OFFICE OF THE UNDER SECRETARY OF DEFENSE
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PERSONNEL AND
READINESS

The Honorable John Carter
Chairman
Subcommittee on Military Construction,
Veterans Affairs, and Related Agencies
Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

JUL 25 2025

Dear Mr. Chairman:

The Department's response to House Report 118–122, page 5, accompanying H.R. 4366, the Military Construction, Veterans Affairs, and Related Agencies Appropriations Bill, 2024, "Blood Processing Laboratory Infrastructure," is enclosed.

This report provides an overview of the status of blood center infrastructure and projected equipment requirements to sustain and to surge blood center operations, modernizing facilities, and augmenting technologies to optimize the Department of Defense blood posture. Review of current infrastructure identifies that 50 percent of blood laboratories require some form of modernization to include equipment replacement; facility modifications to electrical and heating, ventilation, and air conditioning systems; and added square footage to support current and future blood production. The future of casualty care during large-scale combat operations and the potential to incur thousands of daily injured requires an agile, robust, and modern blood production capability.

Thank you for your continued strong support for the health and well-being of our Service members, veterans, and their families.

Sincerely,

[redacted]

Merlynn Carson, MD
Performing the Duties of the Deputy Under
Secretary of Defense for Personnel and
Readiness

Enclosure:
As stated

cc:
The Honorable Debbie Wasserman Schultz
Ranking Member

Report to the Subcommittee on Military Construction, Veterans Affairs, and Related Agencies, Committee on Appropriations of the House of Representatives

Blood Processing Laboratory Infrastructure

July 2025

The estimated cost of this report or study for the Department of Defense is approximately $18,560.00 for the 2024 Fiscal Year. This includes $0 in expenses and $18,560.00 in DoD labor.
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INTRODUCTION

This report is in response to House Report 118–122, page 5, accompanying H.R. 4366, the Military Construction, Veterans Affairs, and Related Agencies Appropriations Bill, 2024, "Blood Processing Laboratory Infrastructure," on the status of blood processing laboratory infrastructure. The committee's recommendations include several provisions requiring the Department of Defense (DoD) to report on various aspects of military construction programs. This report addresses the infrastructure status of blood processing laboratories, which consist of individual blood donor centers (BDCs) and Armed Services Blood Bank Centers (ASBBCs) (hereinafter referred to as BDCs) as well as logistical distribution centers, known as Armed Services Whole Blood Processing Laboratories (ASWBPLs). Specifically, this report includes:

1. The status of BDC infrastructure and projected equipment requirements to sustain and project equipment lifestyle replacement; and surge operations;
2. The potential strategy to modernize facilities; and
3. Augmenting technologies to optimize the DoD blood posture.

BACKGROUND

The Armed Services Blood Program (ASBP) serves as the DoD's designated office of primary responsibility for blood program support matters for the United States, DoD, North Atlantic Treaty Organization, partner nations, and non-Federal civilian Agencies.[1] The ASBP maintains three separate Food and Drug Administration (FDA) licenses or registrations for all DoD blood collection and transfusion facilities.[2] The current inventory of blood centers includes 20 BDCs and two ASWBPLs that serve as logistical hubs for DoD global blood movement (Table 1).

Table 1. DoD Blood Donor Centers and Logistical Hubs

Facility	Location
ASWBPL – East	Joint Base McGuire-Dix-Lakehurst, NJ (pending relocation to Dover Air Force [AFB] Base, DE)
ASWBPL – West	Travis AFB, CA
Keesler BDC	Keesler AFB, MS
88th Medical Group BDC	Wright-Patterson AFB, OH
ASBBC – San Antonio	Lackland AFB, TX
Akeroyd BDC	Fort Sam Houston, TX
Kendrick Memorial BDC	Fort Eisenhower, GA
Fort Leonard Wood BDC	Fort Leonard Wood, MO
Fort Bragg BDC	Fort Bragg, NC
ASBBC – Pacific Northwest	Joint Base Lewis-McChord, WA
Sullivan Memorial BDC	Fort Moore, GA
Tripler Army BDC	Honolulu, HI
ASBBC – Europe	Landstuhl Regional Medical Center, GE
Fort Bliss BDC	Fort Bliss, TX
Robertson BDC	Fort Cavazos, TX
Naval Medical Center San Diego BDC	San Diego, CA
ASBBC – Okinawa	Camp Foster, JPN
U.S. Naval Hospital Guam BDC	U.S. Naval Hospital Guam, GU
ASBBC – National Capitol Region	Bethesda, MD
Naval Medical Center Portsmouth BDC	Portsmouth, VA
Navy Medicine Readiness and Training Command Great Lakes BDC	North Chicago, IL
Navy Medicine Readiness and Training Command Camp Lejeune BDC	Camp Lejeune, NC

