

## CHAPTER 308: PROSTHETICS AND SENSORY AIDS SERVICE

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## 1 PURPOSE AND SCOPE

This document provides Space Planning Criteria for Chapter 308: Prosthetic and Sensory Aids Service as it applies to all medical facilities at the Department of Veterans Affairs (VA).

## 2 DEFINITIONS

Accessible: A site, building, facility, or portion thereof that complies with provisions outlined in the Architectural Barriers Act of 1968 (ABA).

Architectural Barriers Act (ABA): A set of standards developed to insure that all buildings financed with federal funds are designed and constructed to be fully accessible to everyone. This law requires all construction, renovation, or leasing of sites, facilities, buildings, and other elements, financed with federal funds, to comply with the Architectural Barriers Act Accessibility Standards (ABAAS). The ABAAS replaces the Uniform Federal Accessibility Standards (UFAS).

Clinic Stop: A clinic stop is one encounter of a patient with a healthcare provider. Per these criteria, the clinic stop is the workload unit of measure for space planning. One individual patient can have multiple Clinic Stops in a single visit or in one day.

Full-Time Equivalent (FTE): A staffing parameter equal to the amount of time assigned to one full time employee. It may be composed of several part-time employees whose total time commitment equals that of a full-time employee. One FTE equals a 40 hours per week.

Functional Area: The grouping of rooms and spaces based on their function within a clinical service. Typical Functional Areas are Reception Areas, Patient Areas, Support Areas, Staff and Administrative Areas, and Residency Program.

Input Data Statements: A set of questions designed to elicit information about the healthcare project in order to create a Program for Design (PFD) based on the criteria parameters set forth in this document. Input Data Statements could be Mission related, based in the project's Concept of Operations; and Workload or Staffing related, based on projections and data provided by the VHA or the VISN about the estimated model of operation for the facility. This information is processed through mathematical and logical operations in VA-SEPS.

Program for Design (PFD): A space program based on criteria set forth in this document and specific information about Concept of Operations, workload projections and staffing levels authorized.

Prosthetic and Sensory Aids Service: A specialized program designed to provide prosthetic / orthotic services to the disabled beneficiary. Prosthetic services are distinguished as functions related to the replacement of missing parts of the body. Orthotic services are characterized as functions that support existing parts of the body. These services may include the procurement and fabrication of artificial limbs, aids for the blind, hearing aids, upper and lower extremity orthotic devices, wheelchairs, orthopedic shoes, plastic eyes, noses or major facial restorations, eyeglasses, automotive adaptive equipment, and major life support systems such as environmental controls and home dialysis units.

Room Efficiency Factor: A factor that provides flexibility in the utilization of a room to account for patient delays, scheduling conflicts, and equipment maintenance. Common factors are in the 80 to 85% range. A room with 80% room efficiency provides a buffer to

assume that this room would be available 20% of the time beyond the planned operational practices of the room. This factor may be adjusted based on the actual and/or anticipated operations and processes of the room / department.

SEPS (VA-SEPS): Acronym for Space and Equipment Planning System, a digital tool developed by the Department of Defense (DoD) and the Department of Veterans Affairs to generate a Program for Design (PFD) and an Equipment List for a VA healthcare project based on specific information entered in response to Input Data Statements. VA-SEPS incorporates the propositions set forth in all VHA Space Planning Criteria Chapters. VA-SE has been designed to aid healthcare planners in creating a space plan based on a standardized set of criteria parameters.

Workload: Workload is the anticipated number of procedures or suite stops that is processed through a department/service area. The total workload applied to departmental operational assumptions will determine overall room requirements by modality.

