8. Advises the CCDR on the disposition of captured enemy medical materiel in accordance with the Geneva Conventions.

9. Reviews and provides recommendation for approval or disapproval of requests for nonstandard medical equipment beyond unit authorized allowances.

(b) CCDRs establish capabilities for theater MEDLOG by requesting operational MEDLOG forces required to support the medical plan. To the extent possible, theater MEDLOG leverages distribution capabilities and information technology to minimize layers of storage and MEDLOG management and employs MEDLOG capabilities that support all Service components and designated multinational partners to minimize unnecessary redundancy and promote supply chain efficiency. Theater MEDLOG is employed as part of the integrated medical system typically under the management control of the Service component. MEDLOG support functions are performed at every role of the medical system and depend on integrated plans and processes that are fully synchronized with theater medical operations.

(c) Theater-level MEDLOG is tailored to the mission, supported force, threat, and geography of the supported theater. It is composed of operational MEDLOG units requested by the CCDR and task-organized within the theater medical system to responsively and efficiently sustain all supported forces. Theater-level MEDLOG capabilities reach directly into national commercial supplier networks or institutional MEDLOG organizations of the MHS. Theater MEDLOG units are typically under the control of the senior medical commander within a joint medical task force or Service component command tasked with providing theater MEDLOG to supported forces.

b. **Blood Management.** The ASBP serves as the single integrated blood product support system, composed of the Armed Services Blood Program Division, the Services, and the CCMDs. The Armed Services Blood Program Division coordinates the ASBP under the Director, DHA. Figure III-5 depicts the Armed Services blood coordination and distribution system from the supporting base to the MTF. The JBPO and AJBPO are responsible for the joint blood distribution system within their geographical area.

(1) **Blood Distribution System.** Blood and blood products (Class VIIIB) are more than just another commodity of medical supply. Blood is a living tissue and requires handling by individuals specially trained in blood management and storage.

(a) Blood support in a JOA is a dynamic and an ever-evolving process, heavily influenced by:

1. Stringent storage and handling requirements.

2. Inventory management constraints.

3. Evolving transportation systems and routes.

4. Blood information technology system.

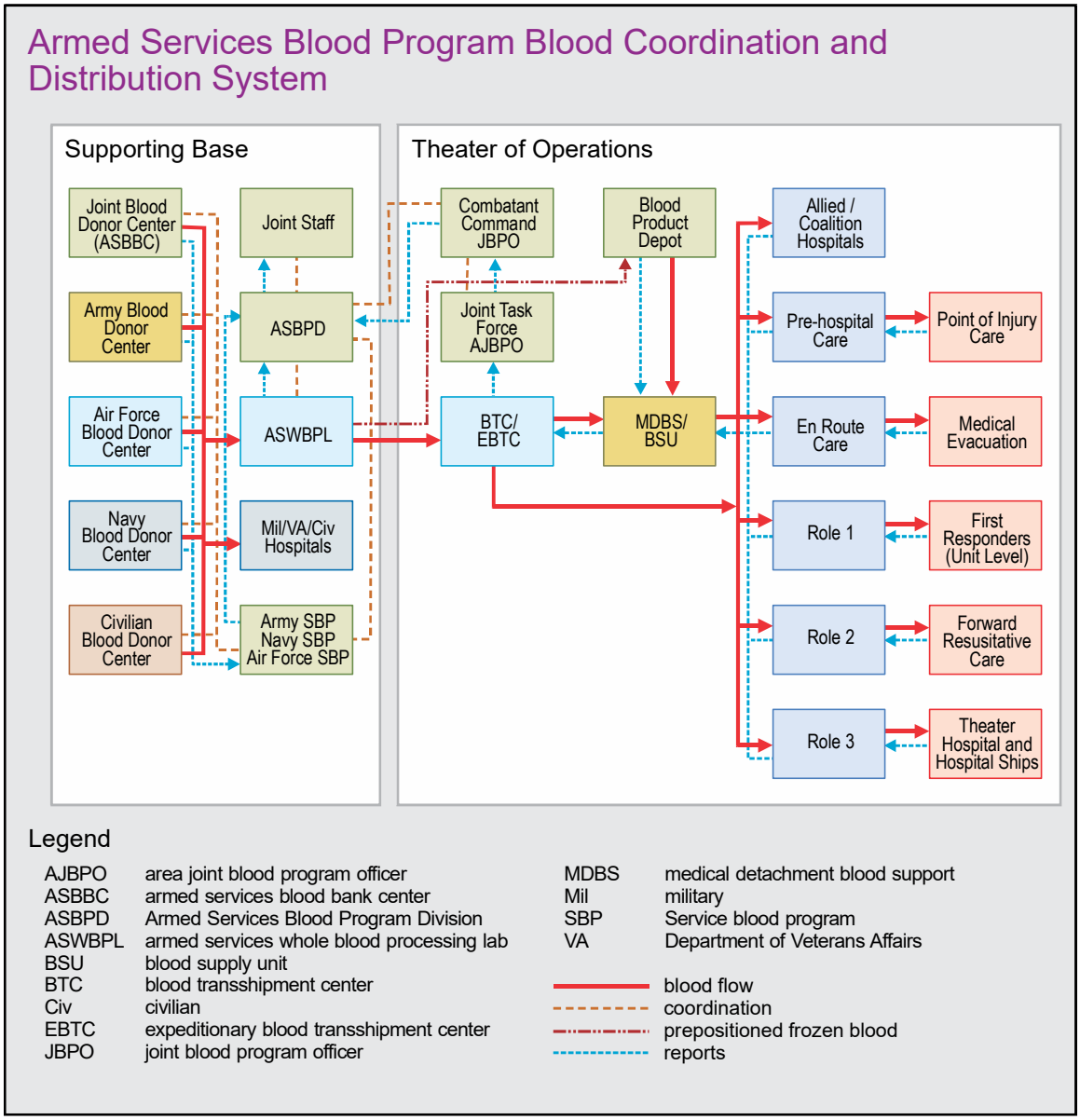

Figure III-5. Armed Services Blood Program Blood Coordination and Distribution System

(b) To be successful, blood support is organized with cooperative effort on the part of the blood transshipment center/expeditionary blood transshipment center (EBTC); medical detachment, blood support (MDBS); blood supply unit; laboratory and blood bank personnel; MEDLOG personnel; transportation personnel; and health care providers.

(c) Theater blood support during wartime/contingency operations is provided to US military facilities and, as directed, multinational military and civilian medical facilities.

(d) Theater blood support, including canine blood and blood products, may consist of a combination of shipped liquid or frozen blood products, as well as in-theater

collection of fresh whole blood (FWB) or platelets. The actual amount of liquid and frozen blood products is determined by the urgency of need and availability of resources within the JOA.

(e) Blood services in the JOA consist of a combination of operational capabilities that include:

1. Storing, processing, and distributing previously frozen blood components pre-positioned within theater.

2. Receiving blood products from the supporting bases.

3. Moving, storing, and distributing blood products to MTFs.

4. WBB in the JOA.

5. Apheresis platelet collection in the JOA.

6. Tracking/maintaining pertinent information from donor/unit testing; follow-up requirements; and patient transfusion information, to include non-Food and Drug Administration (FDA)-compliant transfused blood products.

7. Canine blood and blood product receiving, moving, storing, and distribution, and canine-equivalent. donor-screened WBB, in coordination with USA veterinary personnel.

(2) **Available Blood Products.** Blood products may be pushed down to Role 1 teams/medical providers. Blood products should be available as far forward on the battlefield as possible for combat casualty care. All deployed medical facilities that maintain blood products require the appropriate staffing, equipment, and training for blood management and utilization. Figure III-6 summarizes Class VIIIB blood products and storage requirements.

(a) **FWB.** FWB can either be stored at room temperature and used within 24 hours of collection (and then destroyed if not used), or it can be converted to cold-stored WB if refrigerated within eight hours of collection. The CCMD surgeon, in coordination with the JBPO, may develop a FWB storage policy for in-theater collected blood.