Each BDC differs in capacity and production capability, as well as strategic location and mission. Sixteen BDCs are located within the continental United States (CONUS) and four are located outside the continental United States. The two ASWBPLs are located CONUS on the east and west coast. Of note, section 2401 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2024 (Public Law 118–31) authorized $30.5 million for construction of a new ASWBPL-East facility to be located at Dover AFB, Delaware, to replace the existing ASWBPL-East facility and mission at Joint Base McGuire-Dix-Lakehurst, New Jersey.[3]

The primary mission of BDCs are the collection, processing, manufacturing, and distribution of whole blood and blood component products. The BDCs manufacture whole blood, red blood cells, various plasma products, platelets, cryoprecipitate, and frozen red blood cells (hereinafter referred to as blood products). Internal BDC spaces are constructed to enable multi-faceted operations including blood collection from donors, blood processing, and manufacture of blood components into properly labeled and tested products prepared for transfusion. Blood centers must meet stringent regulatory guidelines established by the FDA, Association for the

Advancement of Blood and Biotherapies (AABB), and College of American Pathologists. Facility requirements include adequate space, ventilation, temperature control, electrical capacity, and equipment. These facilities requirements are necessary to ensure the purity, potency, and safety of blood products manufactured. Per Department of Defense Instruction 6480.04, "Armed Services Blood Program," January 7, 2022, as amended, blood products manufactured by BDCs are required to be distributed in the following priority order:

(1) ASWBPLs in support of military or contingency operations.
(2) Special operations and rapid deployment blood support to military medical treatment facilities (MTFs).
(3) DoD MTFs to support patient transfusion requirements.
(4) Department of Veterans Affairs (VA), local government, or civilian hospitals, through either the National Blood Exchange or memoranda of agreement, when excess products are available and specific needs are identified.

The two ASWBPLs are tri-Service-staffed facilities. Their mission includes receipt of blood products from the CONUS BDCs, confirmatory testing, and distribution of blood products to designated military treatment facilities located within geographic Combatant Command areas of responsibility. Both ASWBPLs are collocated near major airfields to ensure timely distribution of blood products.

The FDA, in 21 CFR, Part 606, "Current Good Manufacturing Practice for Blood and Blood Components," requires facilities to be of suitable size and construction to facilitate proper operation.[4] Additionally, facilities must provide adequate space for withdrawal of blood with minimal risk or contamination or exposure to activities and equipment unrelated to blood collection. The space should allow for orderly collection, processing, compatibility testing, storage and distribution of blood and blood components to prevent contamination. As required by AABB, work areas must be suitable for the activities performed and suitable quarters, environment, and equipment must be available to maintain safe operations.

1. STATUS OF BDC INFRASTRUCTURE AND PROJECTED EQUIPMENT REQUIREMENTS TO SUSTAIN AND SURGE OPERATIONS

Of the 20 BDCs, 12 are standalone facilities and 8 are located inside of another facility, usually a MTF. Both ASWBPLs are stand-alone structures. The average construction year of standalone facilities is 1989. The ASBBC Pacific Northwest is the oldest facility constructed in 1943. It was significantly renovated (>25 percent of facility or facility system) in 2007. The newest facilities were constructed in 2021 (Fort Leonard Wood and Kendrick Memorial) and 2022 (Fort Bliss). Eight facilities (36 percent) have had no significant renovations in the past 15 years (Table 2).