### 3 OPERATING RATIONALE AND BASIS OF CRITERIA

- A. Workload Projections or planned services / modalities for a specific VA medical center, hospital or satellite outpatient clinic project are provided by the VA Central Office (VACO) / VISN CARES Capacity Projection Model. The workload projections are generated by methodology based upon the expected veteran population in the respective market/service area. Healthcare planners working on VA medical center, hospital or satellite outpatient clinic projects will utilize and apply the workload criteria set forth herein for identified services and modalities to determine room requirements for each facility.
- B. Space planning criteria have been developed on the basis of an understanding of the activities involved in the functional areas of the Prosthetic and Sensory Aids Service and its relationship with other services of a medical facility. These criteria are predicated on established and/or anticipated best practice standards, as adapted to provide environments supporting the highest quality health care for Veterans.
- C. These criteria are subject to modification relative to development in the equipment, medical practice, vendor requirements, and subsequent planning and design. The selection of the size and type of Prosthetic and Sensory Aids Service equipment is determined by VACO and upon Veterans Health Administration (VHA) anticipated medical needs.
- D. Room capacity per year should be based on:

$$\frac{\text{Operating days per year} \times \text{Hours of operation per day}}{\text{Minutes per clinic stop} / 60 \text{ minutes}} = \text{Number of annual clinic stops}$$

- 1 The general planning model for VA facilities assumes 250 Operating Days per Year and 8 Hours of Operation per Day. Room capacity will fluctuate as hours of operation are modified, i.e., additional capacity may be generated by extending the daily hours of operation within the same physical setting.
- 2 The Basic Room Efficiency Factor for Prosthetic and Sensory Aids Service is 80%.

Example: Assume Fitting / Exam Room for Prosthetic and Sensory Aids Service that averages 15 minutes per clinic stop:

$$\frac{250 \text{ operating days per year} \times 8 \text{ hours of operation per day}}{30 \text{ minutes per clinic stop} / 60 \text{ minutes}} = 4,000 \text{ annual clinic stops}$$

A maximum capacity of 4,000 clinic stops per year, assuming 100% utilization. However, 100% utilization is not realistic to achieve, thus, it is not realistic as a design standard. Apply Room Efficiency Factor for an affiliated facility:

$$4,000 \times 80\% = 3,200 \text{ annual clinic stops.}$$

**TABLE 1: WORKLOAD PARAMETER CALCULATION**

| PROSTHETIC AND SENSORY AIDS SERVICE         | AVERAGE LENGTH OF CLINIC STOP (minutes) | UTILIZATION RATE | MINIMUM WORKLOAD TO GENERATE ONE ROOM |
|---|---|------------------|---------------------------------------|
| Fitting / Exam Room, Soft Goods Fabrication | 30                                      | 80%              | 3,200                                 |

The number of annual clinic stops per room will be used as a criteria parameter to calculate the number of Fitting / Exam Rooms in the Space.

#### 4 INPUT DATA STATEMENTS

##### A. Mission Input Data Statements

1. Is an Eye Fitting Studio authorized? (M)
2. Is a Facial / Body Fitting Studio authorized? (M)
3. Is a Restoration Clinic authorized? (M)
4. Is a Spinal Cord Injury / Disorders Center, at this location, authorized? (M)
5. Is Shoe Modification Materials Storage authorized? (M)
6. Is Computer Aided Design / Computer Aided Manufacturing authorized? (M)
7. Is a Prosthetic and Sensory Aid Service Residency Program authorized? (M)
  - a. How many Student positions are authorized? (S)
  - b. How many Resident / Intern positions are authorized? (S)

##### B. Workload Input Data Statements

1. How many annual Soft Goods Fabrication clinic stops are projected? (W)
2. How many annual Limb Fabrications are projected? (W)

##### C. Staffing Input Data Statements

1. How many Orthotist FTE positions are authorized? (S)
2. How many Lab-assigned Technician FTE positions are authorized? (S)
3. How many Assistant Chief of Service FTE positions are authorized? (S)
4. How many Purchasing Agent FTE positions are authorized? (S)
5. How many Equipment Services (Wheelchair Repair) FTE positions are authorized? (S)

##### D. Miscellaneous Input Data Statements

1. How many FTEs will work on peak shift? (Misc)
2. How many FTE positions are not authorized to have an office or work space? (Misc)

