


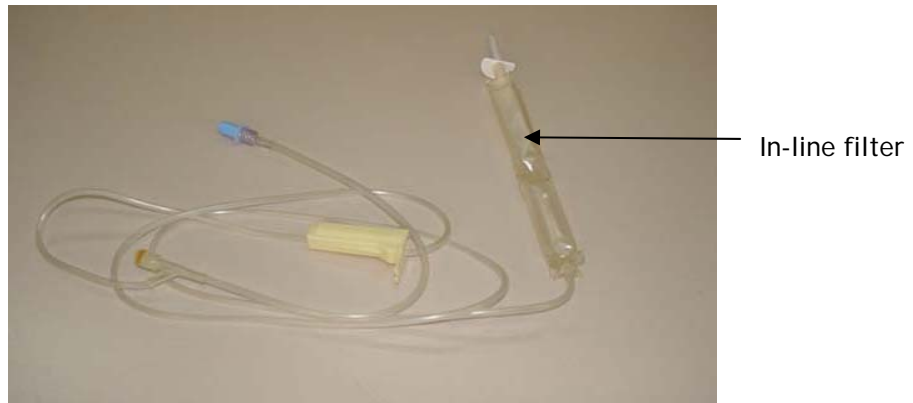
## Blood Filter Protocol

### 1. Standard In-line Filters

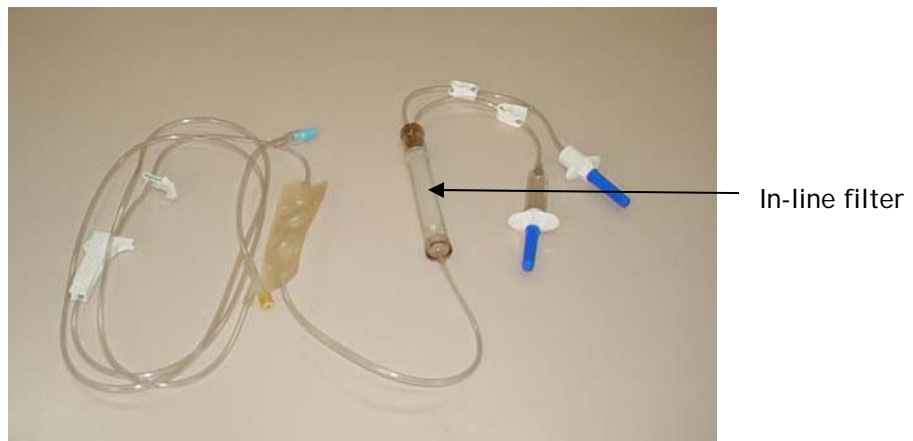
<b>Who</b>	Division 1 Registered Nursing Staff Student Nurses (under the supervision of a Division 1 Registered Nurse) Medical Staff
<b>Expected Outcomes</b>	Potentially harmful blood clots and particles will be removed from the blood component by using a blood giving set that has a standard in-line filter.
<b>Precautions</b>	A blood giving set with a standard in-line filter (pore size: 170-260 microns) must be used for all transfusions of blood components.
	All filters and infusion devices must be used according to the manufacturer's instructions.
<b>Why</b>	Stored blood contains blood clots and particles that are potentially harmful to the recipient. A standard in-line filter removes these clots and particles.
<b>Step 1</b>	Sets should be primed according to the manufacturer's directions, using 0.9% saline or the blood component.
<b>Step 2</b>	Standard in-line filters should be fully wetted and drip chambers no more than half full.
<b>Step 3</b>	Two (2) to four (4) units of blood can be transfused through a blood giving set with a standard in-line filter before the giving set needs to be changed.  However, the blood giving set with standard in-line filter must be changed at least every 8 hours because the debris trapped in the filter promotes multiplication of any bacteria that might be present.
<b>Step 4</b>	The blood giving set with standard in-line filter should also be changed if the filter becomes clogged and/or the flow rate slows.

**Equipment**

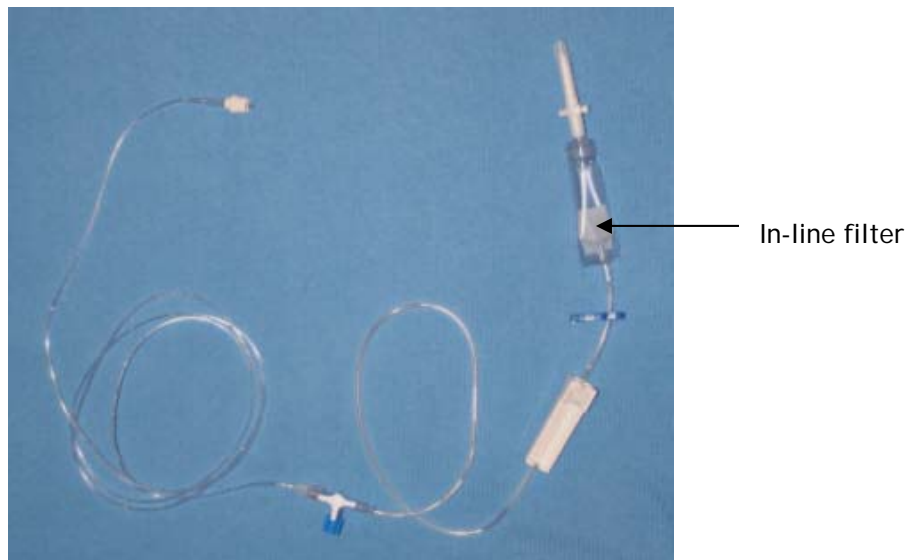
Example 1: Gravity blood giving set with in-line filter