Table 2 provides the Building Condition Index (BCI) and the Deferred Maintenance Requirements (DMR) which are common DoD facility investment criteria and provide the initial facility screening data. One or both screening criteria are met by 13 of the 22 sites. There are four BDCs that meet the BCI threshold and nine that meet the DMR requirement.

Currently, Tripler Army Medical Center and Balboa Hospital/San Diego have projects in the capital investment planning process as larger efforts to recapitalize both medical centers. Combining blood program requirements while addressing other facility needs will result in an optimal facility for blood program operations.

Table 2. Blood Center Construction and Last Renovation Year, BCI and DMR

Facility	Constructed	Last Renovation	Years from Last Renovation or Original Construction	BCI	DMR/ Square Foot
ASWBPL – East (Pending Approved Relocation)	1955	1995	29	61	$358.66
ASWBPL – West	1994	2019	5	58	$337.35
Keesler BDC	1957	2009	15	79	$7.40
88th Medical Group BDC	1982	2012	12	69	$137.81
ASBBC – San Antonio	2000	N/A	24	75	$136.47
Akeroyd BDC	1993	N/A	31	63	$303.06
Kendrick Memorial BDC	2021	N/A	3	100	$0.00
Fort Leonard Wood BDC	2021	N/A	3	100	$0.00
Fort Bragg BDC	2010	N/A	14	86	$31.95
ASBBC – Pacific Northwest	1943	2007	17	59	$378.20
Sullivan Memorial BDC	2012	N/A	12	92	$6.68
Tripler Army BDC	1946	1988	36	54	$506.05
ASBBC – Europe	1952	2015	9	59	$337.57
Fort Bliss BDC	2022	N/A	2	100	$0.00
Robertson BDC	2000	N/A	24 (Pending Approved Renovation)	77	$125.51
Naval Medical Center San Diego BDC	1987	2023	1	62	$151.15
ASBBC – Okinawa	2014	N/A	10	93	$20.34
U.S. Naval Hospital Guam BDC	2013	N/A	11	94	$13.31
ASBBC – National Capitol Region	1975	2003, 2020, 2022	2	68	$128.21
Naval Medical Center Portsmouth BDC	1960	2007	17	61	$147.76
Navy Medicine Readiness and Training Command Great Lakes BDC	1995	N/A	29	Not a Defense Health Agency (DHA) Facility Facility is owned by VA	
Navy Medicine Readiness and Training Command Camp Lejeune	2004	N/A	20	73	$139.00

N/A, non-applicable

For comparison to the 13 BDC sites, 819 DHA facilities in the inventory met both the BCI and the DMR screening thresholds. The ranking of the four BDC projects that met both the BCI and DMR requirement within the overall facility inventory is shown in Table 3.

Table 3. Blood Donor Centers that Meet BCI and DMR

Site Name	Screening Criteria Ranking
Landstuhl Hospital / ASBBC – Europe	47
Fort Lewis / ASBBC – Pacific Northwest	19
Tripler Army BDC	32
Travis AFB / ASWBPL – West	49

The sustainment, restoration, and maintenance program follow a similar process in evaluating potential investment projects. Camp Lejeune (East Site) and Akeroyd BDCs are scheduled for FY 2024 sustainment and repair projects and are currently on the list along with 966 other projects. Camp Lejeune is scheduled for heating, ventilation, and air conditioning repair and Akeroyd is scheduled as a sustainment project.

More broadly, DHA has a deferred maintenance value of $11.5B across the entire sustained inventory of 3,151 facilities. Current Facility Sustainment Restoration and Modernization funding provides $0.10 for every dollar required to close the maintenance gap.

Withstanding significant renovations, 14 (63 percent) facilities required added square footage to meet current blood collection and production demands (Table 4). The average BDC size is 9,935 square feet. The largest BDC is 21,326 square feet (Robertson BDC) and the smallest is 376 square feet (U.S. Naval Hospital Guam BDC). Due to limited space and equipment constrains, ten (45 percent) facilities do not have the capacity to surge blood operations (Table 5). Having an ample DoD blood production surge capability aligns with supporting steady-state operations and ensures readiness for potential large-scale conflicts, disaster relief, and pandemics.

