Monitoring Transfusion of Blood Products

Expanding Scope of Practice

- Coastal Valleys EMS Agency is expanding paramedic scope of practice to include paramedic monitoring of blood product transfusions.
- For trauma re-triage, critical patients often have the need for blood product transfusion during transport.
- Other patients may require transfer for higher level of care and will require blood product transfusions.
- This policy will apply equally to adult and pediatric patients.

Blood transfusion: A critical intervention

- Patients in hemorrhagic shock require rapid, targeted resuscitation with blood transfusion, an integral component of resuscitation.
- Delays in this vital therapy can have harmful effects.
- Current policy only allows blood transfusion by limited aeromedical transport team resources or require the sending hospital to send a nurse to accompany the patient during transport.
- Permitting appropriately trained paramedics to monitor blood product transfusions during these transports contributes to the resilience of our hospital and EMS systems.

Treatment Guideline Policy # 8105 Monitoring Transfusion of Blood Products

Purpose:

1. To provide a mechanism for Paramedics to monitor the transfusion of blood products during interfacility transports.

Policy:

1. Paramedics:

Only those Paramedics who have successfully completed training program(s) approved by the Coastal Valleys EMS Agency Medical Director on monitoring infusion of blood products will be permitted to monitor them during interfacility transports.

2. ALS Ambulance Providers:

Only those ALS Ambulance providers approved by the Coastal Valleys EMS Agency Medical Director will be permitted to provide the service of monitoring infusion of blood products during interfacility transports from hospital(s) within their service area.

3. Patients:

Patients that are candidates for paramedic transport will have pre-existing blood product transfusions in peripheral lines Coastal Valleys EMS Agency does not authorize EMS personnel to start, hang or otherwise initiate the transfusion of blood products.

Principles:

1. Patients in hemorrhagic shock may need to be transferred to a tertiary care or trauma center with blood/blood product transfusions in process as part of emergency resuscitation.

2. Blood products include packed red blood cells (PRBCs), whole blood, fresh frozen plasma (FFP), platelets, cryoprecipitate, and prothrombin complex concentrates.

3.. Transfusion reactions are defined as follows:

a. **Allergic reaction**: hives or itching only, without signs of anaphylaxis.

b. **Anaphylaxis**: allergic reaction with angioedema, wheezing, respiratory distress, vascular instability, vomiting, diarrhea and/or shock. Rash may or may not be present.

c. **Hemolytic transfusion reaction**: life threatening reaction that may present with fever, headache, back pain, nausea, hypotension, and pain at the transfusion site.

d. **Volume overload**: may develop pulmonary edema and respiratory distress.

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Guidelines:

1. Before accepting responsibility for the patient:

   a. Confirm with a nurse or physician from the sending facility, that the name on the patient's arm band and blood bank number on the blood transfusion form is the same as the name and blood bank number on the unit(s) of blood product which is (are) infusing.

   b. For uncrossmatched blood products (Which will not have a patient name) confirm the uncrossmatched blood product transfusion is for the patient being transferred. A patient identification band must be present prior to transfer.

2. Document in the ePCR the physician order for the blood product(s) to be transfused, which shall include the following:

   a. Type of blood product being transfused.
   b. Rate of the transfusion
   c. Name of the transferring/ordering physician
   d. Any adverse reactions and treatments provided to the patient during transport.

3. Monitor all patients continuously during transport with a cardiac monitor and a noninvasive blood pressure monitor, documenting vital signs every 15 minutes.

4. For patients with suspected transfusion reactions (including hemolytic reactions, allergic reactions, anaphylactic reactions, and volume overload):

   a. Stop the blood product transfusion.
   b. Disconnect the IV tubing (do not flush tubing) and flush the port.
   c. Initiate care per applicable Treatment Guideline
   d. Provide the remaining blood product and tubing to the receiving hospital.

5. Document volume of blood product transfused and any suspected transfusion reaction on the ePCR. Communicate any reaction and interventions taken to the receiving facility staff.

6. All cases for which this policy is implemented will be audited by the EMS provider agency and reports sent to the Coastal Valleys EMS Agency monthly.

7. The receiving emergency department staff will be responsible for communicating any transfusion related adverse events to the sending facility.