Example 2: Graseby pump blood giving set with in-line filter



Example 3: Paediatric blood giving set with in-line filter



## 2. *Leucocyte Depletion Filters*

**Who** Division 1 Registered Nursing Staff  
Student Nurses (under the supervision of a Division 1 Registered Nurse)  
Medical Staff

**Expected Outcomes** The use of a leucocyte depletion filter will remove most white blood cells (leucocytes) from the blood component.

**Precautions** A blood giving set with a standard in-line filter (pore size: 170-260 microns) must be used for all transfusions of blood components.

Leucocyte depletion filters must be used **in addition** to a blood giving set with a standard in-line filter.

Blood components which are already leucocyte depleted **do not** require an additional leucocyte depletion filter. Details of all modifications will be printed on the blood component label.

**Why** Leucocyte depletion reduces febrile non-haemolytic transfusion reactions (FNHTR), alloimmunisation and other immunological reactions.

Leucocyte depletion can reduce the risk of transmission of the cytomegalovirus (CMV), if CMV negative blood is not available.

For details of the clinical indications for leucocyte depletion see the 'Leucocyte Depleted Blood Components' Protocol.



**DO NOT prime the leucocyte depletion filter with 0.9% saline**, as this will interfere with the filtering function.

**DO NOT flush the leucocyte depletion filter** at the completion of the transfusion. When the transfusion is complete, remove the bag and leucocyte depletion filter and place in an infectious waste container.

Use the leucocyte depletion filter only for the blood component for which it is designed.

All filters and infusion devices must be used according to the manufacturer's instructions.



Leucocyte depletion filters **DO NOT** prevent Transfusion Acquired - Graft versus Host Disease. Please see 'Irradiated Blood Components' protocol.

## Leucocyte Depletion of Platelets



All platelets prepared in Australia (exception: Qld) are leucocyte depleted before they are issued to hospitals. Therefore it is not necessary to keep platelet leucocyte depletion filters at ward level. In the unlikely event that un-filtered platelets collected in Qld are issued, a leucocyte depletion filter will be sent with the platelets.

### Equipment

Example of a leucocyte depletion filter for red cells



**Step 1** Prime the blood giving set with standard in-line filter with 0.9% saline.

**Step 2** Connect the leucocyte depletion filter to the blood pack.

**Step 3** Connect the leucocyte depletion filter to the blood giving set.

**Step 4** Prime the leucocyte depletion filter with the blood component (follow manufacturer's instructions).

**DO NOT prime the leucocyte depletion filter with 0.9% saline, as this will interfere with the filtering function.**



Leucocyte depletion filters are used for **one (1) unit of blood only**.

**Step 5** **DO NOT flush the leucocyte depletion filter at the completion of the transfusion.**

When the transfusion is complete remove the bag and leucocyte depletion filter and place in an infectious waste container.

**Step 6** After removing the bag and leucocyte depletion filter, flush the blood giving set with 0.9% saline as ordered.

**Step 7** At the end of the transfusion episode disconnect the blood giving set and dispose of in an infectious waste container.



If an adverse event (actual or 'near miss') is associated with the use of a blood filter, document details in the medical record and complete an incident report.



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*The Clinical Use of Blood in Medicine, Obstetrics, Paediatrics, Surgery and Anaesthesia, Trauma & Burns*, 2001, World Health Organisation, Blood Transfusion Safety, Malta

*Guide to the preparation, use and quality assurance of blood components*. 2003, 9<sup>th</sup> edn, Council of Europe Publishing, Germany

'Leucocyte Depletion of Blood and Blood Components', in *Topics in Transfusion Medicine: Special Edition*, Oct 1996 - Vol 3, No 2, Australasian Society of Blood Transfusion Inc., Sydney

Popovsky, M. (Ed), 2001, *Transfusion Reactions*, 2<sup>nd</sup> edition, AABB Press, Bethesda

<b>SH Policy</b>	Patient Care	<b>ACHS</b>	Continuum of Care
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