Table 4. BDCs Requiring Added Space to Meet Current Blood Collection Demand

Facility	Current Square Footage	Estimated Additional Square Footage Required	Space Requirement Estimate by Location
Keesler BDC	5,800	2,000	Post Donation Rest Area, Record Storage, Blood Safety Review, Lab Space
88th Medical Group BDC	3,424	900	Private Interview Room, Lab Space
Akeroyd BDC	7,532	2,000	Post Donation Rest Area, Record Storage, Blood Safety Review
Kendrick Memorial BDC	15,747	1,900	Private Interview Room, Record Storage, Blood Safety Review
Fort Bragg BDC	3,025	1,500	Record Storage, Lab Space
ASBBC – Pacific Northwest	9,836	1,900	Private Interview Room, Record Storage, Blood Safety Review
Sullivan Memorial BDC	1,9323	2,000	Record Storage, Lab Space
Tripler Army BDC	1,869	2,900	Private Interview Room, Record Storage, Blood Safety Review, Lab Space
ASBBC – Europe	15,000	400	Private Interview Room
Naval Medical Center San Diego BDC	4,993	1,900	Private Interview Room, Record Storage, Blood Safety Review
U.S. Naval Hospital Guam BDC	376	2,000	Record Storage, Blood Safety Review, Lab Space
Naval Medical Center Portsmouth BDC	3,054	3,400	Post Donation Rest Area, Private Interview Room, Blood Safety Review, Lab Space
Navy Medicine Readiness and Training Command Great Lakes BDC	3,310	3,000	Record Storage, Blood Safety Review, Lab Space
Navy Medicine Readiness and Training Command Camp Lejeune BDC	4,909	2,900	Post Donation Rest Area, Private Interview Room, Record Storage, Blood Safety Review, Lab Space

Space Requirements are based on a FDA Regulation found in 21 CFR, Part 606, Current Good Manufacturing Practice for Blood and Blood Components.

Space Requirement Description:

- *Post Donation Rest Area: Monitor donor after donation to ensure proper recovery.*
- *Record Storage: Regulatory agencies require storage of documentation to manufacture blood.*
- *Blood Safety Review: Location where blood is reviewed for quality indicators and labeled.*
- *Private Interview Room: Interview donor for health history questionnaire.*
- *Lab Space: Processing and manufacturing of blood products.*

Table 5. BDCs Without Blood Collection Surge Capacity

Facility	Current Square Footage	Location
Akeroyd BDC	7,532	Fort Sam Houston, TX
Kendrick Memorial BDC	15,747	Fort Eisenhower, GA
Fort Bragg BDC	3,025	Fort Bragg, NC
ASBBC – Pacific Northwest	9,836	Joint Base Lewis-McChord, WA
Sullivan Memorial BDC	19,323	Fort Moore, GA
Tripler Army BDC	1,869	Honolulu, HI
Fort Bliss BDC	13,200	Fort Bliss, TX
ASBBC – National Capitol Region	8,061	Bethesda, MD
Navy Medicine Readiness and Training Command Great Lakes BDC	3,310	North Chicago, IL
Navy Medicine Readiness and Training Command Camp Lejeune BDC	4,909	Camp Lejeune, NC

Heating and cooling systems are inadequate at nine (41 percent) facilities (Table 6). Adequate heating and cooling are necessary to comply with stringent regulatory and functional equipment temperature requirements and to ensure donor safety and prevent blood product degradation. These centers use space and electrical-consuming portable air conditioning units or halt production until the appropriate temperature is attained.

