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Safe Transfusion Practice

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Tuesday 31st May 2022

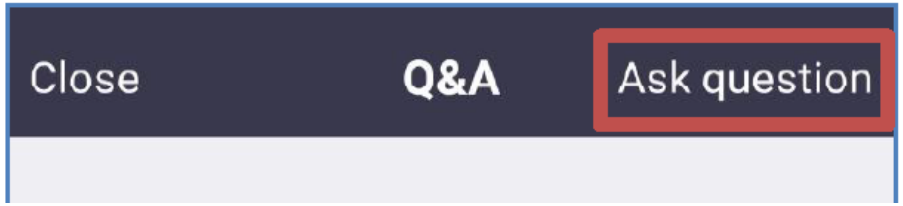
Webinar Etiquette

- Participants muted during presentation
- Questions will be at the end
- Presentation (15-20 min)
- Question time (5-10 min)
- Evaluation
- Webcast will be made available on BH website

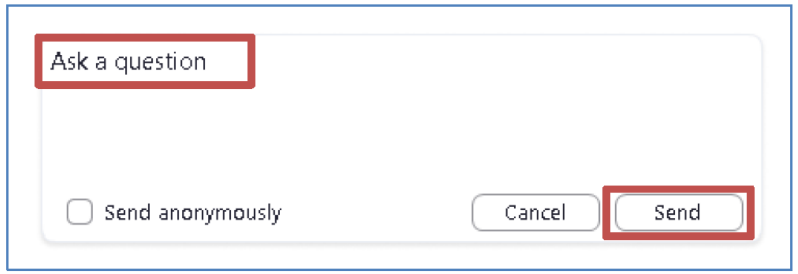
Asking a question

On a mobile device

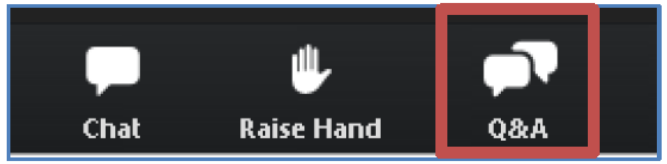
The following screen pops up select **Ask Question**



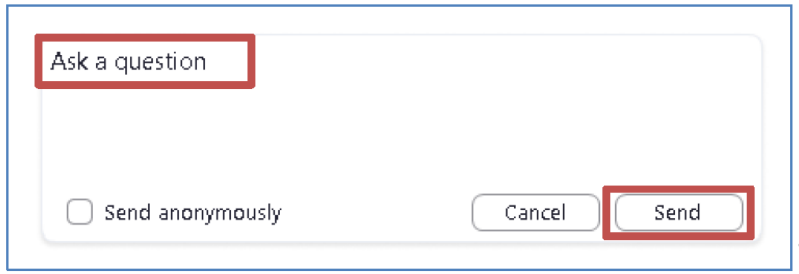
Type in your question and tap **Send**



On a laptop



- Zoom will open up a window. Enter your question in the text box



Acknowledgement of Country

In the spirit of reconciliation, we acknowledge the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples today.

Source: Commonwealth of Australia National Indigenous Australians Agency (2021) Welcome to Country or Acknowledgement of Country [online at] https://www.indigenous.gov.au/contact-us/welcome_acknowledgement-country

Key Objectives

- Correct patient identification,
- Blood banking sample collection & labelling,
- Informed consent,
- Blood component –
  - Who can receive which blood group?
  - storage & transportation,
  - patient & environmental (bedside) checks,
  - observations,
  - infusion rates & expected outcomes,
  - pretransfusion checking procedure,
  - documentation,
  - transfusion reactions (brief description) &
  - post transfusion care,
- Red Blood Cell (RBC) - 30 minute/ 4 hour rule.
- References.

Correct patient identification

- Essential that patient having blood sample be correctly identified,
- Identification must include positive patient identification processes and labelling of specimens in the presence of the patient,
- Patient should be ***asked to state*** their name in full and DOB, (for outpatient's ask them their current address),
- Do not ask patient yes or no questions, eg. "Are you Sally Smith?"
- If 'Inpatient', confirm details on ID nameband, including MR number.