(b) The storage temperature for liquid RBCs, liquid plasma (LP), CSP, LTOWB, and cold-stored WB is 1-6 degrees Celsius. During transport from one facility to another, the shipping temperature of liquid RBCs, LP, CSP, LTOWB, and cold-stored WB must be maintained at 1-10 degrees Celsius. CSP may not be available at all roles of care due to inventory constraints. Two types of collection bags with different anticoagulants are typically used throughout the ASBP—citrate phosphate dextrose or citrate phosphate dextrose adenine. When processing WB collected in citrate phosphate dextrose into packed RBCs, an additive (optisol additive solution-5) can be used to extend the shelf life. The expiration date of LP also depends on the anticoagulant used during collection.

Blood Products and Storage Requirements

Product		Expiration	Storage Temperature	Shipping Temperature
Fresh Whole Blood (FWB)[2]	CPD1[1]	24 hours	Room Temperature	Room Temperature
	CPDA-1[1]			
Low-titer O Whole Blood[3]/ Cold-stored Whole Blood	CPD	21 days	1°C - 6°C	1°C - 10°C
	CPDA-1	35 days		
Red Blood Cells (RBCs)	CPDA-1	35 days	1°C - 6°C	1°C - 10°C
	AS-5[1]	42 days		
Liquid Plasma	CPD	26 days	1°C - 6°C	1°C - 10°C
	CPDA-1	40 days		
Fresh Frozen Plasma/ Plasma Frozen within 24 hours		1 year	≤ -18°C	Remain Frozen
Cyroprecipiate		1 year		
Frozen RBCs		10 years	≤ -65°C	Remain Frozen
Deglycerolized RBCs		14 days	1°C - 6°C	1°C - 10°C
Cold-stored Platelets		14 days	1°C - 6°C	1°C - 10°C
Room-temperature Platelets		5 days	20°C - 24°C	20°C - 24°C

Notes:

1. CPD, CDPA-1, AS-5 defined: citrate phosphate dextrose; citrate phosphate dextrose adenine; additive solution (optisol)
2. FWB can either be stored at room temperature and used within 24 hours of collection (and then destroyed if not used) or it can be converted to cold-stored whole blood if refrigerated within 8 hours of collection. The combatant command surgeon in coordination with the joint blood program officer, may develop a FWB storage policy for blood collected in theater.
3. Whole blood collected at a Food and Drug Administration-registered facility that is donor type O and has been confirmed to have low titers of anti-A and anti-B antibodies (titer < 1:256, donor tested at time of donation).

Legend

C Celsius

Figure III-6. Blood Products and Storage Requirements

(c) Platelets can be stored at two temperature options, as noted in Figure III-6. Room temperature platelets are stored at 20-24 degrees Celsius with continuous agitation. The temperature during shipment must remain as close to 20-24 degrees Celsius as possible. CSP are stored at 1-6 degrees Celsius with no agitation. Temperature during shipment of CSP must be 1-10 degrees Celsius.

(d) Cryoprecipitate has a 12-month shelf life when stored at -18 degrees Celsius or colder. Once thawed, cryoprecipitate units pooled in an open system have a four-hour shelf life, units pooled using a sterile connection have a six-hour shelf life, and units that were never pooled (single units) have a six-hour shelf life. Cryoprecipitate is kept frozen during transport.

(e) Frozen RBCs have a 10-year shelf life when stored frozen at -65 degrees Celsius or colder. Once thawed and deglycerolized, the shelf life is 14 days and stored at 1-6 degrees Celsius. Frozen RBCs are kept frozen during transport.

(3) **WBB.** Collection of FWB by WBB in theater is a procedure that should be used only when full component therapy is not available or if a patient is not responding appropriately to component therapy. The JBPO/AJBPO should be notified when a WBB is activated.

(a) Theater MTFs maintain an amount of blood products on hand necessary to meet operational requirements yet minimize waste due to out-dating. Some roles of care have limited capability to collect WB and apheresis platelets during emergencies. These emergency/in-theater collections result in blood products that are considered non-FDA compliant because these collections lack the appropriate donor screening and transfusion-transmitted disease testing as required by the FDA. When non-FDA-compliant blood must be transfused, it carries the risk of potentially transmitting infectious diseases to the patient. To adequately mitigate this risk, proper controls are applied to ensure (to the extent the operational and clinical situations permit) blood collected during WBB procedures is retrospectively tested and proper follow-up of the blood donor and recipient is accomplished. Patient follow-up also applies to US patients transfused in HN health care facilities with blood that has not been deemed as being compliant with FDA standards. For more details, instructions, and procedures on emergency WB collection, refer to the current *Clinical Practice Guidelines of the Joint Trauma System for Whole Blood Transfusion*.