Table 6. BDCs Requiring Upgraded Heating and Cooling Systems

Facility	Location
ASBBC – San Antonio	Lackland AFB, TX
Akeroyd BDC	Fort Sam Houston, TX
Fort Bragg BDC	Fort Bragg, NC
Tripler Army BDC	Honolulu, HI
Robertson BDC	Fort Cavazos, TX
ASBBC – National Capitol Region	Bethesda, MD
Naval Medical Center Portsmouth BDC	Portsmouth, VA
Navy Medicine Readiness and Training Command Great Lakes BDC	North Chicago, IL
Navy Medicine Readiness and Training Command Camp Lejeune BDC	Camp Lejeune, NC

Electrical systems at seven (32 percent) centers are insufficient to support steady-state equipment requirements (Table 7). These centers cannot expand or upgrade equipment to meet blood production surge requirements. BDCs with insufficient electrical systems rely on back-up power systems to ensure uninterrupted operations and relocate products during power outages. For example, Akeroyd BDC electrical system is aged 30 years and can support current requirements, but the system cannot support additional equipment. Fort Bragg BDC has had to perform upgrades to the electrical wiring to support blood manufacturing equipment and there continues to be a need for additional upgrades to support the building power capacity.

Table 7. BDCs with Insufficient Electrical Systems

Facility	Location
Akeroyd BDC	Fort Sam Houston, TX
Fort Bragg BDC	Fort Bragg, NC
ASBBC – Pacific Northwest	Joint Base Lewis-McChord, WA
Naval Medical Center San Diego BDC	San Diego, CA
ASBBC – National Capitol Region	Bethesda, MD
Naval Medical Center Portsmouth BDC	Portsmouth, VA
Navy Medicine Readiness and Training Command Camp Lejeune BDC	Camp Lejeune, NC

Substantial equipment replacement is required at 14 (64 percent) BDCs/ASWBPLs over the next 5 years due to reaching end of life expectancy (Table 8). Equipment replacement includes refrigerators, normal and sub-low freezers, ice machines, testing analyzers, blood gylcerolization (freezing) and thawing (deglycerolization) instruments, and blood production equipment. Fort Bragg, Naval Medical Center Portsmouth, and Tripler Army Medical Center indicated that 30 percent to 60 percent of their current equipment has exceeded life expectancy. The ASWBPL-West, which primarily supports the Indo-Pacific region, needs increased refrigerated storage capacity for blood products to support the region's operational plan. Additional consideration must be given to ensure electrical systems can support replacement equipment and new equipment purchases are energy efficient to maximize use. Close planning and coordination of equipment replacement activities must be performed in conjunction with infrastructure upgrades to ensure adequate space and electrical requirements are available to support new equipment and achieve optimal center preparedness.

Table 8. Substantial Equipment Replacement

Facility	Location
ASWBPL – West	Travis AFB, CA
Keesler BDC	Keesler AFB, MS
88th Medical Group BDC	Wright-Patterson AFB, OH
Akeroyd BDC	Fort Sam Houston, TX
Fort Bragg BDC	Fort Bragg, NC
ASBBC – Pacific Northwest	Joint Base Lewis-McChord, WA
Sullivan Memorial BDC	Fort Moore, GA
Tripler Army BDC	Honolulu, HI
Fort Bliss BDC	Fort Bliss, TX
Naval Medical Center San Diego BDC	San Diego, CA
ASBBC – Okinawa	Camp Foster, JPN
ASBBC – National Capitol Region	Bethesda, MD
Naval Medical Center Portsmouth BDC	Portsmouth, VA
Navy Medicine Readiness and Training Command Great Lakes BDC	North Chicago, IL

Adequate and ample road signage to direct potential donors to BDCs and ASWBPLs is imperative to maintaining the DoD blood supply. Specifically, all individuals who access installations should be aware of the location of a BDC for blood donation. Fifteen (68 percent) blood centers indicated that their installations have limited to no signs to identify or direct individuals to facilities (Table 9). Ample road signage at multiple entry control points is needed to guide potential donors and sustain blood operations during peacetime and conflict.