Blood banking sample collection & labelling

- Blood Banking sample- check your local policy. Handwritten labelling of specimens is strongly recommended in the absence of a full electronic system that securely identifies the patient and prints labels 'on demand' at the bedside.
- ***Unlabelled samples*** must **NOT** leave the patient's bedside area,
- **For inpatients - No ID nameband insitu = NO SAMPLING!**

BLOOD BANKING SAMPLE MUST BE CORRECTLY LABELLED ACCORDING TO YOUR LOCAL POLICY (EG. HAND LABELLED), HAVE NO SPELLING MISTAKES AND CONTAIN THE FOLLOWING SIX IDENTIFIERS:

3 identifiers from patient –	*3 identifiers from the collector* -
• name-in-full (first name & surname), • date of birth, • hospital MR number (inpatients) or • current address (outpatients)	• signature/initials of collector, • time of collection, • date of collection.

If any of these 6 identifiers are missing or if there are any spelling mistakes, the sample *may not be processed*. Check your facilities policy. Is there a ZERO tolerance policy for incorrectly labelled blood banking specimens? If yes, the incorrectly labelled specimen will be discarded. Another fresh sample & request form may be required.

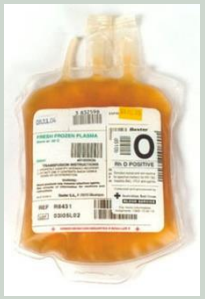
Informed consent

- Check your local policy, which blood components/blood products need consent.
- Informed Consent required for all transfusions that are not true emergencies (where consent is unable to be obtained).
- Informed Consent Policy - administration of blood products included in policy.
- Check which document used to document informed consent, at BH the - Consent for Blood Transfusion/ Blood Product Administration form is used
- Who can obtain consent? Medical staff, Nurse Practitioner (limited context).
- Is the patient competent, if not who can sign?
- Patient should be given information on the risks & benefits of transfusion,
- The consent may cover:
    - single transfusion incident,
    - duration of admission,
    - chronic transfusion needs-12 month duration.

Blood Components - Who can receive which Blood Group?

Blood Component	Patient Blood Group	Compatible Donor Group
Red Blood Cells *(must be group specific or group compatible)*	A	A,O
	B	B,O
	AB	AB,A,B, O
	O	O
Platelets *(ABO group specific is preferred but not required)* Note: Bendigo Health only stock A and O. If time permits, group specific platelets can be ordered.	A	A,O
	B	B,O
	AB	A,B,AB,O
	O	O
FFP (Fresh Frozen Plasma) *(should be group specific if available)* Note: The same ABO group as the patient should be transfused where possible, ***group AB FFP*** may be given as an alternative as group AB FFP is the ***Universal Donor*** group for plasma ***not*** group O.	A	A,AB
	B	B,AB
	AB	AB
	O	O,A,B,AB
Cryoprecipitate *Bendigo Health only stock A and O Cryoprecipitate*	A	A,O
	B	O,A
	AB	A,O
	O	O,A

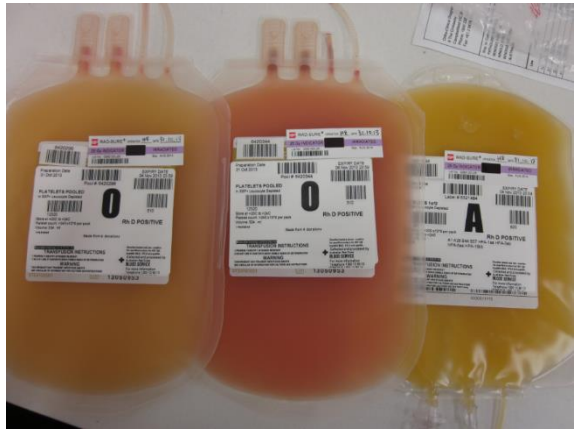
Blood components – Storage & Transportation

BLOOD COMPONENTS (FRESH - SUPPLIED IN BAGS)	
	Leucocyte depleted red blood cells (RBC). 42 day shelf life if stored at 2-6°C
	Leucocyte depleted and irradiated Platelets. 5 days shelf life. Stored at room temperature (20-24°C).
	FFP: 12 month storage if frozen, 5 days if thawed at 2-6°C (takes 20-30 minutes to thaw)

Blood components – Storage & Transportation cont.

- Red blood cells (RBC) are stored in designated, temperature controlled, regulated and monitored blood fridges. Check your local policy. Blood components may be stored in pathology department or a satellite blood fridge.
- Platelets: 20-24°C (gently agitated),
- FFP, frozen until required then thawed in a dedicated ‘bath’,

Blood Components are ***never*** to be stored in ward (domestic) fridges or freezers.



