing must be accompanied by a registered nurse and/or physician.

5.8.3 Obtain vital signs (temperature, pulse, respirations, and blood pressure) within the first fifteen (15) minutes of start of transfusion. Assess for any reactions or complications (See Section 5.11: Transfusion Reaction).

5.8.4 Record vital signs and the assessment for any reactions in the medical record.

5.8.5 After the first fifteen (15) minutes, if no reaction is noted, increase blood rate to infuse as per physician's orders.

5.8.6 Continue to assess the patient during the transfusion, including visual observation, with further assessment including vital signs, as needed. Assess for any reactions or complications following the drop down menu of options as needed. (See Section 5.11: Transfusion Reaction).

5.8.7 Document any relevant actions taken in the Action row of the medical record.

5.8.7.1

5.8.7.1.1 Complete the Transfusion Reaction and Blood Warmer Use rows as applicable.

5.9 **Post Transfusion**

5.9.1 When all blood/blood products have infused, clear the line with 0.9% NaCl solution and decrease rate to TKO or follow with fluids as ordered. Primary NaCl must be on the IV pump line if used as TKO or between multiple units.

5.9.2 Enter "Stopped" in the Action row of the transfusion group. Verify the accuracy of the volume in the volume calculator, make any necessary adjustments and click "Use Volume" to document the product volume.

5.9.3 Do not use the "Volume and Complete" button. Document saline volume total, transfusion reaction and blood warmer rows as applicable.

5.9.4 Document status in the Post Transfusion Status Row.

5.9.5 Confirm all required documentation is completed then right-click on the transfusion group header and "Complete" the group. This documentation will complete the order and the group.

5.9.5.1 Any discontinued transfusion must be documented in the medical record if the patient has received any amount of the product. Enter Status as "Stopped" and document the reason in the comment section. Use Status Restarted if applicable.

5.9.6 Obtain one (1) additional set of vital signs (temperature, pulse, respirations, and blood pressure) within sixty (60) minutes of transfusion completion, and document.

5.9.7 Assess the patient post transfusion for any reactions or complications. Record the assessment in the medical record following the drop down menu of options as needed. (See Section 5.11: Transfusion Reaction).

5.9.8 If the patient is being discharged after the transfusion, provide written instructions regarding possible transfusion reactions. (Appendix G "Instructions to Patients Receiving Blood Transfusions".)

5.9.9 After completion of transfusion, dispose of bag and tubing in bio-hazardous waste receptacle (red bag) as per Regulated Medical Waste policy.

5.10 Transfusion Reaction: Responsibility for Recognizing an Adverse Reaction to Blood or Blood Products Rests with the Person Administering the Blood

5.10.1 Observe for signs of transfusion reaction including but not limited to :

5.10.1.1 Nausea

5.10.1.2 Vomiting

5.10.1.3 Headache

5.10.1.4 Joint pain

5.10.1.5 Chills

5.10.1.6 Shaking Chills

5.10.1.7 Fever: Temperature greater than or equal to 1 degree Centigrade (1.8 degrees Fahrenheit) above baseline pre-transfusion temperature

5.10.1.8 Shortness of breath

5.10.1.9 Chest pain

5.10.1.10 Shock

5.10.1.11 Tachycardia

5.10.1.12 Abdominal cramps

5.10.1.13 Lower back pain

5.10.1.14 Bleeding (specify site)

5.10.1.15 Other (specify)

5.10.2 If a transfusion reaction is suspected:

5.10.2.1 Stop the blood transfusion immediately and maintain IV patency.

5.10.2.2 Notify the physician and the Blood Bank.

5.10.2.3 Remain with the patient and monitor vital signs.

5.10.2.4 If the physician or licensed allied health practitioner determines that the symptoms are not related to a reaction, the blood may be restarted and infused within the 4-hour maximum limit.

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5.10.3 If a transfusion reaction is determined, complete the entire blue area of the "Transfusion Reaction Investigation Form" (Appendix H). Include the following:

5.10.3.1 Symptoms

5.10.3.2 Vital signs

5.10.3.3 Volume infused

5.10.3.4 Start and stop times

5.10.3.5 Complete patient identification and blood product clerical check

5.10.4 Obtain blood and urine samples and label as "Post-Transfusion"

5.10.5 Return the unit of blood with the administration set to the Blood Bank along with the blood and urine samples and the "Transfusion Reaction Investigation" form. Additional units of blood may NOT be released until the transfusion reaction has been investigated and permission received from the on-call Pathologist.

5.10.6 Transfusion Related Acute Lung Injury (TRALI) should be considered whenever a transfusion recipient experiences acute respiratory insufficiency and/or x-ray findings are consistent with pulmonary edema without evidence of cardiac failure within six (6) hours of transfusion.

5.10.7 Transfusion Associated Circulatory Overload (TACO) may occur with the transfusion of large volumes or rapid transfusion.

5.10.8 It is the responsibility of the physician or licensed allied health practitioner to report possible transfusion transmitted disease to the Transfusion Service. The Transfusion Service will notify the blood supplier.

5.11 **Document the Transfusion Phases in the Medical Record**

5.11.1 Document any signs or symptoms of transfusion reaction at the time they occur, including symptoms and interventions.

5.11.2 Inpatient: Document blood product information, pre-transfusion check, transfusion start and stop times, vital signs, volume transfused and any transfusion reaction.

