Blood Bank Facility

Donor recruitment, collection, component processing, testing, storage and traceable distribution in one controlled service.

Preliminary engineering range; excludes land, finance cost, taxes and import duty. Final scope and price are confirmed at the feasibility gate.

- Indicative CAPEX: USD 1.2–6M
- Delivery: 8–14 months to operational qualification and supervised service launch.
- Capacity: Tier 1: 20,000–60,000 donations/year; Tier 2: 100,000–250,000/year; operating days and collection network dependent.

Process flow

Preliminary basis for zoning, equipment and validation.

- Donor registration, screening and phlebotomy
- Component separation and expression
- Infectious-disease and immunohaematology testing
- Quarantine and controlled release
- Temperature-controlled component storage
- Traceable issue, transport and haemovigilance

Facility & clean environment

500–2,200 m² gross with segregated donor, processing, testing, quarantine, released storage and dispatch areas.

Blood banks generally use controlled hygienic zoning rather than classified cleanrooms. Component processing, testing and storage are separated with validated temperature and contamination controls.

- Redundant power, UPS, emergency generation, temperature-mapped cold rooms/equipment, HVAC, secure data systems, infectious waste and validated transport.

Equipment architecture

Vendor-neutral equipment classes; final URS is issued at feasibility.

- Donor chairs, mixers and tube sealers
- Refrigerated blood-bag centrifuges and plasma extractors
- Blood grouping and infectious-disease testing
- 2–6°C refrigerators, plasma freezers and platelet agitators
- Temperature monitoring and blood-bank software

Capacity & programme

Tier 1: 20,000–60,000 donations/year; Tier 2: 100,000–250,000/year; operating days and collection network dependent.

8–14 months to operational qualification and supervised service launch.

- Capacity assumes stated shifts, qualified inputs, maintenance and validated yield.

Quality & regulatory route

National blood-service licence, donor/traceability rules and quality-system readiness; ISO 15189 may apply to testing laboratories. Typical readiness: 8–14 months.

- Approval decisions remain with the competent independent authority.

Critical risks & staffing

Indicative 20–90 FTE including physicians, nurses/phlebotomists, laboratory scientists, quality and cold-chain personnel; 6–12 weeks systems and workflow training.

- Donor/sample identification error
- Cold-chain excursion
- Infectious screening or release failure
- Component yield/quality loss
- Traceability and haemovigilance breakdown

Feasibility gate

Operating economics are issued as a sensitivity model using local labour, utilities, materials, yield, utilisation and financing assumptions; they are not a guaranteed return.

Provide country, site, portfolio, capacity, budget, financing and target date.

- Azerbaijan — blood-bank equipment and workflow programme
- Türkiye — blood-bank systems portfolio