## 5 SPACE CRITERIA

### A. FA 1: Reception Area:

1. **Waiting (WTG03)..... 80 NSF (7.5 NSM)**

*Provide one if the projected number of Fitting / Exam Rooms, Eye Fitting Studios, and Facial Body Fitting Studios is three; provide WTG04 if the projected number of Fitting / Exam Rooms, Eye Fitting Studios, and Facial Body Fitting Studios is four; provide WTG05 if the projected number of Fitting / Exam Rooms, Eye Fitting Studios, and Facial Body Fitting Studios is five; provide WTG06 if the projected number of Fitting / Exam Rooms, Eye Fitting Studios, and Facial Body Fitting Studios is six; provide WTG07 if the projected number of Fitting / Exam Rooms, Eye Fitting Studios, and Facial Body Fitting Studios is seven; provide WTG08 if the projected number of Fitting / Exam Rooms, Eye Fitting Studios, and Facial Body Fitting Studios is eight; provide WTG09 if the projected number of Fitting / Exam Rooms, Eye Fitting Studios, and Facial Body Fitting Studios is nine; provide WTG10 if the projected number of Fitting / Exam Rooms, Eye Fitting Studios, and Facial Body Fitting Studios is ten.*

WTG03: Allocated space accommodates one standard chair @ 9 NSF, one bariatric chair @ 14 NSF, one accessible space @ 10 NSF, and circulation; total three people.

WTG04: Allocated space accommodates two standard chairs @ 9 NSF each, one bariatric chair @ 14 NSF, one accessible space @ 10 NSF, and circulation; total four people.

WTG05: Allocated space accommodates three standard chairs @ 9 NSF each, one bariatric chair @ 14 NSF, one accessible space @ 10 NSF, and circulation; total five people.

WTG06: Allocated space accommodates four standard chairs @ 9 NSF each, one bariatric chair @ 14 NSF, one accessible space @ 10 NSF, and circulation; total six people.

WTG07: Allocated space accommodates five standard chairs @ 9 NSF each, one bariatric chair @ 14 NSF, one accessible space @ 10 NSF, and circulation; total seven people.

WTG08: Allocated space accommodates six standard chairs @ 9 NSF each, one bariatric chair @ 14 NSF, one accessible space @ 10 NSF, and circulation; total eight people.

WTG09: Allocated space accommodates seven standard chairs @ 9 NSF each, one bariatric chair @ 14 NSF, one accessible space @ 10 NSF, and circulation; total nine people.

WTG10: Allocated space accommodates eight standard chairs @ 9 NSF each, one bariatric chair @ 14 NSF, one accessible space @ 10 NSF, and circulation; total ten people.

2. **Reception (RCP02) ..... 260 NSF (24.2 NSM)**

*Provide one for Prosthetic and Sensory Aids Service.*

Allocated NSF accommodates two Receptionist FTEs, patient privacy area, and circulation.

3. **Patient Education Kiosk / Alcove (CLSC1)** .....30 NSF (2.8 NSM)  
*Provide one for Prosthetic and Sensory Aids Service.*
4. **Toilet, Public (TPG01)** .....60 NSF (5.6 NSM)  
*Provide two for Prosthetic and Sensory Aids Service.*

Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, ABA clearances, and circulation. One for male and one for female.

**B. FA 2: Patient Area:**

1. **Fitting / Exam Room, Soft Goods Fabrication (EXRG3)** .....120 NSF (11.2 NSM)  
*Minimum one; provide an additional one for every increment of 3,200 projected annual Soft Goods Fabrication clinic stops. (See Table 1)*
2. **Fitting / Exam Room, Custom Fabrication (EXRG3)** .....120 NSF (11.2 NSM)  
*Provide one for Prosthetic and Sensory Aids Service.*
3. **Dynamic Alignment Room (EXRG3)** .....150 NSF (14.00 NSM)  
*Provide one for Prosthetic and Sensory Aids Service.*
4. **Dressing Room (DR001)** .....35 NSF (3.3 NSM)  
*Provide one for Prosthetic and Sensory Aids Service.*
5. **Toilet, Patient (TPG01)** .....60 NSF (5.6 NSM)  
*Provide one for Prosthetic and Sensory Aids Service.*

Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, ABA clearances, and circulation.