(b) Use of infectious disease rapid screening test kits is not equivalent to testing with FDA-licensed screening tests for donor eligibility.

(c) Specimen sample tubes are collected and labeled with a unique donor identification number (preferably the DoD identification or bar-coded label if available) at the time of blood donation and sent to a designated Clinical Laboratory Improvement Program- or Clinical Laboratory Improvement Amendments-certified donor testing laboratory for retrospective testing. Results of all pre-screening and retrospective testing are provided to the AJBPO. Locations submitting samples must coordinate with JBPO/AJBPO for sample submission guidelines and processes.

(d) Donor collection information is submitted to the AJBPO within 48 hours of collection. The required information is determined by the AJBPO but should, at minimum, include donor's full name, unique identifier/Social Security number, unique donation identification number, organizational unit assigned, date of donation, location of donation, unit disposition (transfused or destroyed), unit disposition date, and any testing results (rapid or retrospective) available.

(e) All records from the WBB are maintained in accordance with current ASBP, Service, or CCMD policies.

(f) Follow-up notification and counseling is provided to any donor who tests positive on the pre-screen, rapid, or retrospective test panels as follows:

1. Document, track, and follow up blood donors with positive infectious disease testing results, regardless of whether the unit was transfused.

2. Donors are deferred from subsequent blood donations, notified of the test results, and offered counseling.

3. Recipients of non-FDA blood products should receive follow-up infectious disease testing (per ASBP guidance) at three, six, and 12 months following transfusion. If clinical and operational setting permits, also obtain day-of-transfusion baseline infectious disease testing.

More detailed guidance on blood management and the ASBP is provided in DoDI 6480.04, Armed Services Blood Program; *Technical Manual (TM) 8-227-11/Navy Medicine (NAVMED) Publication (P)-5123/Air Force Instruction 44-118,* Operational Procedures for the Armed Services Blood Program Elements; *TM 8-227.12/NAVMED P-6530/Air Force Handbook 444-152_IP,* Armed Services Blood Program Joint Program Handbook; *TM 4-02.70/NAVMED P-5120/AFMAN 41-111_IP,* Standards for Blood Banks and Transfusion Services; *and ATP 4-02.1,* Army Medical Logistics.

c. **SIMLM.** Logistics, including MEDLOG, is a Service responsibility; however, JFCs may assign the mission to plan and synchronize MEDLOG as a common-user logistics function. Common-user logistics for MEDLOG are known as SIMLM (management) and the designated Service component is referred to as the SIMLM (manager).

(1) The assignment of a SIMLM is mission-specific and depends upon the composition of the supported force (e.g., one Service versus multiple Service components) and the complexity of intratheater distribution (e.g., the need to establish intermediate medical storage and distribution nodes to meet health service requirements).

(2) When assigning SIMLM responsibility, the JFC specifies the scope and duration of MEDLOG support to be provided, such as medical supply, medical equipment maintenance, or optical fabrication.

(3) The SIMLM, in coordination with the JFS and supporting TLAMM, develops the MEDLOG support plan (typically the MEDLOG appendix to annex Q) and identifies to the JFC any additional resources necessary to provide MEDLOG support to all designated customers. The JFC may task other assigned Service components to augment the SIMLM or pass validated requirements for sourcing. This may include forces to augment a supporting TLAMM to expand its capabilities for operational mission requirements.

(4) The scope of SIMLM planning and support responsibilities should include:

(a) Class VIII storage and distribution, to include storage and management of cold chain, controlled substances, and other critical items of special interest to the JFS.

(b) Instructions for submission of Class VIIIA requisitions by theater forces.

(c) Medical maintenance and repair support, including support for contracted maintenance services.