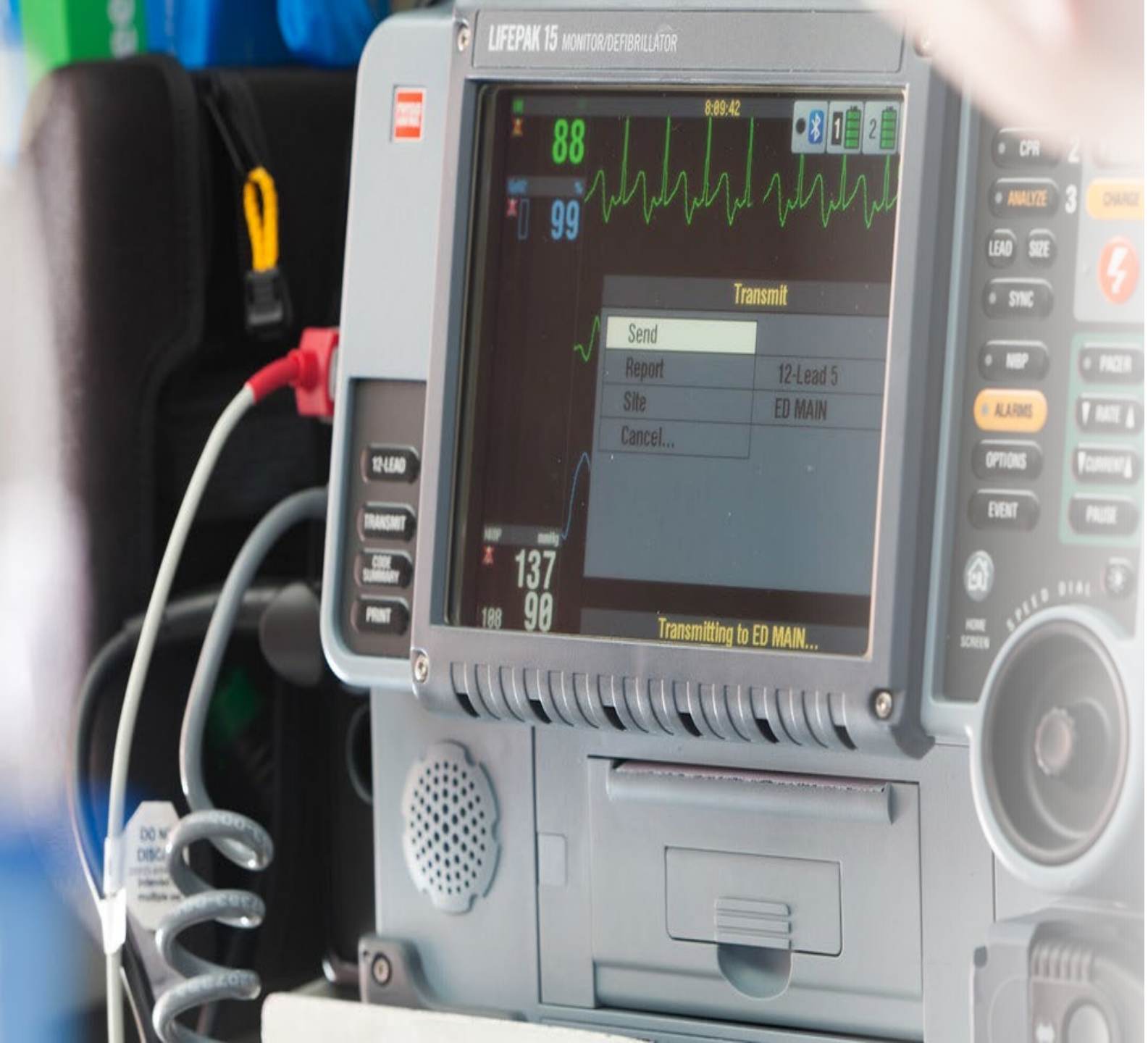
8. During transfer of care from the sending facility to the transport paramedic, blood products shall be disconnected from infusion pumps and manual drip rate(s) set by sending medical team. Use of portable infusion pumps during transport is permissible if the paramedic has documentation of training and proof of competency in the use of the equipment on file with the ALS ambulance provider. In this case, the use of an infusion pump during transport must be included in the sending physician orders.

The Different Kinds of Blood Products you may encounter

- **Packed Red Blood Cells (PRBCs)**
  - Typically used to replace red blood cells in anemic patients or in acute blood loss.
- **Whole Blood**
  - None of the blood components (rbcs, wbcs, platelets, and plasma) have been removed. Whole blood transfusions are often given in major trauma where massive transfusion is required for resuscitation.
- **Fresh Frozen Plasma (FFP)**
  - Contains coagulation factors at the same concentration as blood plasma. Typically used when coagulation factor replacement is needed (e.g. bleeding while on blood thinners, massive acute blood loss).
- **Platelets**
  - Mediate blood clotting. Can be transfused in patients with low blood platelet levels, bleeding patients on medications that inhibit platelet activity or as part of a massive transfusion protocol for massive acute blood loss.
- **Cryoprecipitate**
  - Contains certain coagulation factors more concentrated than in plasma. Typically used when coagulation factor replacement is needed.
- **Prothrombin Complex Concentrates**
  - Derived from plasma with a concentrate of specific clotting factors. Typically used to reverse the effects of blood thinner medications in bleeding patients.

