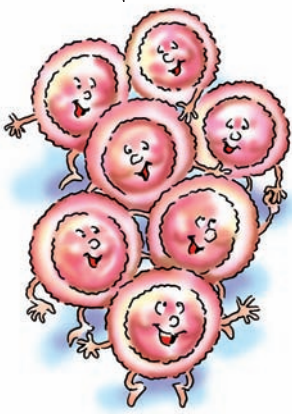


# Keep your patient safe when transfusing PRBCs

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We may be ordered for your patient for a variety of reasons.



Patients receive blood and blood products for a number of reasons, such as anemia or blood loss due to trauma, surgery, or certain medical conditions. The most commonly prescribed blood product is packed red blood cells (PRBCs). At any given time during your shift, you may receive an order to administer PRBCs to your patient, so you should always be ready to carry out this task in the safest possible manner.

In this article, I'll review the steps you need to take each and every time you administer PRBCs to keep your patient safe. Key points of emphasis will be bolded so that you'll have a quick reference for the future.

## Immediately after receiving the order

As soon as you receive the order to administer PRBCs, you should start taking steps toward keeping your patient safe. One of the first things you should do is make sure your patient has had a **type and cross match to check for compatibility**. You won't be able to give any blood product without this being complete. If this hasn't been done, you'll need to follow your facility's policy to ensure that it's completed as soon as possible.

After you've confirmed that the type and cross match has been completed, you'll be able to continue. Your patient will need to give **informed consent before you give the blood**. Talk with your patient about the procedure, include how the PRBCs will be administered, explain what you'll do to keep him or her safe, and give a time frame for how long the procedure will take. Keep in mind that your patient has a right to refuse the procedure; if this happens, you'll need to notify the ordering healthcare provider right away.

**Emergency!** There may be incidents in which your patient may need to receive blood products in an emergency situation. In some life-threatening situations there may not be enough time to complete the usual compatibility tests. In such cases, type O is the blood type that can be used. Type O is the universal donor, meaning this blood type is safe for almost everyone. Each facility will have specific policies and procedures for transfusing blood in the safest possible manner in these situations. Make sure that you're familiar with your facility's policies.

## Before requesting release of blood from the blood bank

You should begin the transfusion within 30 minutes of obtaining the blood on your unit, so it's very important that you do the following before you request the blood to be released from the blood bank. Make sure that your patient has a patent I.V. line that's functioning properly. When using a peripheral line, check that it's at minimum a 20-gauge needle; any size smaller could cause occlusions or slow the infusion. Gather your supplies: Get a **Y-type blood administration set** and **0.9% sodium chloride solution**. No other fluid type should be used. Check your facility's policy on the amount of 0.9% sodium chloride solution you should use; the typical amount needed is 250 or 500 mL.

Assess your patient by obtaining and documenting a pretransfusion **full set of vital signs**. This will give you baseline information for comparison during transfusion. If the patient has an elevated temperature of 100.7° F (37.8° C) or greater, stop and call the healthcare provider for direction before proceeding; otherwise continue by priming the Y-type tubing with the 0.9% sodium

chloride solution and make sure the fluid level reaches the fill line of the filter.

Thoroughly clean the patient's connection sites with alcohol, let them dry, and connect the primed line to the patient. At this time you'll only need to set the rate to a keep open rate. Determine if the healthcare provider has prescribed medications to be given before transfusion; if so, give the prescribed medication. Now you're ready to request the blood to be released to you.

### Immediately before hanging the PRBCs

As previously stated, the **blood must be initiated within 30 minutes of arrival**, so make sure that there will be another qualified licensed nurse available to assist you to **verify the blood** after it's delivered. The verification process has two steps.

First, both nurses should make sure the information found on the tag attached to the blood matches the information on the patient's wristband, which includes validating the patient's first and last name, type and cross match number, identification number, and date of birth. Then check the tag attached to the blood with the label affixed to the blood. This will include the unit number, blood group/Rh, blood product, and expiration date.

**Don't hang the blood if any differences are found** during any part of the verification. Stop and notify the blood bank. If you verify with another nurse that everything matches then both of you should sign the appropriate areas to indicate positive verification. You're now ready to hang the blood.

### Action steps during transfusion

Put on gloves and any other personal protective equipment required before spiking the bag of blood. Spike the blood using the other port of the Y-set opposite the 0.9% sodium chloride solution. **Start infusing the blood slowly**; each facility policy will be different, but the typical rates are less than 5 mL/minute. Stay with your patient for at minimum the first 15 minutes after the blood reaches him or her. During this time, **watch your patient closely** for flushing; respiratory difficulties; itching; complaints

of backache, headaches, or nausea and vomiting; chest pain; and decreased urine output (see *Recognizing acute transfusion reactions*). Check **vital signs at the 15-minute mark** and compare with the pretransfusion results. Look for elevated fever, tachycardia, and hypotension. Any of these symptoms could be a sign of an adverse reaction and immediate action must be taken.

