Australian Red Cross Lifeblood

2020 Edition

Pack Check Educator Guide

An educator guide for checking the patient, prescription and pack before transfusion

Contents

This resource is designed to assist educators with teaching nurses, midwives and medical students how to check a blood component prior to transfusion.

This resource is based on the Australian and New Zealand Society of Blood Transfusion and Australian College of Nursing 2019 *Guidelines for the Administration of Blood Products*, the National Blood Authority's *Patient Blood Management Guidelines*, and Australian Red Cross Lifeblood's *Blood Component Information: An extension of blood component labels*.

Suggested session plan

The most effective sessions are well-planned and tailored to your student's learning requirements and styles.

Preparation

Before your session, familiarise yourself with the content in this book and the additional resources, deciding what to cover in your session.

If you have the opportunity to use a presentation screen during your teaching sesssion, review the accompanying PowerPoint presentation and edit it according to the content you intend to cover.

Ensure students will have access to the following resources for the session:

- *Pack Check: Student Guide*
- *Pack Check: Clinical Scenarios* – provide students with a hard copy handout of your chosen scenarios (one copy per pair).
- Any additional content you plan to cover in your session such as the *Blood Component Administration Checklist* and/or the *Blood Compatibility Card*.

All of the resources are available for download at **transfusion.com.au/packcheck**

Session outline

1. To begin your session, introduce the activity and ask students to use their copy of *Pack Check: Student Guide*.
2. Ask students to complete the prior learning knowledge test on their own.
3. Talk through the blood component labelling points, allowing for the opportunity to read and ask questions. Points could include:
   - What details are on a blood component label?
   - Why are they important?
4. Give an overview of the patient, prescription and pack check process (page 6). Important points to include:
   - Right patient, right pack, right prescription.
   - The patient, prescription and pack check is only one part of the blood administration process.
   - The patient, prescription and pack check must be performed uninterrupted by two checkers independently.
   - Do not proceed if there are any discrepancies and contact the Transfusion Service Provider or senior nurse or medical officer.
   - Always follow your local health service policies.
5. Walk through the 5-step-process of the patient, prescription and pack check, allowing the learners the opportunity to read and ask questions.
6. Divide the group into pairs and distribute a clinical scenario to each pair from *Pack Check: Clinical Scenarios*. Ask students to independently check the blood component pack against the written prescription and patient information. Next, both must compare and confirm that this is the right pack for the right patient. At the end of this exercise, each individual can complete the additional learning questions located at the bottom of the scenario page. Go through answers to the scenario with the entire group, checking that the scenario was completed and understood by all. Complete additional scenarios as required.

Suggested session plan (continued)

Additional session content

If you have a longer session, or more advanced students, consider covering additional content such as:

Blood Component Administration Checklist

Distribute the *Blood Component Administration Checklist*. Run through the checklist, explaining each checklist item, while allowing students the opportunity to ask questions.

Blood Compatibility

A great resource for students is the *Blood Compatibility Card*. You can also find more advanced compatibility information on page 14.

Run through the resource, allowing students the opportunity to ask questions. Key points include:

- universal donor blood groups, and
- red cells and platelets have different compatibility to plasma.

Ask the students to reflect on prior learning as to why ABO compatibility is critical in blood transfusion.

Further Learning Q&A

These questions (page 15) are more advanced, so be selective about including these in your session. Introduce a relevant question verbally, allowing students the opportunity to answer. Run through the correct response before moving to the next question.

On completion

Repeat the prior learning test as a post-assessment. Ask for feedback about how the group feels they have improved from the pre-test.

Allow the opportunity for any questions and explain where students can find additional learning resources (see page 13).

Additional resources

All resources for educators and students are available for download at **transfusion.com.au/packcheck**

Prior learning knowledge test

Before beginning, we recommend that you complete a short test with your students to determine their prior knowledge and identify areas which they are not familiar with.