Requirements

- All blood products must be initiated under a physician's written order by transferring facility prior to transport.
- The transfusion rate will be determined by the transferring physician and communicated to the paramedic prior to transport.
- EMS is not authorized to start, hang or otherwise initiate transfusion of blood products.
- Paramedic must document
  - Type of blood product
  - Rate of infusion
  - Total amount to be infused
- Patient Destination is per CVEMSA Point of Entry Policy.

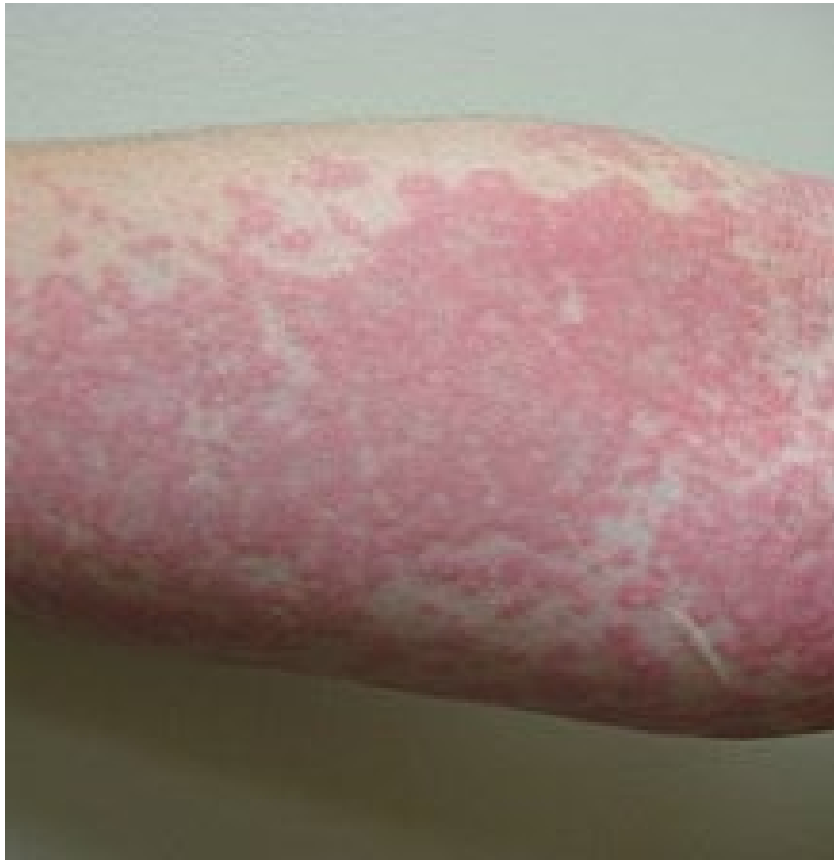


Initiating Monitoring

- **Confirm**
  - Name
  - Blood bank number
  - Type of blood product being infused
  - Rate of transfusion
  - Name of transferring physician
- **Monitor**
  - Cardiac monitors
  - Blood pressure
  - Temperature, if thermometer available

Transfusion Reactions

- Any concern for serious reaction including allergic reaction anaphylaxis, hemolytic transfusion reaction or volume overload – **STOP the Infusion.**
- Change the IV tubing (**do not flush the line**).
- Initiate care as per applicable Treatment Protocols.
- Notify the receiving facility and report reactions and treatment to hospital staff on arrival.
- Provide the remaining blood product and tubing to the receiving hospital.
- Consider Base Contact if online medical direction is desired or if required by treatment protocols.



