

BLOOD SAFETY MEASURES

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Introduction

Blood Safety in BTS starts from

- ▣ Blood Donor
- ▣ Pre donation screening and Questionnaires
- ▣ Blood Collection
- ▣ Blood Processing
- ▣ Blood Testing
- ▣ Blood Storage
- ▣ Blood Issue and Blood Transfusion
- ▣ Disposal of Blood

- Selection of Donor

- Voluntary Donor: Non- numerative voluntary donor preferably regular repeat donor.
- Free from all disease
- Healthy donor between the age of 18-60 years, Hb more than 12.5 gm. %
- Interval between two donation should be more than 3 months.
- Consent for donation and for screening for TTI.

Phlebotomy

- Single neat needle prick
- Aseptic precautions while preparing for phlebotomy
- Adequate volume according to capacity of Blood
- Proper and regular mixing of blood with the anticoagulant.
- Proper data entry either in the computer or in the donor record register



Blood Processing

- Proper labeling of product.
- Proper techniques to prepare components
- Standard Operative Procedure to be followed.
- All equipments required must be calibrated at regular interval.
- All standard precautions must be followed in the component lab.
- Proper data entry either in the computer or in the donor record register
- Maintenance of proper temperature



Blood Testing

- Each and every unit of blood needs to be tested for HIV I&II, Hepatitis B, Hepatitis C, Syphilis and Malaria by appropriate technology.
- The diagnostic kits must be from the authorized supplier with good sensitivity and specificity.
- ELISA IV
- Nucleic Acid Amplification (NAT) screening
- Universal precautions must be followed.



Blood Storage

Name of Blood component.	Storage conditions.	Self Life
Whole Blood	2-8 degree in BBR with temp. recording	CPDA 35 days CPDA with 42 days
RCC	Same	Same
FFP	-30 degree and below	One year
Plasma	-30 degree and below	One year
Cryoprecipitate	-30 degree and below	One year
Platelet Concentrate	22-24 degree with agitation	5-7 days





Safe Blood Transfusion

Precautions at various step of
Blood Transfusion

Precautions to be taken at

- Collection of specimens
- Labeling of specimens
- Procedure for requesting Blood & Blood Products.
- Checking the identification of the recipient before transfusion
- Transfusion of Blood
- Blood Warming

COLLECTION OF SPECIMENS

- ▣ Collection and labeling of specimens for blood grouping is responsibility of Medical Officer in charge of the patient.
- ▣ Responsibility must **Never** be delegated to Nurse or Medical Student / Resident / Interns etc.

▣ LABELLING

- ▣ Pre Labeling of Sample containers or the pre signing of a number of request form is highly dangerous procedure.

LABELLING

- ▣ The identity of the patient must be accurately checked.
- ▣ If the patient is unconscious, this should be done against the identification particulars in the case record or the identity band
- ▣ Another member of the ward staff should confirmed the identity details of the pts.

PROCEDURE FOR REQUESTING FOR BLOOD & BLOOD PRODUCTS

- A Legible written Blood Request Form has to accompany the Blood Sample.
- The request form must include Name in complete including surname, Date of Birth, Sex, Ward, Hospital Name, CR. No., etc.

- ▣ The BRF must include the type of blood & Blood Component required for transfusion.
- ▣ Must include the details of previous transfusions and obstetrics history in case of female patients The relevant laboratory investigations like, Hb., PC. PT/PTTK etc. must be written.
- ▣ The BRF must bear the legible signature of Medical Officer with his rubber stamp.

Checking the identification of the patient before Transfusion:

- ▣ Check the identity of blood and the recipients.
- ▣ Label on the cross match slip, on the blood bags and the patients record must be checked for name, age , Sex date of birth, CR No., ward, Blood Group, Blood unit No. and expiry date

- ▣ The cross match slip must be signed by the doctor or the Nurse who has checked the details.
- ▣ The C/M slip then should be remain attached with the blood unit for the duration of transfusion.
- ▣ Thereafter C/M slip must be placed in the case record along with the details of transfusion.

Blood Warming

- Blood warming is necessary in massive transfusions.
- No warmer is required in Indian climatic conditions.
- Only thermostatically controlled blood warmer should be used.
- No other means should be used for warming.

TRANSFUSION REACTION:

- ▣ The blood bank should be notified with all transfusion reactions and should be investigated.
- ▣ Send 5.0 ml. Of fresh clotted sample, 2.0 ml. EDTA sample and freshly taken urine sample of the recipient along with the details of the transfusion reaction and remains of blood bags for investigation.

ADVERSE EFFECTS OF BLOOD TRANSFUSION

IMMEDIATE:

- ▣ Febrile reaction- Anti leucocytes antibodies
- ▣ Allergic reaction (Urticaria)-Plasma proteins
- ▣ Acute i/v hemolytic- ABO incompatibility
- ▣ Pulmonary edema -CHF- Excessive rate of transfusion, HLA mediated injury to lung
- ▣ Hypothermia- Rapid rate, immediately from the refrigerator.
- ▣ Citrate Toxicity, Potassium effect.
- ▣ Infective shock.

ADVERSE EFFECTS OF BLOOD TRANSFUSION

DELAYED AND LONG TERM SIDE EFFECT

- ▣ Delayed hemolytic-Red cell antibody, Kidd, Kell, Duffy etc.
- ▣ Allo-immunization- common red cell antibody
- ▣ Graft Versus host reaction
- ▣ Iron accumulation
- ▣ Infectious disease transmission- HIV, Hep B. Hep C. Malaria. HTLV, CMV.

DISPOSAL OF BLOOD

- Needles and sharp to be disposed of in a disposable punctured proof container.
- Plastic material to be disposed of by shredding and deep burial.
- Uninfected blood to be disposed by shredding & deep burial.
- Infected blood to be autoclaved and shredding and deep burial.

Disposal of Blood

- All Hospitals/Nursing homes must have valid contract with the Biomedical waste disposal agency.
- Should maintained proper written record of all disposal units.
- Record should be available at the time of inspection.
- To avoid misuse of infected blood.

THANKS

DONATE BLOOD



&

KEEP YOUR
HEART HEALTHY

Thank you