



# e-Network Forum

## CALIFORNIA BLOOD BANK SOCIETY

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### **Questions about the use of blood component recipient sets**

**\*\*The first question** comes from a **blood banker in Mississippi**, who would like advice on a blood filtration issue with which she is struggling. According to the AABB Technical Manual, filters used for blood component transfusion (platelets, cryoprecipitate, and fresh frozen plasma) should have shorter tubing and smaller filters than those used for the transfusion of red cells. Excerpts from the 13th edition of the Technical Manual include

1. **'Infusion Sets** - Any blood component must be administered through a filter designed to retain blood clots and particles potentially harmful to the recipient. All filters and infusion devices must be used according to the manufacturer's directions'.
2. **'Standard Sets** - Standard blood infusion sets have in-line filters (pore size 170-260 microns), drip chambers, and tubing in a variety of configurations. Sets should be primed according to the manufacturer's directions, using either the component itself or a solution compatible with blood. For optimal flow rates and performance, filters should be fully wetted and drip chambers filled no more than half full'.
3. **'Gravity-drip sets** for the administration of platelets and cryoprecipitate have small drip chamber/filter areas, shorter tubing, and smaller priming volumes'. The Mississippian wonders if it is truly necessary to use one kind of blood administration set for red cell transfusions and another for components, if the tubing is being rinsed after the transfusion. Most of the blood products transfused at her hospital are 'pre-storage' leukocyte reduced. She has surveyed surrounding hospitals, all of which claim to use a standard Y-type filter for ALL of their transfusions of blood and blood components. The Mississippian wants to know if this is an acceptable approach, or if she her hospital needs to use a different filter type for red cells versus for components, and if so, what are the appropriate specifications?

**\*\*The second question** comes from a **blood banker in Los Angeles** who reports having spoken with a technical specialist at one of the blood component recipient set manufacturers. According to the Los Angeles blood banker, the technical specialist did not recommend any particular blood component recipient set for platelet versus red cell transfusions. According to the technical specialist, all of their blood and component recipient sets include the same sized drip chamber, thus residual volumes are very similar for all of the different sets. The major differences between sets are Y-type versus straight tubing and length of tubing. However, the residual volume in the tubing, regardless of length, is small compared to the drip chamber. The technical specialist finally suggested that Y-type tubing might be preferable because it provides for rinsing and thus making residual volumes a mute point. The Los Angeles blood banker is curious to know if others within the e-network employ a single type of blood administration tubing for all transfusions, or if others use a selection, and if so, what types and why?

Please submit your comments regarding the selection of blood component recipient sets for transfusion of the common blood products - red cells, platelets and plasma.

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The following responses have been submitted.

1. A **hospital in California** recently went through a policy change for filters. They decided upon a Blood Component recipient set (150 micron, shorter tubing) for all plasma and platelet based transfusions, and a regular 170 micron Y set for all red cell transfusions. All their red cell units are leukocyte-reduced. Before this, red cell tubing was used for plasma and platelet transfusions also. They report that they have noticed better platelet increments since implementing the Blood Component recipient set, although this is anecdotal, as they have not done a formal study. There have been no complaints from nursing staff.

**ADDENDA** May 28, 2002

2. A **blood banker in Houston** is of the opinion that the most important consideration is to **make certain that the set is approved for use with whatever component is being transfused**. Some infusion sets may be acceptable for red cells but will remove platelets. This was the case

several years ago with one of their local hospitals who called to complain that platelet transfusions just weren't "any good anymore." Their patients were getting virtually no increment after transfusion. The responding blood banker reports that when they were asked what kind of infusion set they were using, it was discovered that the set was not 'compatible' with platelet transfusions, and as a result they were essentially transfusing plasma instead of platelets, since the filter removed most of the platelets. The Texan concludes by saying "so buyer beware...and do your homework! It is fine to use the same type of set for all components as long as it is approved for use with all components."

Please submit comments to the [e-Network Forum](#).



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**Posted:** May 21, 2002

**Addenda:** May 28, 2002