

# The Good Stuff at Last!

## Introduction to out of hospital administration of blood products

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Exercise #1: What is in blood? Discuss amongst the two or three people sitting near you.

Exercise #1 Working space:

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### WHAT'S IN WHOLE BLOOD?

Component	Purpose

Whole blood is not used for transfusion any more

### FRACTIONATED BLOOD COMPONENTS:

#### FRESH FROZEN PLASMA

- \_\_\_\_\_ and \_\_\_\_\_ are removed
- Plasma quick-frozen retain factors \_\_\_\_\_
- 1 unit is approx \_\_\_\_\_ volume
- Used to treat fatal clotting disorder from:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

CRYOPRECIPITATE

- Prepared from \_\_\_\_\_
- Each unit \_\_\_\_\_ in volume
- Contains:
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
- Uses:
  - Hemophilia \_\_\_\_ or \_\_\_\_\_ disease
  - Low \_\_\_\_\_ levels (massive transfusion)
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_

PLATELETS:

- \_\_\_\_ units of platelets increases platelet count by \_\_\_\_\_ (normal is \_\_\_\_\_)
- Uses:
  - Administration depends on \_\_\_\_\_ and \_\_\_\_\_
  - \_\_\_\_\_
  - May not be helpful in conditions that cause \_\_\_\_\_

PACKED RBCs:

- \_\_\_\_ unit PRBC raises Hemoglobin by \_\_\_\_ gm/dl (normal 13 – 15 gm/dl)
- \_\_\_\_ unit = \_\_\_\_ ml
- Used for:
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_ which is defined as \_\_\_\_\_
  - \_\_\_\_\_

Exercise #2: Blood is grouped into four main groups, A, B, AB, and O with each having a + or – Rh Factor (e.g. A+, A-, B+, B-, etc) What blood can a patient who has AB blood receive? What blood can a patient with type O receive? What blood can a patient who has type A receive? Discuss amongst the two or three people sitting near you.

Exercise #2 Working space:

BLOOD GROUPS AND COMPATIBILITY:

- RBC's have many \_\_\_\_\_ that can cause an \_\_\_\_\_ reaction when exposed to a different blood type
  - The main type proteins are called \_\_\_\_\_ and \_\_\_\_\_ proteins
  - \_\_\_\_\_ proteins are either + or –
- The immunological reaction of receiver against donor blood of wrong type causes:
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
- The major RBC types are:
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
- Rh Factor is \_\_\_\_\_ and is either \_\_\_\_\_ or \_\_\_\_\_.
- Blood types are made up of RBC protein and Rh combination, yielding 8 major blood types
- There are other proteins on RBCs that can cause immunological reactions with about \_\_\_\_\_ different blood grouping systems

COMMON DEFINITIONS RELATED TO BLOOD PRODUCTS:

- Uncross-matched Blood: \_\_\_\_\_
- Type Specific Blood: \_\_\_\_\_
- Cross-matching: \_\_\_\_\_
- Type and Crossed: \_\_\_\_\_

So who can receive what blood?

- Type A can receive: \_\_\_\_\_
- Type B can receive: \_\_\_\_\_
- Type AB can receive: \_\_\_\_\_
- Type O can receive: \_\_\_\_\_
- Rh + can receive: \_\_\_\_\_
- Rh – can receive: \_\_\_\_\_

INDICATIONS FOR TRANSFUSION:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

- \_\_\_\_\_
- \_\_\_\_\_

SAFETY OF TRANSFUSIONS:

- All donated blood is tested for many infectious diseases. The risk of disease transmission is low.

**Transfusion Reactions:**

TRANSFUSION ASSOCIATED CIRCULATORY OVERLOAD (TACO):

- The volume of 1 unit RBC + saline = \_\_\_\_\_ ml
- \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
- Prevent TACO by \_\_\_\_\_

ALLERGIC TRANSFUSION REACTIONS:

- Reactions can range from \_\_\_\_\_
- Signs / symptoms:
  - \_\_\_\_\_
  - \_\_\_\_\_
  - Fever is \_\_\_\_\_.
- \_\_\_\_\_
- May require \_\_\_\_\_

FEBRILE NON-HEMOLYTIC REACTION:

- Temp increase by \_\_\_\_ C within \_\_\_\_ hrs of starting the transfusion
- Signs and Symptoms include: \_\_\_\_\_
- Resolves spontaneously or with antipyretics
- May need to stop transfusion

ACUTE HEMOLYTIC REACTION:

- **10 % of ABO incompatibility fatal!**
- Signs / Symptoms:
  - \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_

BACTERIAL CONTAMINATION:

- 1/15,000 platelet & 1/500,000 RBC
- Signs and symptoms of sepsis:
  - \_\_\_\_\_

- \_\_\_\_\_
- \_\_\_\_\_

**TRANSFUSION RELATED ACUTE LUNG INJURY (TRALI):**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**MANAGEMENT OF TRANSFUSION REACTIONS:**

1. **Stop transfusion!**
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_ and \_\_\_\_\_ IV for allergic reactions
7. \_\_\_\_\_ IM for anaphylactic reactions
8. \_\_\_\_\_
9. \_\_\_\_\_ for TRALI
10. \_\_\_\_\_ IV for volume overload

Exercise #3: You are receiving a patient for transfer who has an acute GI bleed and his hemoglobin was 3.2 (normal 13-15). You are given several units of blood products for the hour long transfer. What do you need to check before initiating transfer? Discuss amongst the two or three people sitting near you.

Exercise #3 Working space:

**PROCEDURE & DOCUMENTATION:**

**IMPORTANT STEPS OF TRANSFUSION:**

- Verify patient \_\_\_\_\_
- Verify patient \_\_\_\_\_
- Verify \_\_\_\_\_
- Baseline \_\_\_\_\_
- Verify For All Units
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_

**Make Sure Donor Unit Number & Patient Information Match!**

- Administration Sets: The \_\_\_\_\_ set is preferred over a \_\_\_\_\_ set
- Vital Signs
  - Include \_\_\_\_\_
  - \_\_\_\_\_
  - Every \_\_\_\_\_ minutes
  - \_\_\_\_\_

AFTER THE TRANSFER:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

TIME OF TRANSFUSION:

- Packed RBC's - \_\_\_\_\_
- FFP - \_\_\_\_\_
- Platelets - \_\_\_\_\_
- Cryoprecipitate - \_\_\_\_\_

HOW MUCH?

Based on severity of illness

Adult:

- \_\_\_\_\_
- Maintain SBP > \_\_\_\_\_ mmHg

Pediatrics

- \_\_\_\_\_
- Maintain \_\_\_\_\_
- Infuse \_\_\_\_\_ ml/kg doses

**Refer to orders!**

BLOOD STORAGE:

- Store at \_\_\_\_\_ °C
- \_\_\_\_\_ shelf life at room temperature
- \_\_\_\_\_

# One Minute Evaluation

Session: Good Stuff: EMS Blood Products

Date: October 2009

**Please complete and place face down on the table by the door.**

List 2 – 3 core ideas that have emerged for you as important during the session:

1.

2.

3.

List 2 – 3 questions that have surfaced for you relevant to the content presented. Were they answered during the session?

1.

2.

3.

List 2 – 3 things the presenter(s) did well during the session:

1.

2.

3.

List 2 – 3 things that could be improved about the session:

1.

2.

3.

**THANK YOU!**