Transfusion Reactions

Allergic Reaction– STOP the infusion and treat as per Treatment Guideline *7201-Allergic/Anaphylactic Reactions*

Anaphylaxis – STOP the infusion and treat as per Treatment Guideline *7201-Allergic/Anaphylactic Reactions*

Hemolytic transfusion reaction – STOP the transfusion, initiate fluid bolus for poor perfusion and Treat as per Treatment Guideline 7301 and *1207-Non-Traumatic Hypotension*

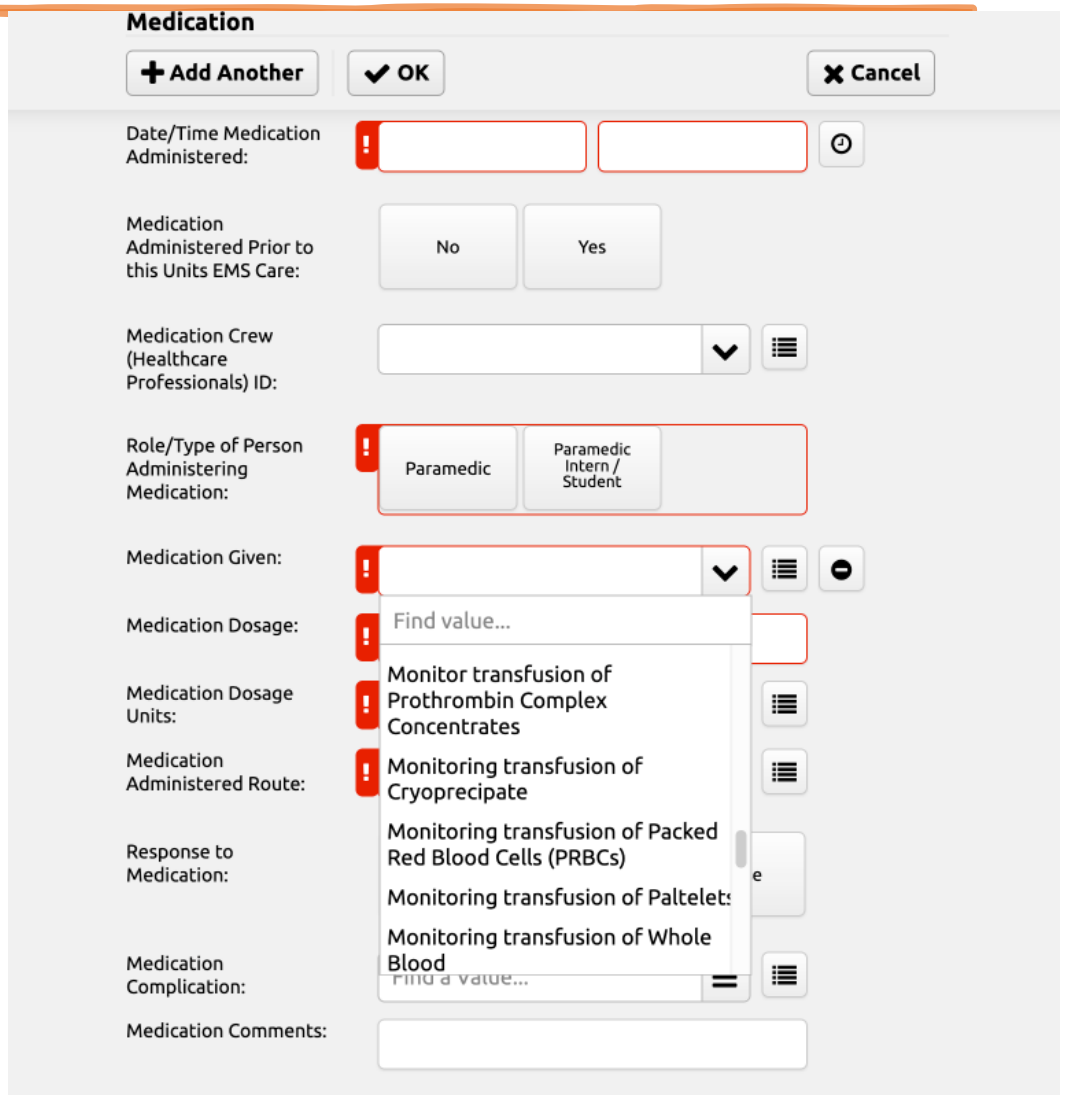
Volume overload - STOP the infusion; provide supplemental oxygen if indicated and Treat as per Treatment Guideline 7701- *Respiratory Distress>CHF*

Patient Transfer to Receiving Hospital

- Report any suspected transfusion reactions and treatment to the receiving hospital team.
- Attach a copy (can be a photo per your provider agency policy) of the physician written order to your ePCR and leave the order with the receiving facility.
- Document in your narrative
  - The volume of blood product transfused.
  - Any suspected transfusion reactions, including the type of reaction suspected, and treatments provided.

Documentation

- A data field in ImageTrend under “Medications” will be available to select the type of blood product monitored.



Treatment Guideline Policy # 8105

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