Below is an example of a blood pack with the following labels attached:

1 Blood component label

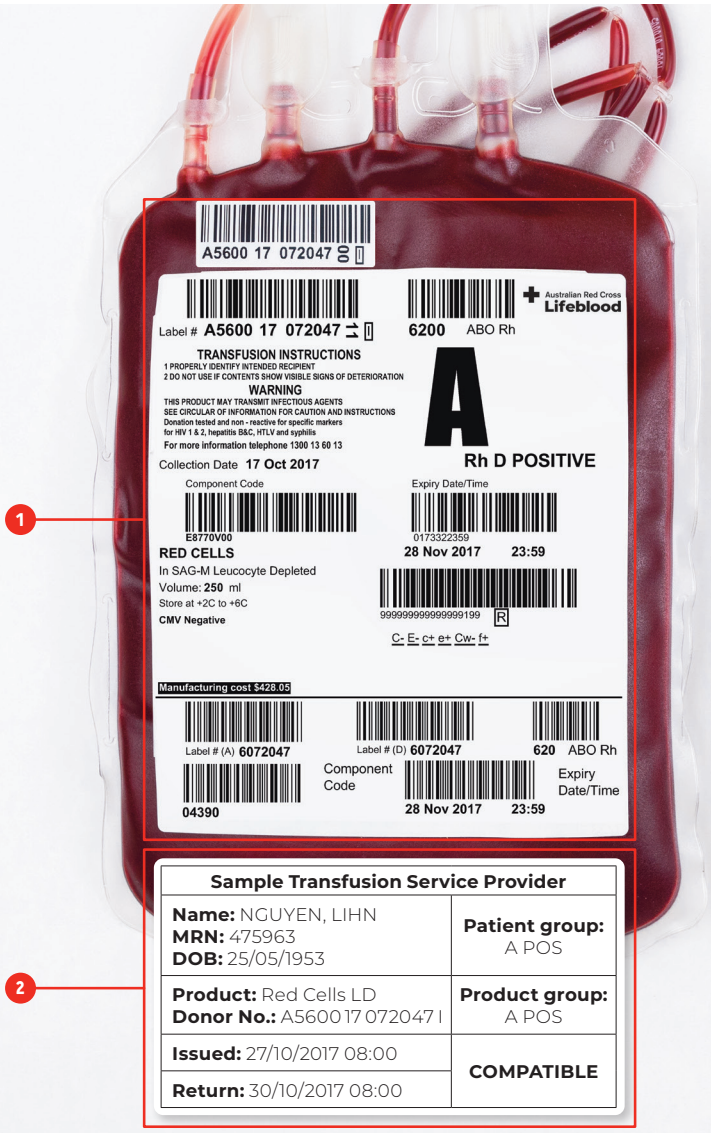
This label is attached by Australian Red Cross Lifeblood during donation and manufacturing processes.

