**Model SOP**

**Standard Operating Procedure**

**Name of the facility / activity : Preservation of Blood and Blood Components**

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| **SOP no.**  | **Effective Date** | **Pages** | **Prepared by**  | **Authorised by**  |
| 5.2 | 27-11-2000 | 3 |  |  |
| **Version** | **Review Period** | **Date of Review** | **Reviewed by** | **Number of copies** |
| VI | 2 years | 01-01-2015 |  | 10 |
| **LOCATION** : Storage Area |
| **SUBJECT** : Preservation of Blood and Blood Components |
| **FUNCTION** : Optimum storage of Blood and Blood Components |
| **DISTRIBUTION**: Supervisor in charge of Storage & Distribution Master File |

1. **SCOPE & APPLICATION:**

Blood components prepared are stored in conditions designed to preserve optimal viability and function during the storage period. (Table 1)

1. **RESPONSIBILITY:**

It is the responsibility of the technical staff from the component laboratory to keep the units in the quarantine storage. The technologist who labels the units after the testing is responsible to transfer the labelled units in their respective storage areas.

1. **MATERIALS REQUIRED:**

Storage Equipment

* Blood bank Refrigerator
* Deep Freezer
* Platelet incubator
* Platelet agitator
1. **PROCEDURE:**
* All untested units should be kept in the quarantine area in the DESIGNATED UNSCREENED storage areas.
* After testing is over, release the fully tested. Transfer those deemed suitable for clinical use from quarantine area to the stock area after labelling. (Refer table No. 1).
* Label those found unsuitable for use with a biohazard label and keep for disposal.
* Store whole blood and Red Cell concentrates on metal rack stand in the Blood Bank Refrigerator in the serology lab designated for screened PRBC units (4 – 60 C). Each shelf is reserved for a particular group having its label stuck on the outer side. Arrange the blood bags in chronological order, group wise and according to the expiry dates in trays with oldest first. This makes it very easy for the technologists on duty to remove the bags for issuing, whenever required.
* Store blood collected in CPD-A1 and the red cells separated in a closed system up to 35 days. Store the red cells suspended in additive solutions up to 42 days. Use red cells prepared in open system within 24 hours of preparation.
* Keep Fresh Frozen Plasma, cryoprecipitate and FVIII deficient plasma bags in over wrap bags and then arrange in plastic trays in the Deep Freezer (-400C) immediately after separation. The shelf life of all these plasma components is 1 year. FFP once thawed and then refrozen is used only as FVIII deficient plasma.
* Place Random donor platelets (RDP), Single Donor Platelets (SDP) in a platelet incubator at 20 – 220 C on an agitator which has shelves to store them. Store the concentrates prepared in PVC bags up to 5 days and those prepared in special platelet apheresis bags up to 7 days.
* Take due care to maintain sterility of all components by keeping all storage areas clean.
* Monitor to ensure the storage conditions to be appropriate and correct for each product. Monitor the temperature of all storage areas with continuous graphic recorder. Change the charts every week, and achieve them. Check the alarm system every month.
* Similarly, after labelling the plasma bags enter the unit numbers group wise in the stock register. Make FFP entries on the right hand page of the stock register, whereas Factor VIII-D plasma & Cryo units on the left hand page. Carry out physical stock taking every morning and rewrite the inventory.

**Table 1**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PRODUCT** | **PRBC** | **FFP** | **CPP** | **PLATELETS** | **CRYO** |
| StorageTemperature | 2-60 C  | -300 C To -800 C | -300 C | 220C withgentleagitation | -300C |
| Shelf life | 35 days42 dayswithadditivesolution“SAGM | 1 Year | 5-7 daysaccording tobag in use | 1 Year | 1 Year |

PRBC = Packed Red Blood Cells. FFP= Fresh Frozen Plasma. CPP = Cryopoor plasma. Cryo= Cryoprecipitate

1. **DOCUMENTATION:**

Record all blood/components released for use in stock register, master record as well as the unsuitable units to be discarded in the disposal register.

1. **REFERENCES:**
2. Technical Manual of American Association of Blood Banks – 15th Edition, 2005.
3. Introduction to Transfusion Medicine, Zarin Bharucha & D.M. Chauhan, 1ST Edition, 1990.
4. **END OF DOCUMENT**