Blood components – patient & bedside (environmental) checks

- Patient check
  - Check patient for any rashes or skin discolouration which could later be confused as being caused by transfusion reaction,
  - Note/document if patient has any signs/symptoms of respiratory insufficiency.
- Environmental (bedside check)
  - Check bedside safety equipment prior to transfusion incase it may be required later (O^2, suction etc),
  - Ensure patient has functioning call bell within reach and knows how to use it.

Blood components – patient observations

PATIENT OBSERVATIONS:

- The nurse ***must*** remain with patient for the ***first 15 minutes*** of each blood component transfusion (most serious transfusion reactions occur in the first 15 minutes of a transfusion commencing).
- Patients receiving blood components should be able to be easily observed and assessed throughout the transfusion.
  T, P, R & BP ***must*** be recorded for all patients receiving blood components as follows:
    - prior to commencing transfusion (baseline observations may be obtained up to one hour prior to the transfusion commencing),
    - 15 minutes post commencement of each unit of blood / blood component,
    - hourly T, P, R & BP (+ SaO^2 if available),
    - at completion of each transfusion episode,
    - post transfusion, 4/24 observations, minimum, for 24 hours.
- Further observations and assessments are required if patient becomes:
    - unwell or shows signs of a reaction,
    - the underlying condition requires more frequent observations.

Blood components – Infusion rates & expected outcomes

Fresh Blood Component	Start Infusion	Recommended Infusion Time per unit	Expected Key Indicator increase per unit transfused
Red Blood Cells (RBCs)	Within **30 minutes** of leaving blood fridge	1 - 3 hours/unit, up to a maximum of 4 hours/unit. For patients at risk of circulatory overload e.g. cardiac failure, it may be necessary to transfuse over the slower rates of 3-4 hour/unit, with frequent monitoring. Concomitant use of diuretics should also be considered. Patients should be assessed between units.	Expected **Haemoglobin** level increase for average sized adult approx **10g/L per unit** transfused.
Platelets (apheresis & pooled)	Within 60 minutes of leaving blood bank	15 - 30 minutes per unit.	Expected increase in **platelet count** per unit transfused (apheresis or pooled) for a 70kg adult approx **20-40 x 10^9/L.**
Fresh Frozen Plasma (FFP)	Within 30 minutes of leaving blood fridge	30 minutes per unit (i.e. 10-20ml/kg/hr).	NA
Cryoprecipitate	Within 30 minutes of leaving blood fridge	30 minutes per unit (i.e. 10-20ml/kg/hr).	NA

Note: Patients with acute bleeding or who are in hypovolemic shock require blood components to be transfused rapidly. The use of a blood warmer is recommended in critical bleeding / massive transfusion situations. **Maximum infusion time for all Blood Components- 4 hours.**

Blood components – pretransfusion checking procedure

CHECK	HOW?
Patient	Ask patient to **tell you** their name & DOB. Confirm details on hospital issued nameband (3 x identifiers).
Cross Matching Compatibility Report/ Transfusion Record (paperwork that accompanies the blood component)	Patient details (3 x identifiers), blood component (red blood cells (RBCs), platelets etc), unit number, blood group of donated unit, patient's blood group
Prescription / IV Record	Patient details (3 x identifiers), blood component type ordered, rate, date to be transfused- note any meds also ordered eg. lasix.
Label on Blood Bag	Blood component type (RBCs, platelets etc) & blood group of donated unit, unit number, expiry date
Luggage Tag attached to Blood Bag or label attached to blood bag by pathology provider (blood bank)	Patient details (3 x identifiers), blood component type (RBCs, platelets etc) & blood group of donated unit, unit number
IV Pump, IV blood administration giving set and priming of IV line	Check rate on pump, volume to be infused (volume on blood bag). Giving set must have inline filter (170-220 micron). ***Note***: it is not necessary to prime the blood administration set with anything other than the blood component, although the blood administration set may be primed with 0.9% sodium chloride

Blood components – pretransfusion checking procedure cont.

- Two members of staff must undertake the identity check of the patient and blood product at the patient's side immediately before administration. Each of these two staff is responsible for the accuracy of the checking procedure. Each person must complete ***all the checks independently*** (a process referred to as 'double independent checking').
- The two staff members carrying out the check ***must both*** sign the relevant documentation confirming that the patient and component check has occurred, and is correct and compatible.
- The person spiking or hanging the blood component must be authorised and appropriately trained by their hospital to spike or hang the component, and ***must be one of the two staff members who have independently undertaken the blood and patient identity check***. The unit should not be spiked until the identity check of patient and blood component is complete. The unit must be spiked and the transfusion started immediately after the check has been completed. If there is a delay, ***the checking process must be repeated***.