2 Compatibility label

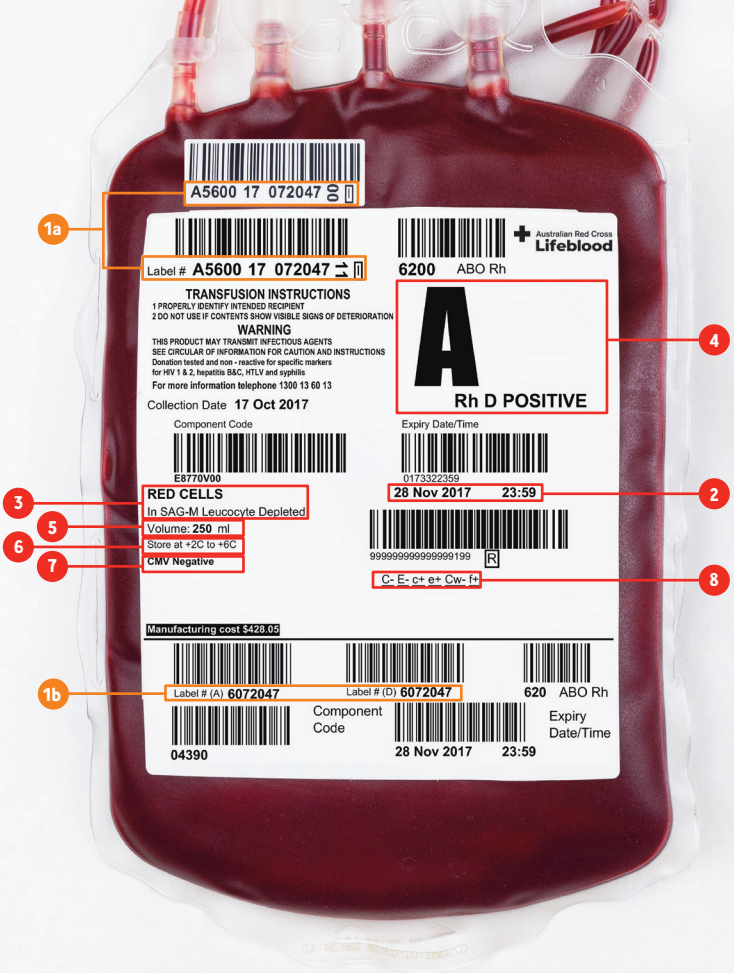
This label is attached by the Transfusion Service Provider once the pack has been allocated to a specific patient. Often a provider will attach more than one of these labels to assist with documentation in the patient's chart.

Ask students to complete the checklist below by locating each piece of information on the pack labels.

- ☐ Patient's first and family names
- ☐ Patient's date of birth
- ☐ Product type
- ☐ Any special testing and/or requirements
- ☐ Blood group
- ☐ Blood donation number
- ☐ Expiry date and time



What's on a blood component label?



Information is physically printed on the labels in text and barcode format. The barcode format is used by the Transfusion Service Provider, and the text information is used by clinical staff.

1 Donation identification number

This number links the blood component to the donor. On the label there are two different donor identification numbers, and you will need to determine which number to use, based on the matching number provided by your Transfusion Service Provider on the compatibility label. Providers that have switched to ISBT 128 will use the 14-digit alpha-numeric donation number (**1a**) (Label # or Pool #) in the top left hand corner, while providers using the Codabar system will utilise the donation identification number (**1b**) in the lower section.

2 Expiry date and time

All components have an expiry date, after which they are not suitable for use. The expiry date varies with the component, anticoagulant, additive, method of preparation and storage conditions. Some products like fresh frozen plasma (FFP) and cryoprecipitate have two expiry times; one to indicate how long these components are safe to store frozen and another to indicate the time they are safe to use once thawed.

3 Component name

Components you will come across include red cells, platelets, fresh frozen plasma, cryoprecipitate and cryodelepted plasma.

4 Blood group (ABO and RhD)

5 Component volume in mL

6 Storage temperature

This differs depending on the blood component. Red cells are stored between 2–6°C, platelets between 20–24°C, and FFP, cryoprecipitate and cryodepleted plasma are all stored at -25°C or below prior to thawing.

7 Modifiers

In some circumstances, patients require additional testing or modifications to blood components:

- Cytomegalovirus (CMV) negative components may be requested for a CMV negative patient.
- Irradiated blood components may be requested to prevent transfusion-associated graft-versus-host disease (TA-GvHD).
- Washed red cells may be required for certain patients with a history of severe allergic reactions or reactions to plasma proteins.

8 Phenotype results (if applicable)

A portion of the population have additional antibodies that need further matching to find a compatible blood component.

The patient, prescription and pack check

The patient, prescription and pack check is just one part of blood component administration. This resource concentrates on how to correctly check a pack at the patient's side. The steps below outline the process of blood component administration and may assist in understanding the patient side checks during transfusion administration.

