

# Manufacturing of Blood Products

**Caring Expert Quality** 



#### Aims

- To give an overview of the processing of blood products and the different processes involved before it leaves NHSBT
- Describe the different products produced



### **Most vital part!**







### **Precious donation**

- Aim to make the most from each donation
- Turn a single donation into:
  - Red cells
  - Plasma product
  - Platelets



## **Receipt into Manufacturing**

- Approximately 22 component donations and 800 whole blood donations each day.
- 7 days a week
- Receive whole blood donations in the afternoon or evening of day 0 and then again at 05:30 on day 1
- Apheresis donations received on evening of day 0.
- The Apheresis platelets can be made into single, double or triple product depending on volume
  - Aim for equal amounts in each pack
  - End up with approx 40 to 60 separate products
  - All products are QM to ensure process is in control and products meet specification checking for:
    - Platelet count
    - White cell count
    - Volume
    - Hct
    - Protein levels
    - FVIII level



## **Bacterial Screening**

- Minimum 36 hours after donation
- All apheresis and pooled platelets are tested
- Sampled for Aerobic and Anaerobic organisms
- Incubated for life of products
- Platelets labelled and stored in platelet agitator
- Mandatory test
- Negative result necessary for release to Validation



## Whole blood processing

- Whole blood collection are collected 6 days a week
- Collected from a large area
- Approximately 700 donations
- Aim to make as many products as possible from each donation
- Red cells, Fresh frozen plasma, cryoprecipitate and platelet pools
- Donations sorted into bag types, the final product and the time of venepunture
- Can be processed on day of bleed or stored over night at ambient temperature
- Strict timelines for each product



### Whole blood processing

- The whole blood is mixed and hung up to filter.
- Filtration removed the white cells and platelets from a donation
- Takes approximately 40 minutes to filter
- Centrifuged
- Separation of red cells and plasma



#### **Separation**

- Processed on optipress
- Plasma removed into separate transfer pack and may become FFP or Cryoprecipitate
- SAGM added to red cells, remove the air and create a crossmatch line.
- · Products are then weighed and labelled
- Plasma for FFP or plasma to be made into cryoprecipitate is then frozen
- The plasma for cryoprecipitate has to be defrosted slowly overnight
- The cryo precipitates out of the plasma
- Centrifuged
- Removal of waste plasma
- Re-frozen as a cryo single
- Defrost in plasma thawer
- Pool



### **Secondary processing**

- Other products made on request
  - PAS platelets
  - Washed red cells
  - Neonatal red cell or platelet splits
  - Red cells for exchange or IUT

### **Hospital Services**

- All products are validated
- Checks that all mandatory testing is completed
- Label produced
- Store the individual products
- Orders sent in from the hospital via OBOS
- Staff issue the products to that hospital completing the audit trail for that donation.
- Blood delivered to the hospital