Blood components – documentation

- **Cross Matching Compatibility Report / Transfusion Record:**
  - signatures of both staff members checking the unit to the patient,
  - time & date of commencement must be documented.
- **Blood Component prescription – eg. IV Record**
  - initials of the two staff members,
  - time/date of commencement & completion time,
- **Observation Record:**
  - document commencement time,
  - minimum transfusion observations (T, P, R, BP +/-SpO_2).
- **Progress Notes / Clinical Notes:**
  - document blood component given, including time etc,
  - medical review between units,
  - note if there were/were not any issues encountered.

Blood components – Transfusion Reactions

Transfusion Reaction Chart – Recognise, React and Report.

Recognise	React		Report	
Signs & Symptoms	**Immediate Management if adverse transfusion event is suspected**	**Further Management**	**Possible Cause**	**Reporting**
Mild Isolated temperature rise of 1 °C to less than 1.5°Cabove baseline without any signs of a serious reaction ***or*** Localised rash/puritis ***and*** Vital signs are stable	– **STOP the transfusion,** – maintain IV access – monitor and record the patient's temperature, pulse, respirations and blood pressure – repeat all documentation and identity checks of the patient and blood pack – contact medical staff immediately for further management and investigation.	If the temperature rise is less than 1.5 °C above baseline or the patient has only localised rash or pruritus, the patient observations are stable and the patient is otherwise well, an antipyretic or antihistamine may be administered at the discretion of the physician. The transfusion may then be continued with caution and close observation. If signs or symptoms persist or redevelop, or the patient's condition subsequently deteriorates, the transfusion should be **stopped** and managed as for a moderate to severe adverse transfusion event (see Section 8.1.2).	**Non-haemolytic febrile** **Mild allergic reaction**	**Initially** 1. Report incident to Blood Bank (if not already notified), 2. Fill out Transfusion Reaction Form (available on PROMPT) and send to Blood Bank together with any requested samples (blood &/or urine), 3. Notify supervisor (after hours manager) **When patient stable** 4. Document transfusion reaction in patient's medical record, state what type of reaction, i.e. Blood reaction – anaphylactic, 5. Report Transfusion Reaction on VHIMS incident database.
Moderate to Severe • temperature of 1.5 °C or more above baseline • hypotension, shock or hypertension • tachycardia • tachypnoea, wheeze or stridor • rigors or chills • nausea or vomiting • pain (localised, chest, flank or discomfort at infusion site).	• **STOP the transfusion immediately and seek urgent medical advice**; follow the health-care facility's clinical deterioration escalation procedures • maintain venous access using a new administration set and 0.9% sodium chloride (normal saline), but do not discard the blood administration set and do not flush the original line • repeat all documentation and identity checks of the patient and blood pack • immediately report the event to the transfusion service provider, who will advise on return of the implicated product and administration set, and any further blood or urine samples needed from the patient • monitor and record the patient's temperature, pulse, respirations and blood pressure • record the volume and colour of any urine passed (looking for evidence of haemoglobinuria).	Further management, including subsequent transfusion, will depend on the type and severity of the event and the results of associated investigations. Further transfusions should not be started without the advice or consent of the transfusion service provider, transfusion medicine specialist or consultant haematologist, in consultation with the managing clinician. The additional resources given in Section 8.1.3 provide examples of adverse transfusion events and their management. It is strongly advised that these references be made available in clinical areas, together with tools to assist recognition and response to adverse transfusion events. **Original blood administration set (IV line)** 1. Remove sharps, tie or spigot off the line and place blood bag with attached line into a zip-locked plastic bag and seal. 2. Return blood bag and line to the Blood Bank ASAP.	**Allergic reaction** **Anaphylactic** **Acute Haemolytic reaction (incompatible blood)** **Septic shock (bacterial contamination)** **Transfusion associated cardiac overload (TACO)** **Transfusion related acute lung injury (TRALI)**	

Bendigo Health 2021. Reference: Australian and New Zealand Society of Blood Transfusion Ltd and Australian College of Nursing Australia, Guidelines for the Administration of Blood Products 3rd Edition, January 2018. Revised October 2019.

Blood components – Post Transfusion Care

- Inpatients should be observed for delayed reactions over the next 24 hours,
- Day patients should be advised to report symptoms developing after discharge. An information handout should also be given to patients transfused and then discharged home. See example below:

After the Transfusion

Information for patients who have received a blood component transfusion and are then discharged home.