1 Preparation for transfusion

This involves ensuring everything is set up for a successful transfusion including:

- ensuring staff and suitable equipment are available
- ensuring informed consent discussion has occurred and has been documented
- ensuring the prescription is complete and valid
- ensuring IV access is patent and appropriate to use
- confirming the patient's ID band is attached and correct (ask the patient or carer if possible)
- ensuring the patient understands the procedure and possible adverse events
- recording baseline observations
- administering any medication (if required)
- ensuring it is appropriate to proceed at this time.

2 Blood component collection

When collecting a blood component for a patient always:

- take documented patient identification, component type and special requirements, ensuring all patient details and documentation is identical
- ensure that you have collected the correct component type prescribed, and
- ensure all documentation for the removal/ collection has been completed.

3 Patient, prescription and pack check

The key focus of this resource is teaching this part of the administration process, which occurs at the patient's side immediately prior to transfusion. Key steps in this process are:

3.1 Inspecting the pack for integrity, component issues and expiration date and time.

3.2 Ensuring the information on the patient's wristband, the component label and compatibility label are all identical.

3.3 Ensuring the patient details are identical to the prescription.

3.4 Ensuring the prescription details are identical to the component label and compatibility label.

3.5 All above checks were performed uninterrupted by two independent checkers and have been documented. Both must compare and confirm this is the right pack for the right patient.

4 Blood component administration

Start the transfusion as soon as possible after completing the checks, and within 30 minutes of the pack leaving controlled storage. The transfusion must be started by one of the people who completed the checks.

Administer according to the rate on the prescription and ensure the component is completed within four hours and prior to component expiry.

5 Post-transfusion processes

Ensure the patient receives the entire component (consider an IV flush) and monitor patient as your local health service policy requires.

Dispose of the blood component pack if there are no adverse events and complete any required documentation.

Need a checklist?

The checklist for blood component administration is available at **transfusion.com.au/packcheck**

Step 3.1

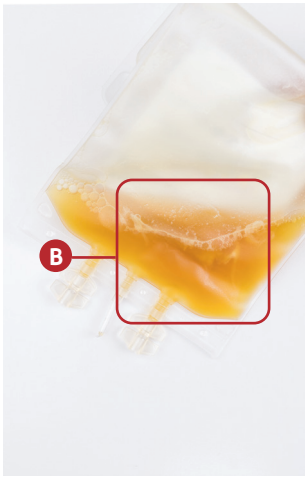
Inspect the pack

Check the quality and integrity of the pack before you commence the transfusion.

Check the pack for:

- **A** **No leaks and splits**
- **B** **No clots, discolouration, cloudiness**
- **C** **Within expiry date and time**
  There may be more than one expiry date on a pack, so ensure you check the pack thoroughly.

If you find any issues, do not continue and contact your Transfusion Service Provider, senior nurse or medical officer.



Step 3.2

Identical patient and pack labels

Compare the details on the patient's wristband with the component and compatibility labels. The details should all match.

Check all the details are identical:

- **A** **Patient first and family names**
- **B** **Patient DOB**
- **C** **Patient MRN/URN**
- **D** **ABO blood group compatibility**
  The Transfusion Service Provider will always indicate if a compatible but different blood group is used.
- **E** **Blood donation and batch numbers**
  There are two different donor numbers on the current label. Match the number on the compatibility label to the same format donor number on the pack label.

If there are any discrepancies, contact your Transfusion Service Provider, senior nurse or medical officer.

Step 3.3

Identical patient and prescription

Compare the details on the patient's wristband with the prescription. The details should all match.

Check all the details are identical:

- **A Patient first and family names**
- **B Patient DOB**
- **C Patient MRN/URN**

If there are any discrepancies, contact your Transfusion Service Provider, senior nurse or medical officer.

