

Name of Block	1
Name of Elective	Blood component preparation and quality assurance
Location of hospital Lab or research facility	Department of Immunohaematology & Blood Transfusion
Name of internal preceptor (s)	Dr. Rajesh Kumar
Name of external preceptor (if applicable)	-
Learning objectives of elective	1. Understand Blood Components • Describe different blood components (PRBC, Platelet Concentrate, FFP, Cryoprecipitate). • Explain indications and clinical uses of each component. 2. Component Preparation • Understand principles of component separation from whole blood. • Observe and assist in centrifugation, plasma expression, and component preparation. 3. Equipment & Consumables • Identify equipment used in component preparation (centrifuge, plasma extractor, agitator, sealers). • Understand use of blood bags, filters, and storage accessories. 4. Storage & Inventory Management • Understand storage temperature requirements and shelf life of components. • Learn stock management, FIFO practice, and labeling requirements. 5. Quality Control • Understand quality parameters of blood components. • Assist in sampling and testing for QC (volume, hematocrit, platelet count, factor levels). 6. Documentation & Traceability • Maintain component preparation records and logs. • Understand traceability from donor to recipient. 7. Discard & Waste Management • Identify reasons for discard of blood/components. • Follow procedures for safe disposal and documentation.
Number of students that can be accommodated in this elective	4
Pre-requisites for elective	Knowledge of I. Internet browsing
Learning resources for students	a. Blood Bank manual b. Standard operative procedure

	c. Drug and Cosmetic Act 2022. d. Technical Manual by DGHS 2024. e. Standard of Blood Banks by NBTC.
List of activities of student participation	1. Orientation & Familiarization • Orientation to blood component lab layout and workflow • Familiarization with SOPs and safety guidelines • Identification of blood components and labeling system 2. Whole Blood Handling • Receiving whole blood units from donation room • Verification of donor details and unit identification • Inspection of blood bags for leaks, clots, or contamination 3. Component Preparation • Assisting in centrifugation of whole blood • Understanding light and heavy spin techniques • Assisting in plasma expression using plasma extractor • Separation of: ◦ Packed Red Blood Cells (PRBC) ◦ Platelet Concentrate (PC) ◦ Fresh Frozen Plasma (FFP) ◦ Cryoprecipitate 4. Equipment Handling • Operation (under supervision) of: ◦ Refrigerated centrifuge ◦ Plasma extractor ◦ Tube sealer ◦ Platelet agitator • Cleaning and maintenance of equipment • Recording temperature and equipment logs 5. Labeling & Documentation • Proper labeling of blood components • Entry of component details in registers / HIS • Maintaining traceability records 6. Storage & Inventory Management • Storage of components at appropriate temperatures • Understanding shelf life of each component • FIFO (First-In-First-Out) stock management • Monitoring refrigerator, freezer, and agitator temperatures 7. Quality Control Activities • Assisting in QC sampling of blood components • Performing QC tests (volume, hematocrit, platelet count, plasma volume) • Recording and reviewing QC results

	8. Component Modification (Observation) • Observing leukoreduction and irradiation procedures • Understanding washing and special component preparation 9. Discard & Waste Management • Identification of expired, reactive, or damaged units • Proper discard procedure and documentation • Biomedical waste segregation
Portfolio entries required	No
Log book entry required	Satisfactory, completion of manuscript with "M" grade
Assessment	a. Attendance b. Log book entry c. MCQs d. Inter active presentation
Other comments	