Some things to look out for after receiving a blood component transfusion:

- Feeling nauseated or unwell,
- Difficulty breathing,
- Pain anywhere in your body,
- Feeling light-headed or vague,
- Headache,
- A rash appearing, itchy skin,
- Feeling very hot or feverish,
- Chest pain.

If you believe that you may be experiencing a delayed transfusion reaction please call:

1. Your own GP or treating doctor (during business hours).
2. Nearest hospital's emergency department. For Bendigo Health call 5454 6000 and ask to be transferred to the emergency department.
3. If you are feeling quite unwell contact the Ambulance by calling 000.

Remember that blood component transfusion reactions are very uncommon.

Further information:

The following brochures are also available:

- *'Blood Transfusion - Answers to some common questions for you and your family'* and
- *'Blood, who needs it?'*.

Please ask your nurse if you would like a copy of either of these brochures.

Fresh Blood components are provided by the Australian Red Cross Life Blood under the National Blood Agreement, funded by the Commonwealth and state governments.
Bendigo Health Blood Management Committee. mj/MJ June 2022.

Red Blood Cell (RBC) 30 minute / 4 hour rule

- The 30-minute rule states that red blood cell (RBC) units left out of controlled temperature storage for more than 30 minutes should not be returned to storage for reissue; the 4-hour rule states that **transfusion of RBC units should be completed within 4 hours of their removal from controlled temperature storage (blood fridge).**

References

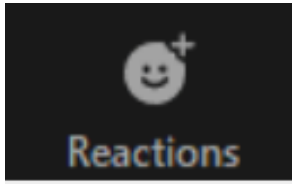
- National Blood Authority- Patient Blood Management Guidelines:
  - Module 1: Critical Bleeding Massive Transfusion,
  - Module 2: Perioperative,
  - Module 3: Medical.
  - Module 4: Critical Care,
  - Module 5: Obstetrics & Maternity.
  - Module 6: Neonatal & Paediatrics.

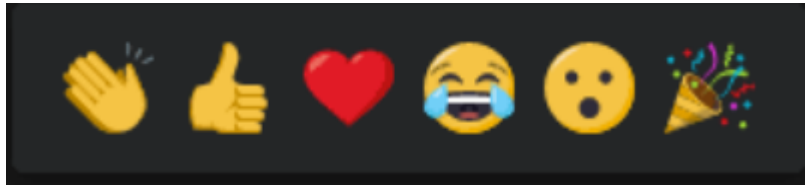
    www.blood.gov.au www.blood.gov.au/pbm-guidelines

- Australian & New Zealand Society of Blood Transfusion (ANZSBT) Guidelines
  - **Guidelines for the Administration of Blood Products** 3rd Edition January 2018 Revised October 2019
  - **Guidelines for Transfusion and Immunohaematology Laboratory Practice** Revised 1st edition - January 2020 Originally released November 2016
- Australian Red Cross Lifeblood – Health Professionals:
  - Blood Book – Australian Blood Administration handbook. First edition, March 2020

Questions and Answers

- Zoom reactions



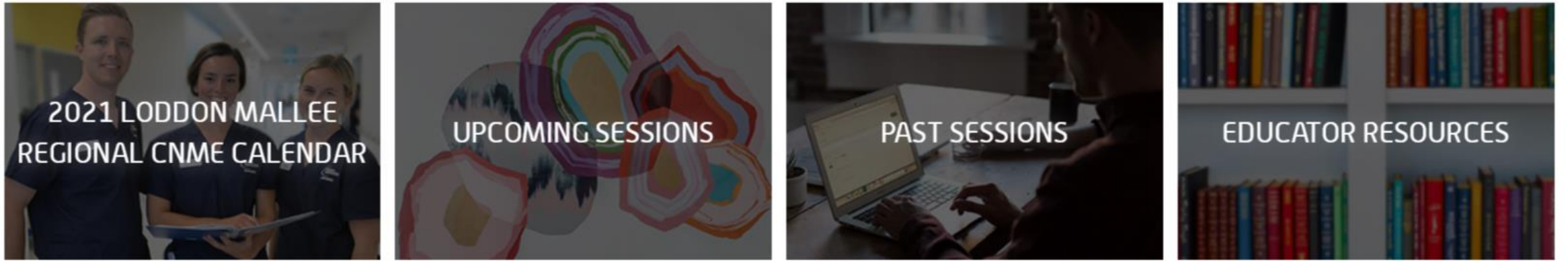


- Chat function

- State your name, your title/role and where you work

Nursing and Midwifery Education webpage

- https://bendigohealth.org.au/landing/3547



Evaluation