Step 3.4

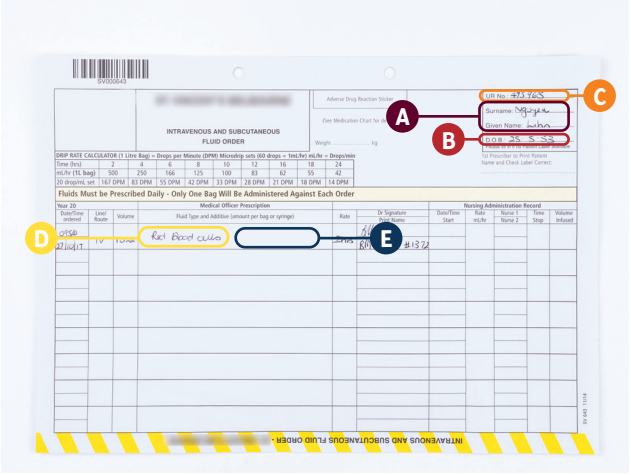
Identical patient and pack labels

Compare the details on the prescription with the component and compatibility labels. The details should all match.

Check all the details are identical:

- **A Patient first and family names**
- **B Patient DOB**
- **C Patient MRN/URN**
- **D Component type**
- **E Special requirements (if any)**

If there are any discrepancies, contact your Transfusion Service Provider, senior nurse or medical officer.



Step 3.5

Confirmation and documentation

This final step must take place immediately after each checker has completed the bedside checks. If there is any delay, the process must be started over from the beginning.

Check:

- All steps of the patient, prescription and pack check were performed uninterrupted by two independent checkers.
- Both checkers agree that this is the right pack for the right patient.
- The process has been documented.

After the checks are completed:

The blood must then be spiked by one of the staff members who performed the bedside check.

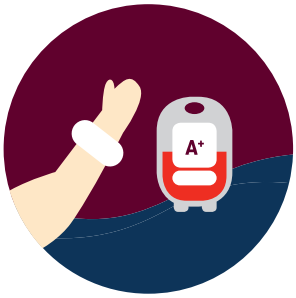
The staff member spiking the pack is responsible for ensuring that it is clinically appropriate to proceed with the transfusion at that time.

Things to remember when transfusing a blood component

The most important things to be aware of when responsible for the administration of blood components are:

Always follow your local health service policies

Ensure that the right pack is given to the right patient at the right time

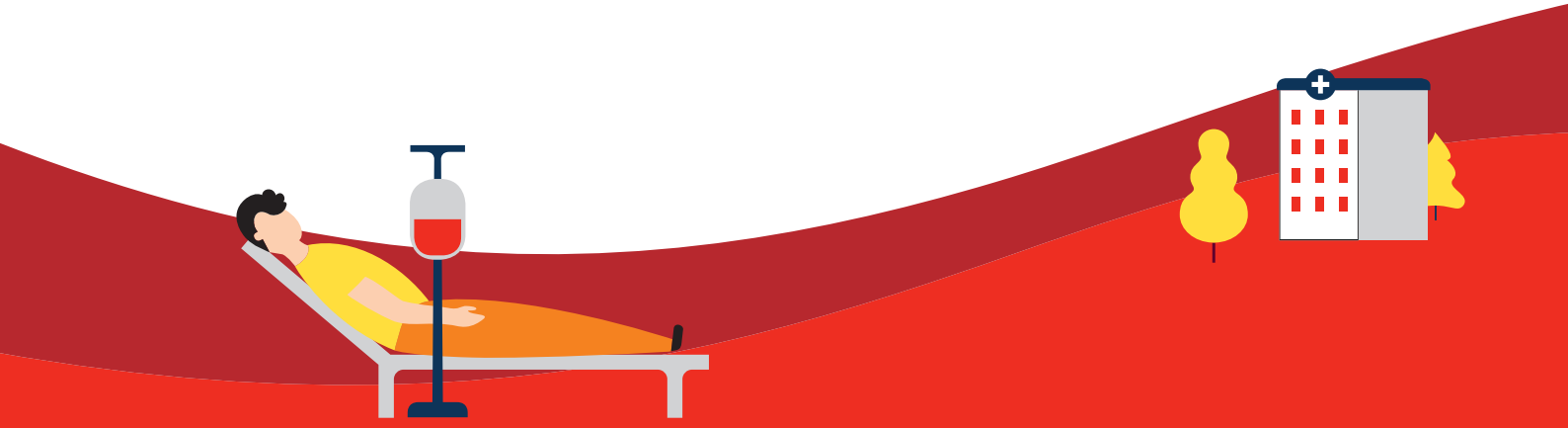


Verify the patient's identity at each stage of the process, involving the patient if possible

