

**CHAPTER 204: VETERANS HEALTH ADMINISTRATION: AUDIOLOGY AND SPEECH  
PATHOLOGY SERVICE**

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## 1 PURPOSE AND SCOPE

This document outlines Space Planning Criteria for Chapter 204: Audiology and Speech Pathology Service. It applies to all medical facilities at the Department of Veterans Affairs (VA).

## 2 DEFINITIONS

- A. Assistive Devices/Assistive Listening Devices: Assistive devices include, but are not limited to, alarm systems, alarms clocks, doorbell amplifiers and signalers, telephone amplifiers and signalers, and television amplifiers. Assistive listening devices include personal amplifiers, FM systems, voice carry over phones (VCO), teletype devices (TTY), and teletext devices for the deaf (TDD).
- B. Audiology and Speech Pathology: Audiology and Speech Pathology is typically a combined service or equivalent service-level department. Audiology and Speech-language Pathology may be organizationally and physically separated.
- C. Audiology: A clinical specialty involving the prevention, identification, evaluation, and remediation, and treatment of hearing loss, tinnitus, and vestibular disorders.
- D. Audiologist: A health care professional specializing in the prevention, identification, evaluation, treatment, and remediation of auditory and vestibular disorders.
- E. Clinic Stop: A clinic stop is one encounter of a patient with a health care provider. Per these criteria, the clinic stop is the workload unit of measure for space planning. One individual patient can have multiple clinic stops (encounters) in a single visit or in one day.
- F. CAT (Computer Aided Therapy): Computer aided therapy is the use of computers and software to assist patients in achieving treatment goals or learning to use computers and computer supported devices. Includes computer access training.
- G. Concept of Operations: A user-developed guide to the functional operation of the VA health care facility. It defines the function of the facility and the scope of clinical services to be provided in the new or remodeled space.
- H. Departmental Net to Gross (DNTG) Conversion Factor: A parameter, determined by the VA for each space planning criteria chapter, used to convert the programmed Net Square Foot (NSF) area to the Department Gross Square Foot (DGSF) area. The **DNTG** Departmental Conversion Factor for **Audiology and Speech Pathology** is **1.55**.
- I. Electrophysiology: Special diagnostic tests involving the measurement of auditory evoked potentials from the cochlea, auditory nerve, or brain including electrocochleography, auditory brainstem response (ABR), middle latency potentials (MLR), late potentials, and other specialized evoked potential techniques.
- J. 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 40 hours per week.

- K. 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, Residency and / or Externship (training) Program Areas.
- L. Input Data Statement: 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. This information is processed through mathematical and logical operations in VA-SEPS.
- M. Otoacoustic Emissions: Otoacoustic emissions (OAE) are electrical potentials generated in the inner ear. Clinically, two OAE are measured: transient-evoked OAE (TOAE) and distortion product OAE (DPOAE). These measures are used to evaluate hearing loss objectively.
- N. Posturography: Posturography (also known as computerized dynamic posturography) is a battery of tests to evaluate balance function using a series of tasks to simulate situations encountered in daily life. Tests measure sensory organization, motor control, and proprioceptive aspects of balance. Tests can be used to evaluate postural stability and movement strategies in patients with disequilibrium or prone to falling.
- O. 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.
- P. 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.
- Q. 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 Questions. VA-SEPS incorporates the propositions set forth in all VA Space Planning Criteria chapters. VA-SEPS has been designed to aid healthcare planners in creating a space plan based on a standardized set of criteria parameters.
- R. Speech-Language Pathology: A clinical specialty involving the prevention, identification, evaluation, treatment, and rehabilitation of speech, language, voice, fluency, cognitive, and swallowing disorders.

- S. Speech-Language Pathologist: A health care professional specializing in the prevention, identification, evaluation, treatment, and rehabilitation of speech, language, voice, fluency, cognitive, and swallowing disorders.
- T. Vestibulography: Vestibulography is a general class of special balance tests including electronystagmography, videonystagmography, and sinusoidal vertical axis rotational testing (rotary chair). These tests record nystagmus and eye movements to diagnosis peripheral and central vestibular disorders.
- U. Workload: Workload is the anticipated number of encounters or visits that is processed through a department/service area. The total workload applied to departmental operational assumptions will determine overall room requirements.

### 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. Health care planners working on VA medical center, hospital or satellite outpatient clinic projects will utilize and apply the workload based criteria set forth herein for identified services 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 Audiology and Speech-Language Pathology 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, clinical practice, vendor requirements, and subsequent planning and design. The selection of the size and type of Audiology and Speech-Language Pathology equipment is determined by VACO and upon Veterans Health Administration (VHA) anticipated clinical 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 Audiology and Speech Pathology Service is 80%.
3. Average length of procedure for Audiology Clinic is 69 minutes.