5.11.3 Intraoperative Anesthesia Record may be utilized for documentation of blood administered during surgery.

5.11.4 Outpatient: Document in Blood Product Administration section of the medical record.

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Approval Date: 09/13/2019	**Last Revision Date: 05/22/2019**
Approving Committee/Title of person responsible: Regional Blood Administration Workgroup (TPMG, Regional Lab, MGSS, and PCS)	

5.11.5 Cross-match reports and the "Transfusion Reaction Investigation" form, if any, shall be scanned into the medical record.

6.0 References/Appendices

6.1 Technical Manual of the American Association of Blood Banks, (2011), (17th Ed.)

6.2 General Principles of Blood Transfusion, American Medical Association, 1985.

6.3 Medical Directive Release Policy

6.4 Health and Safety Code, Section 1645

Appendices: Use most current version.

A Blood Product Information

B Patient's Guide to Blood Transfusion

C Laboratory Requisition Transfusion Service

D Transfusion Service Emergency Release of Donor Blood

E Downtime Blood Pick-up Slip (facility specific)

F ABO/Rh Compatibility Tables

G Instructions to Patients Receiving Blood Transfusion(s)

H Transfusion Reaction Investigation Form (09632-000)

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Appendix A: Blood Product Information

Blood Product	Purpose	Volume	Rate of Infusion / Duration	Comment
Packed red blood cells (PRBC)	Replaces red cell mass to restore oxygen-carrying capacity. One unit is expected to raise hemoglobin by 1 g/dL and hematocrit by 3% in a non-hemorrhaging adult.	250 – 300 ml.	Infuse over 2 – 3 hours (3 – 4 ml/kg/hr.) or prescribed rate. To be completed within 4 hours.	May be allogeneic (volunteer or designated donor) or autologous. Nearly all are leuko-reduced.
Autologous PRBC	Must be donated in advance.			Requires special donation. Contact Blood Bank for additional instructions. Held in Blood Bank until expiration date
Designated donor PRBC				Requires special donation. Held in Blood Bank until expiration date
Platelet pheresis	Used to prevent or control bleeding due to thrombocytopenia or platelet dysfunction.	250 – 500 ml.	Wide open/max push. Rate of infusion dependent on volume tolerance.	Nearly all are leuko-reduced.
Fresh Frozen Plasma (FFP)	Replaces plasma without RBCs or platelets; used to prevent or control bleeding due to coagulopathy or loss of coagulation factors.	200 – 400 ml [as needed per facility]	Infuse 5 – 20 ml/kg/hr. or prescribed rate. Best administered as rapidly as possible, immediately before it is needed; more slowly if risk of volume overload.	Must be ABO compatible. Requires 30 minutes for thawing in lab. Transfuse within 4 hours after dispense. Observe for circulatory overload.

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Blood Product	Purpose	Volume	Rate of Infusion / Duration	Comment
Cryoprecipitate	Replaces fibrinogen; used to prevent or control bleeding when fibrinogen or rarely other factors (Factor VIII, Factor XIII, von Willibrand factor) are low.	10 – 15 ml per bag; for adults available as 5 pooled units.	5 – 10 ml/min or as ordered. If pooled, 1 – 2 ml/min.	Efficacy decreases rapidly after thawing. Give immediately. Expires in 4 hours.
Whole blood	Replaces red cell and plasma volume.	500 ml	To be completed within 4 hours.	Requires special donation if autologous [facility specific]
Irradiated blood products	Cellular products (PRBCs and platelets) may be irradiated to prevent graft versus host disease.			No radiation risk to person administering or recipient. Require additional time to prepare.
CMV negative products	May by ordered for CMV sero-negativeimmunocompromised patients (refer to facility policy/practice).			

Appendix B: A Patient's Guide to Blood Transfusion (Obtain most current form from CA DPHS Website)

See "Attachments" tab – upper right corner of screen

- ENGLISH VERSION
- SPANISH VERSION

Appendix C: Laboratory Requisition Transfusion Service (Facility to enter local and most current form)

See "Attachments" tab – upper right corner of screen

- LABORATION REQUISITION Transfusion Service

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Approving Committee/Title of person responsible: Regional Blood Administration Workgroup (TPMG, Regional Lab, MGSS, and PCS)	

Appendix D: Transfusion Service Emergency Release of Donor Blood (Facility to enter local and most current form)

See "Attachments" tab – upper right corner of screen

- TRANFUSION SERIVCE Emergency Release of Donor Blood

Appendix E: Downtime Blood Pick-up Slip (Facility to enter local and most current form – facility specific)

Appendix F: ABO/Rh Compatibility Tables

Red Blood Cells:

Recipient's Group	First Choice	Second Choice
O	O	None
A	A	O
B	B	O
AB	AB	A, B, then O

- Rh negative recipients shall receive Rh negative red blood cell components. In the event of critical shortages of Rh negative blood (or MTP), it may be necessary to give Rh positive units to Rh negative individuals.
- Rh positive recipients may receive either Rh positive or Rh negative red blood cell components.

Plasma:

Recipient's Group	First Choice	Second Choice
O	O	AB, A, then B
A	A	AB
B	B	AB
AB	AB	None

Platelets:

- Most platelet infusions do not require ABO compatibility. In some cases of frequently transfused patients, transfusing compatible platelets may enhance platelet survival. Rh

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negative women of childbearing age should receive Rh negative platelets whenever possible.

Cryoprecipitate:

- Cryoprecipitate compatibility is not necessary for adult patients.

Appendix G: Instructions to Patients Receiving Blood Transfusions (Facility to enter most current form)

See "Attachments" tab – upper right corner of screen

- Instructions to Patients Receiving Blood Transfusions

Appendix H: Transfusion Reaction Investigation Form (Facility to enter most current form)

See "Attachments" tab – upper right corner of screen

- Transfusion Reaction Investigation Form