Do not proceed if you have any doubts and contact the Transfusion Service Provider, senior nurse or medical officer

Each person undertaking the administration of a blood component should understand their role and responsibilities according to the ANZSBT Administration Guidelines

Be aware of potential adverse transfusion reactions and their clinical presentation, and carefully monitor your patient throughout the transfusion



Additional resources

The following resources can be found at **transfusion.com.au/packcheck** to assist you in improving your transfusion administration knowledge.

Pack Check: Clinical Scenarios

Practice the patient, prescription and pack check in the context of a clinical scenario. Scenarios include red cells, platelets, FFP, cryoprecipitate, a thalassaemia patient, a neonatal patient, and a paediatric patient.

Blood Component Administration Checklist

A quick reference guide for the administration of fresh blood components covering the following topics: preparation for transfusion, blood component collection, the patient, prescription and pack check, blood component administration, and post-transfusion processes.

Blood Product Administration Checklist

A quick reference guide for fractionated blood products covering the following topics: preparation for administration, blood product collection, the patient, prescription and product check, blood product administration, and post-administration processes.

Blood Compatibility Card

Part of the patient and pack check includes ensuring the component is compatible with the patient. This quick reference card covers the basics of ABO and RhD compatibility for red cells, platelets and plasma components.

iTransfuse App

The iTransfuse App is the transfusion bedside support tool all clinicians need. The app includes interactive versions of the Blood Component Administration Checklist, Blood Product Administration Checklist. Blood Compatibility Card, and interactive tools for the diagnosis and management of transfusion reactions.

Blood Book: Australian Blood Administration Handbook

This resource has been developed to assist Australian health professionals in safe bedside transfusion practice including:

- information on the range of blood components and products currently available in Australia,
- guidance on the safe use and administration of blood components and products for neonates, paediatrics and adults, and
- checklists for both blood component and product administration.

Blood compatibility for educators

The blood group on the blood component label must be the most suitable available for the patient's blood group on the patient compatibility label. If you are unsure about compatibility, do not proceed and contact the Transfusion Service Provider or senior nurse or medical officer.

Red cells

Identical ABO group and RhD type should be used for red cell transfusion. All patients can safely receive O negative red cells. RhD negative patients transfused with RhD positive red cells can form anti-D, a haematologist should be consulted about RhD immunoglobulin treatment.

Patient's blood type	Donor's blood type							
	O-	O+	A-	A+	B-	B+	AB-	AB+
Unknown	●							
O-	●							
O+	●	●						
A-	●		●					
A+	●	●	●	●				
B-	●				●			
B+	●	●			●	●		
AB-	●		●		●		●	
AB+	●	●	●	●	●	●	●	●

Platelets

ABO identical and RhD compatible platelets are usually preferred. All patients can safely receive O negative platelets. A woman of child-bearing age who is RhD negative may receive RhD positive platelets in an emergency situation but a haematologist should be consulted about RhD immunoglobulin treatment.

Patient's blood type	Donor's blood type							
	O-	O+	A-	A+	B-	B+	AB-	AB+
Unknown	●							
O-	●							
O+	●	●						
A-	●		●					
A+	●	●	●	●				
B-	●				●			
B+	●	●			●	●		
AB-	●		●		●		●	
AB+	●	●	●	●	●	●	●	●

Plasma components

Fresh frozen plasma, extended life plasma, cryodepleted plasma, cryoprecipitate

Plasma components should be compatible with the patient's ABO group. If this is not possible, plasma components are selected that are ABO compatible with the patient's red cells. All patients can receive AB plasma products safely. Plasma components of any RhD type can be given regardless of the RhD type of the patient. RhD negative women do not require RhD immunoglobulin.