Table 9. Inadequate Road Signage to Direct Donors to BDC

Facility	Location
Keesler BDC	Keesler AFB, MS
88th Medical Group BDC	Wright-Patterson AFB, OH
Akeroyd BDC	Fort Sam Houston, TX
Kendrick Memorial BDC	Fort Eisenhower, GA
Fort Leonard Wood BDC	Fort Leonard Wood, MO
ASBBC – Pacific Northwest	Joint Base Lewis-McChord, WA
Sullivan Memorial BDC	Fort Moore, GA
Tripler Army BDC	Honolulu, HI
Robertson BDC	Fort Cavazos, TX
Naval Medical Center San Diego BDC	San Diego, CA
ASBBC – Okinawa	Camp Foster, JPN
U.S. Naval Hospital Guam BDC	U.S. Naval Hospital Guam, GU
Naval Medical Center Portsmouth BDC	Portsmouth, VA
Navy Medicine Readiness and Training Command Great Lakes BDC	North Chicago, IL
Navy Medicine Readiness and Training Command Camp Lejeune BDC	Camp Lejeune, NC

2. MODERNIZING FACILITIES

While not all locations require facility modifications, it is noted that many centers require equipment upgrades at minimum. For those facilities requiring equipment upgrades, mechanical upgrades are commonly required to meet demands on electrical systems and floor plan modifications.

ASBP BDCs have undergone previous facility renovations and follow regulatory guidelines to mitigate production interruptions during future facility modifications. Blood production at facilities undergoing renovation may have their production quota temporarily fulfilled by alternate centers. Another option to mitigate impact to blood production is the relocation of operations to a temporary space that meets regulatory requirements until completion of that center's modifications.

Analysis of BDC locations was performed from 2002 to 2005 during the Base Realignment and Closures authorized by section 3001 of the NDAA for FY 2002 (Public Law 107-107). As

military installations have aligned and changed, it is imperative to assess locations and the donor population that could provide a significant capacity for blood collection.

3. AUGMENT TECHNOLOGIES TO OPTIMIZE THE DOD BLOOD POSTURE

To improve readiness for large-scale operations, a DoD lyophilized (dried) plasma production capability is incredibly important. Specifically, isolated Naval vessels would benefit from dried plasma due to the tyranny of distance at sea and the high likelihood of burn injuries. Dried plasma is especially important for combat casualty care during large scale combat operations when utilization is anticipated to be high. Currently, a deployable dried plasma production unit contained in an International Organization for Standardization sea-container is being developed by a private vendor. These containers are built for extreme conditions with advanced ventilation and remote monitoring systems offering a rapidly deployable dried plasma production capability to forward locations. This deployable plasma production capability is the same spray-dried plasma production methodology currently being implemented by the ASBPD at ASWBPL-East in the fourth quarter of 2024. The ability to have supporting infrastructure allows replication of dried plasma production at multiple DoD BDCs thereby decreasing reliance on limited external manufacturing companies.

Bloodmobiles provide an augmented capability and expanded method to access donors across the installation and even across states. Bloodmobiles decrease blood drive set-up time by 2 hours, which can then be used to increase blood collection efforts. Bloodmobiles can also be used to augment blood drives that are set up inside a facility by providing additional donor interview and collection capability. Currently there are eight bloodmobiles at centers; however, three are mostly nonfunctional due to the high cost of maintenance and a requirement for a specialized driver's license to operate. The most recent bloodmobile purchase was in 2016 at a cost of $816,116. The ASBPD has identified an emerging technology of a "lean" bloodmobile fleet that is an alternative to big, heavy, and expensive truck or trailer bloodmobile platforms. These bloodmobiles are fuel efficient, require no specialized driver's license, collapsible, modular and have improved insulation. They have the same capacity for blood collections as current models and have shown to sustain increased use. Further, this new platform has a projected 60 percent cost savings compared to previous models.

Tyranny of distance remains a gap in the next conflict as kinetic operations will require prolonged casualty care on the battlefield and at all echelons of care. Rapid resupply of blood and medical supplies in the absence of air superiority will be paramount to DoD success. Our lessons learned in the last 20 years of conflict have provided a landscape, but the future conflict will be drastically different. Unpredictable patient transport and interrupted supply chain will require innovative solutions. The ASBPD promotes technology that can move blood closer to the point of need via unmanned vessels (sea, air, or land).