If you note an adverse reaction, stop the blood, disconnect the line from the patient, notify the healthcare provider, and keep the line patent by hanging a new bag of 0.9% sodium chloride solution. Don't turn on the saline connected to the Y-set because this will cause the remaining blood in the tubing to go to your patient, which may cause more problems. Don't discard the blood; wait for direction from the healthcare provider. If the decision is made to stop the transfusion, then you'll need to follow your facility's policy on returning the blood to the blood bank.

If no problems are noted during the first 15 minutes of transfusion, then you can document findings up to that point, increase the infusion rate, and decrease observation according to your facility's policy. Ideally PRBCs should infuse over 2½ to 3 hours. To avoid risk of bacterial growth, you should **never allow PRBCs to hang more than 4 hours**.

**Warning!** It's very important for you to remember that all medications are incompatible with blood products. Never push any medications through the I.V. line with the blood because this can cause hemolysis, or destruction of the RBCs. If it becomes absolutely necessary for the blood to be interrupted to administer medications, a healthcare provider's order must be obtained. To do this safely, you'll need to thoroughly flush the line with at least 20 mL of 0.9% sodium chloride solution, give the medication, flush again with an additional 20 mL or more of 0.9% sodium chloride solution, and then restart the transfusion.

### Action steps posttransfusion

When all the blood has infused, close the roller clamp on the Y-set with the blood and open the port to infuse the 0.9% sodium

Follow these steps for safe blood transfusions.



## Recognizing acute transfusion reactions

Acute transfusion reactions	Possible causes	Possible ways to prevent these problems
<ul style="list-style-type: none"> <li>• Itching</li> <li>• Rash</li> <li>• Hives</li> <li>• Chills</li> <li>• Flushing</li> <li>• Headache</li> <li>• Anxiety</li> </ul>	<ul style="list-style-type: none"> <li>• Mild-to-moderate hypersensitivity (antibodies in donor blood)</li> <li>• Allergic reactions</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct the patient and family on possible problems and encourage them to notify you of any unusual changes during the transfusion.</li> <li>• Administer antihistamines as prescribed, usually pretransfusion or between units.</li> </ul>
<ul style="list-style-type: none"> <li>• Febrile reactions</li> </ul>	<ul style="list-style-type: none"> <li>• Mild-to-moderate hypersensitivity</li> <li>• Bacterial contamination</li> <li>• Hemolysis</li> </ul>	<ul style="list-style-type: none"> <li>• Check vital signs at minimum before, within the first 15 minutes after starting, and at the end of transfusion.</li> <li>• Administer antipyretics as prescribed, usually pretransfusion or between units.</li> <li>• Notify the healthcare provider if fever is noted.</li> <li>• Don't let blood infuse over 4 hours.</li> </ul>
<ul style="list-style-type: none"> <li>• Nausea and vomiting</li> <li>• Lower back pain</li> <li>• Tachycardia</li> <li>• Hypotension</li> <li>• Hematuria (blood in the urine)</li> </ul>	<ul style="list-style-type: none"> <li>• Blood incompatibility (hemolytic)</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure compatibility testing is performed.</li> <li>• Complete two-nurse verification process.</li> <li>• Obtain baseline and first 15-minute vital signs.</li> <li>• Stay with the patient during the first 15 to 30 minutes.</li> </ul>
<ul style="list-style-type: none"> <li>• Circulatory overload</li> <li>• Crackles</li> <li>• Shortness of breath</li> <li>• Tachycardia</li> <li>• Distended neck veins</li> </ul>	<ul style="list-style-type: none"> <li>• Too many fluids being administered in too short a period of time</li> </ul>	<ul style="list-style-type: none"> <li>• Before starting the transfusion and during the transfusion:                             <ul style="list-style-type: none"> <li>—listen to lung sounds, assess respiratory status, and assess neck veins</li> <li>—check vital signs at minimum before, within the first 15 minutes after starting, and at the end of transfusion</li> <li>—notify the healthcare provider of all concerns</li> <li>—stop all other I.V. fluids.</li> </ul> </li> <li>• Administer diuretics if prescribed.</li> </ul>

chloride solution. Allow the saline to infuse until the line is clear. Meanwhile, obtain a **posttransfusion set of vital signs** and document according to your facility's policy. Repeat the steps described in this article for any additional units of PRBCs to include using new Y-set tubing.

### Ready! Steady! Go!

Keeping your patients safe is your number one priority. Although each facility will have unique policies on the administration of blood products, this article describes the steps you need to take to keep your patient safe each and every time you administer PRBCs, regardless of your practice location. So the next time you receive an order that reads *Administer 2 units of PRBCs*, you'll be ready! ■

### Learn more about it

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