Low titre products

Plasma components that have low titre anti-A and/or anti-B pose a lower risk of causing clinically significant haemolysis when transfusing ABO incompatible plasma components. Where Lifeblood testing indicates a low titre of anti-A and/or anti-B, the clinical plasma components have a modifier, "Low Anti-A/B", printed on the plasma pack label to enable selection of the components. The modifier will not be applied to group AB components as these donations do not have anti-A or anti-B.

Patient's ABO type	Donor's blood type						
	O low titre	O	A low titre	A+	B low titre	B+	AB
Unknown			●				●
O	●	●	●	●	●	●	●
A	●		●	●	●		●
B	●		●		●	●	●
AB	●		●		●		●

Further learning Q&A

1 What should you prime your IV line with prior to administering blood components?

A new standard blood administration set should be primed with normal saline or the blood component as per local policy. Priming with other solutions may interfere with the anticoagulant, additive or blood component.

2 Can a pump be used for all blood components?

Yes, provided the pump has been certified as safe to administer blood components. The pump must not damage the component and must have the correct IV giving set with an incorporated blood filter.

3 Can medications be given concurrently with a blood transfusion?

Medications should not be given concurrently in the same IV line as a blood component during transfusion.

4 How is bolus medication administered?

If medications need to be given through the IV line, the transfusion should be stopped, the line flushed with normal saline, medication administered, and the line flushed again with normal saline. The transfusion can recommence at this point. Alternatively a second IV access could be used.

5 When should a blood warmer be used?

Blood components may be warmed during, or just prior to transfusion, if clinically indicated. Only designated blood warming devices should be used and these must be operated strictly according to the manufacturer's instructions. A blood warmer can be used for:

- patients with clinically significant cold agglutinins
- patients receiving a rapid infusion, and
- infants undergoing an exchange transfusion.

6 Who can perform the pack check?

Check your local policy. This check must be performed at the bedside by two clinical staff, who are authorised by their professional regulatory body, appropriately trained and approved by their institution to check or administer blood. The person spiking the blood must be one of the people who undertook the independent blood and patient identity check.

It is the "spiker's" responsibility to assess if it is clinically appropriate for the patient to be transfused. If there is a delay or disruption, the checking procedure must be completed again from the beginning.

7 Why should non-urgent transfusions be avoided overnight?

If it is not an emergency situation, transfusions should be avoided overnight. Serious Hazards of Transfusion (SHOT) data from the UK shows that more adverse events occur if a transfusion is performed during the night. There are generally less staff on duty overnight, making it more difficult for the patient to be closely monitored and to recognise and manage transfusion reactions. The patient also experiences interrupted sleep.

8 Why is only one unit of blood released for use at a time for non-urgent transfusions?

This prevents unnecessary wastage. If more than one unit is released at a time, it may be sitting at room temperature for too long and have to be discarded. Warm blood is an ideal medium for bacterial growth.

9 Do you have to flush blood lines at the end of a transfusion? Why or why not?

It is not necessary to flush between packs if another component of the same type is to be administered. At the end of the transfusion, flushing with normal saline ensures the patient receives all of the intended product. However, individual circumstances should be taken into consideration – especially in cases involving neonates, paediatric patients or patients at risk of fluid overload.

10 What does turbidity and clumping look like in a cryoprecipitate pack?

Turbidity refers to cloudy-coloured fluid, and blood components should not have any clots or clumped materials.

Published in Australia by
Australian Red Cross Lifeblood
30 Currie Street Adelaide South Australia 5000 Australia

Last updated: **May 2020**

Australian governments fund Australian Red Cross Lifeblood to provide blood, blood products and services to the Australian community.

transfusion.com.au