CONCLUSION

The last 2 decades of combat medicine have yielded the highest level of survival for preventable death in the DoD's history.[5] The cornerstone for this success can be attributed to combat lifesaver training, rapid casualty extraction, use of tourniquets, and the rapid availability of blood

at or near the point of injury. Unlike the Korean War, the DoD had a readily available blood capability at the beginning of the conflict which saved innumerable lives.[6] The DoD's 20 blood centers and two logistical hubs have prevailed throughout the last 2 decades, but the equipment and infrastructure have grown weary and require modernization to maintain pace with potential future conflicts.

The future of large-scale combat operations and the probability that those conflicts will incur thousands of daily casualties requires a ready and agile blood surge capability. Agile blood surge capability is based on the casualty estimate that 20 percent of wounded will require a minimum of eight units of whole blood or whole blood equivalents per casualty.[8] The Department works to improve the DoD's ability to medically support future large-scale combat operations and minimize preventable deaths related to hemorrhage.

REFERENCES

1. Department of Defense Instruction 6480.04, "Armed Services Blood Program," January 7, 2022, as amended

2. Assistant Secretary of Defense for Health Affairs Memorandum, "U.S. Food and Drug Administration Licensure and Registration of Department of Defense Blood Collection and Transfusion Facilities," November 13, 2021

3. Section 4601 of the National Defense Authorization Act for Fiscal Year 2024 (Public Law 118–31)

4. U.S. Food and Drug Administration. Code of Federal Regulations. Title 21, Volume 7. Chapter I. Subchapter F – Biologics. Part 606 Current Good Manufacturing Practice for Blood and Blood Components.

5. Blood Banks and Transfusion Services. Standards, 34th Edition. Association for the Advancement of Blood & Biotherapies. April 1, 2024.

6. David Vergun, "Survival Rates Improving for Soldiers Wounded in Combat, Says Army Surgeon General," Army.mil, 24 August 2016, accessed 10 February 2020, https://www.army.mil/article/173808/survival_rates_improving_for_soldiers_wounded_in_combat_says_army_surgeon_general.

7. Blood Program in World War II and Korea, United States Army Medical Service, Douglas B. Kendrick, Office of the Surgeon General, Department of the Army, 1964

8. Office of the Joint Staff Surgeon, "Recommended Modification to Policy for CL VIII(B) (Blood and fluids) Planning Factors" April 15, 2022

APPENDIX. SUMMARY OF BLOOD CENTER INFRASTRUCTURE STATUS

Facility	No Renovation in the last 15 Years	Requires Added Space to Meet Current Blood Collection Demand	Requires Upgraded Heating and Cooling Systems	Requires Electrical System Upgrade	Substantial Equipment Replacement within 5 Years	Inadequate Road Signage to Location
ASWBPL – West					✓	
Keesler BDC	✓	✓			✓	✓
88th Medical Group BDC		✓			✓	✓
ASBBC – San Antonio	✓		✓			
Akeroyd BDC	✓	✓	✓	✓	✓	✓
Kendrick Memorial BDC		✓				✓
Fort Leonard Wood BDC						✓
Fort Bragg BDC		✓	✓	✓	✓	
ASBBC – Pacific Northwest	✓	✓		✓	✓	✓
Sullivan Memorial BDC		✓			✓	✓
Tripler Army BDC	✓	✓	✓		✓	✓
ASBBC – Europe		✓				
Fort Bliss BDC						
Naval Medical Center San Diego BDC		✓		✓	✓	✓
ASBBC – Okinawa					✓	✓
U.S. Naval Hospital Guam BDC		✓				✓
ASBBC – National Capitol Region			✓	✓	✓	
Naval Medical Center Portsmouth BDC	✓	✓	✓	✓	✓	✓
Navy Medicine Readiness and Training Command Great Lakes BDC	✓	✓	✓		✓	✓
Navy Medicine Readiness and Training Command Camp Lejeune BDC	✓	✓	✓	✓		✓

ASWBPL-East and Robertson BDC are excluded from the summary due to pending facility renovations.