6. **Eye Fitting Studio (EYPL1)** .....100 NSF (9.3 NSM)  
*Provide one if an Eye Fitting Studio is authorized.*

This space is used to display, fit, match and color coordinate artificial eyes. Patient privacy and natural north light are important design considerations.

7. **Facial / Body Fitting Studio (APFR1)** .....200 NSF (18.6 NSM)  
*Provide one if a Facial / Body Fitting Studio is authorized.*

This area includes display and is used to apply casts, fit, construct, and adjust artificial facial or body appliances that need color coordination with adjacent body tones. A hydraulic chair is used for ambulatory patients and space is required to accommodate litter patients. Patient privacy and natural north light are important design considerations.

8. **Laboratory, Restoration (APFB1)** .....300 NSF (27.9 NSM)  
*Minimum NSF; provide an additional 50 NSF per each Lab-assigned Technician FTE position authorized greater than two.*

This laboratory is the technicians' workspace requiring individual workstations and multiple bench and floor type power equipment pieces. Fume hoods are required to exhaust toxic fumes. Access to natural north light is an important design consideration.

9. **Team Evaluation / Multi-purpose Room (TROR1)** .....300 NSF (27.9 NSM)  
*Provide one for Prosthetic and Sensory Aids Service.*

This area is used to view and evaluate patient handicaps. A Regional Evaluation Team consists of eight individuals. This room will also be used for patient examinations and fitting and educational functions when not being used by the Evaluation Team.

10. **Cast Room (OPCR1)**..... **160 NSF (14.9 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*

**C. FA 3: Support Area:**

1. **Clean Supply Room (SRSE1)**..... **80 NSF (7.5 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*

2. **Utility Room, Soiled (USCL1)** ..... **80 NSF (7.5 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*

3. **Storage, Equipment (SRE01)**..... **120 NSF (11.2 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*

4. **Laboratory,  
Prosthetic and Orthotic Fume Room (APLA1)**..... **200 NSF (18.6 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*

This area includes: ovens, lamination area, and cast modification area.

5. **Trash / Recycling Room  
Prosthetic and Orthotic (UTC01)**..... **50 NSF (4.7 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*

This room should be located adjacent to the Prosthetic and Orthotic Laboratory, Fume Room.

6. **Laboratory,  
Prosthetic and Orthotic Dust Room (APMS1)**..... **300 NSF ( 27.9 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*

This area includes: grinders, polishers, saws, sanders, etc.

7. **Laboratory,  
Prosthetic and Orthotic Workstation (APFB1)**..... **100 NSF (37.2 NSM)**  
*Provide one per each Lab-assigned Technician FTE position authorized.*

The Prosthetic and Orthotic Laboratory provides for full fabrication and fitting of prostheses and orthoses. This area includes a casting room, 2-3 casting fitting rooms, CAD/CAM room, general work area with benches and hand / power tools, machine room, cast modification room, lamination room, storage room, supervisory room, and administrative room. A central dust collection and fume exhaust system and / or individual equipment exhaust systems should be provided.

8. **Laboratory,  
Prosthetic and Orthotic Maintenance Room (BMC01)** ..... **150 NSF 14.0 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*

This room includes: Air Compressor, Dust Collection Equipment, and Vacuum Machine.

9. **Storage, Shoe Modification Materials (SRCS1)** ..... **100 NSF ( 9.3 NSM)**  
*Provide one if a Shoe Modification Materials Storage is authorized.*

10. **Workspace, Wheelchair Repair (BMCW1)**.....**200 NSF (18.6 NSM)**  
*Provide one per each Equipment Services (Wheelchair Repair) FTE position authorized.*
11. **Storage, Wheelchair Active (SRE01)** .....**200 NSF (18.6 NSM)**  
*Minimum NSF; provide an additional 200 NSF if SCI is authorized.*
12. **Storage, Dirty Wheelchair / DME Active (SRE01)**.....**200 NSF (18.6 NSM)**  
*Minimum NSF; provide an additional 200 NSF if SCI is authorized.*
13. **Storage, Wheelchair Parts (SRPS1)**.....**200 NSF (18.6 NSM)**  
*Minimum NSF; provide an additional 200 NSF if SCI is authorized.*
14. **Computer Aided Design /  
Computer Aided Manufacturing (APLA1)** .....**200 NSF (18.6 NSM)**  
*Provide one if Computer Aided Design / Computer Aided Manufacturing is authorized.*  
  
Automated Fabrication of Mobility Aids is a CAD/CAM process that uses computerized equipment used to scan and measure residual limbs of patients with amputation. Foam or plaster blanks are carved by computerized lathe to create check and permanent prosthetic sockets that are then fabricated and fitted to the patient.
15. **Sewing Room (APSH1)** .....**120 NSF (11.2 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*
16. **Storage, Stretcher / Wheelchair (SRLW1)** .....**40 NSF (3.8 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*
17. **Storage,  
Orthotics and Prosthetic Parts / Materials (SRPS1)**.....**100 NSF (9.3 NSM)**  
*Minimum NSF; provide an additional 100 NSF if the annual number of Limb Fabrications projected is greater than one hundred.*
18. **Prosthetic Appliance Mailing Area (MRRS1)** .....**80 NSF (7.5 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*
19. **Housekeeping Aids Closet (HAC) (JANC1)**.....**60 NSF (5.6 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*

**D. FA 4: Staff and Administrative Area:**

1. **Office,  
Prosthetic and Sensory Aids Service Chief (OFA09)**.....**100 NSF (9.3 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*
2. **Office, Prosthetic and Sensory Aids Service  
Assistant Chief (OFA09)** .....**100 NSF (9.3 NSM)**  
*Provide one per each Assistant Chief of Service FTE position authorized.*
3. **Waiting (WTG03)**.....**80 NSF (7.5 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*  
  
Allocated space accommodates one standard chair @ 9 NSF, one bariatric chair @ 14 NSF, one accessible space @ 10 NSF, and circulation; total three people.
4. **Workstation, Secretary (OFA07)** .....**56 NSF (5.3 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*



5. **Workstation, Purchasing Agent (OFA07)** ..... **56 NSF (5.3 NSM)**  
*Provide one per each Purchasing Agent FTE position authorized.*
6. **Workstation, Restoration Clinic (OFA07)** ..... **56 NSF (5.3 NSM)**  
*Provide one if a Restoration Clinic is authorized.*
7. **Workstation, Orthotic Lab Technician (OFA07)**..... **56 NSF (5.3 NSM)**  
*Provide one per each Orthotist FTE position authorized.*
8. **Conference Room (CFR01)**..... **240 NSF (22.3 NSM)**  
*Provide one for Prosthetic and Sensory Aids Service.*  
  
*Allocated NSF accommodates six conference chairs @ 7.5 NSF each, two 5'-0" x 2'-0" tables at 10 NSF each, one credenza @ 8 NSF, and circulation; total six people.*
9. **Lounge, Staff (SL001)**..... **80 NSF (7.5 NSM)**  
*Minimum NSF; provide an additional 15 NSF per each Prosthetic and Sensory Aids Service FTE position working on peak shift greater than five; maximum 210 NSF.*
10. **Locker Room, Staff (LR001)**..... **80 NSF (7.5 NSM)**  
*Minimum NSF if total number of Prosthetic and Sensory Aids Service FTE positions not authorized to have office or work space is between five and thirteen; provide an additional 6 NSF per each Prosthetic and Sensory Aids Service FTE position not authorized to have office or work space is greater than thirteen.*  
  
*Provide locker space only for those FTEs without assigned office or work space. For less than five FTE combine Locker Room facilities with adjacent department or sum in chapter 410.*
11. **Toilet, Staff (TNPG1)**..... **60 NSF (5.6 NSM)**  
*Minimum one; provide an additional one for every increment of fifteen Prosthetic and Sensory Aids Service FTE positions working on peak shift greater than fifteen.*  
  
*Allocated NSF accommodates one accessible toilet @ 25 NSF, one wall-hung lavatory @ 12 NSF, ABA clearances, and circulation.*

## 6 PLANNING AND DESIGN CONSIDERATIONS

- A. Net-to-department gross factor (NTDG) for Prosthetics and Sensory Aids Service is **1.25**. This number when multiplied by the programmed net square foot (NSF) area, determines the departmental gross square feet.
- B. For efficiency in programming and planning combine and co-locate waiting, reception, and restroom functions and spaces of related services.
- C. The Prosthetic and Sensory Aids Service should be located near the main entrance to the facility in order to reduce the travel distance to the service for disabled veterans. Direct access to Ambulatory Care and Physical Medicine and Rehabilitation Services is desirable.
- D. Patients requiring Prosthetic and Orthotic devices require increased maneuvering space. This should be taken into consideration when designing space within the service.

- E. Configure patient waiting areas to provide clustered seating in order to eliminate large waiting spaces, reduce noise and confusion, and improve the general patient environment.
- F. Patient confidentiality should be maintained when providing personal information to interview clerks and/or other staff.
- G. A strong relationship between Prosthetics and Sensory Aids Service, Physical Medicine and Rehabilitation Service and the SCI Patient Care Unit should be maintained. These services should be located within close proximity to each other.
- H. Locate staff areas to be convenient to staff but separate from patient areas.

**7 FUNCTIONAL RELATIONSHIPS**

Relationship of Prosthetic and Sensory Aids Service to services listed below:

**TABLE 2: FUNCTIONAL RELATIONSHIP MATRIX**

| SERVICES  | RELATIONSHIP | REASON  |
|---|--------------|---------|
| Parking   | 1            | H       |
| Nursing Units – SCI (Long Term Care)                | 2            | A, H, I |
| Physical Medicine and Rehabilitation                | 2            | A, H, I |
| Ambulatory Care                                     | 3            | G, I    |
| Audiology and Speech Pathology                      | 3            | H, I    |
| Domiciliary   | 3            | H, I    |
| Eye Clinic  | 3            | G, H, I |
| Hospital Based Home Care                            | 3            | H, I    |
| Nursing Units – Nursing Home Care                   | 3            | H, I    |
| Pharmacy Service                                    | 3            | H, I    |
| Supply Service                                      | 3            | B       |
| Cardiology Laboratory                               | 4            | G       |
| ENT Clinic  | 4            | G       |
| Nursing Units - MS&N                                | 4            | G       |
| Nursing Units – SCI (Intensive Care and Sustaining) | 4            | G       |
| Respiratory Care Program                            | 4            | G       |
| Nursing Units – Intensive Care                      | X            | L       |
| Nursing Units – Mental Health and Behavioral        | X            | L       |
| Surgical Service                                    | X            | L       |

Legend:

Relationship:

- 1. Adjacent
- 2. Close / Same Floor
- 3. Close / Different Floor Acceptable
- 4. Limited Traffic
- X. Separation Desirable

Reasons:

- A. Common use of resources
- B. Accessibility of supplies
- C. Urgency of contact
- D. Noise or vibration
- E. Presence of odors or fumes
- F. Contamination hazard
- G. Sequence of work
- H. Patient’s convenience
- I. Frequent contact
- J. Need for security
- K. Others (specify)
- L. Closeness inappropriate

## 8 FUNCTIONAL DIAGRAM