Example: Assume an exam / treatment room for Audiology Clinic that averages 69 minutes per clinic stop:

$$\frac{250 \text{ Operating days per year} \times 8 \text{ Hours of operation per day}}{69 \text{ Minutes per clinic stop} / 60 \text{ minutes}} = \text{Number of annual clinic stops}$$

A maximum capacity of 1750 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:

$$1750 \times 80\% = 1400 \text{ annual clinic stops.}$$

**TABLE 1: WORKLOAD PARAMETER CALCULATION**

	<b>AVERAGE LENGTH OF CLINIC STOP (minutes)</b>	<b>UTILIZATION RATE</b>	<b>MINIMUM WORKLOAD TO GENERATE ONE ROOM</b>
Audiology	69	80%	1400
Speech Pathology	128	80%	750

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

#### 4 PROGRAM DATA REQUIRED (Input Data Questions)

##### A. Mission Input Data Statements

1. Is a combined Audiology and Speech Pathology Service authorized? (M)
2. Is Cerumen Management authorized? (M)
3. Is Posturography authorized? (M)
4. Is Sinusoidal Vertical Axis Rotational Testing authorized? (M)
5. Is Speech Analysis authorized? (M)
6. Is Speech-Language Pathology Group Therapy authorized? (M)
7. Is a Residency Program authorized? (M)
  - a. How many Trainee FTE positions are authorized? (S)
8. Is use of Audiometric Examination Booths authorized? (M)
9. Are Speech Pathology Special Procedures authorized? (M)

##### B. Workload Input Data Statements

1. How many annual Audiology Clinic stops are projected? (W)
2. How many annual Speech-Language Pathology Clinic stops are projected? (W)

##### C. Staffing Input Data Statements

1. How many Audiologist FTE positions are authorized? (S)
2. How many Speech-Language Pathologist FTE positions are authorized? (S)
3. How many Speech-Language Pathology Technician / Assistant FTE positions are authorized? (S)
4. How many Audiology Health Technician FTE positions are authorized? (S)

5. How many Administrative Assistant FTE positions are authorized? (S)
6. How many Clerical FTE positions are authorized? (S)

## 5 SPACE CRITERIA

### A. Reception Areas:

1. **Waiting (WRC01)**..... **60 NSF (5.6 NSM)**  
*Minimum NSF; provide an additional 55 NSF per each projected Exam / Treatment Room greater than two.*

An additional 55 NSF allocates 25 NSF for one accessible seat and 30 NSF for two standard seats per Exam / Treatment Room greater than two.

2. **Receptionist / Control Clerk (RECP1)**..... **80 NSF (7.4 NSM)**  
*Minimum NSF; provide an additional 10 NSF for each whole increment of two projected Exam / Treatment Rooms greater than two; maximum 150 NSF.*

3. **Toilet, Public (TLTU1)**..... **50 NSF (4.7 NSM)**  
*Provide one per waiting area.*

### B. Audiology Clinic: Patient Areas:

1. **Therapy / Office, Audiologist (OFD03)** ..... **120 NSF (11.2NSM)**  
*Provide one per Audiologist FTE position authorized.*

Offices are used by staff audiologists to provide one-on-one therapy, conduct patient interviews, complete case histories, plan and coordinate care, review patient health records, write reports and process health record information, maintain telephone contacts and counsel patients and families.

2. **Audiology Health Technician (OFD03)** ..... **120 NSF (11.2 NSM)**  
*Provide one per Health Technician FTE authorized.*

This space provides for patient examination as well as office space for the Audiology Health Technician.

3. **Suite, Audiometric Examination (TREN2)** ..... **260 NSF (24.2 NSM)**  
*Provide one if at least one Audiologist FTE position is authorized; provide an additional one for each whole increment of 1,400 Audiology clinic stops greater than 1,400.*

Larger sound suites may be provided if authorized.

4. **Booth, Audiometric Examination (PEHS2)**..... **130 NSF (12.1 NSM)**  
*Provide one per each whole increment of 1,400 annual projected Audiology clinic stops; (see Table 1), and if use of an Audiometric Examination Booth is authorized.*

A suite consists of an examination room and a control room. A booth consists of an examination room only. Prefabricated sound suites / booths are used for

audiometric examinations, acoustic immittance tests, otoacoustic emission tests, hearing aid fitting and modification, and for research activities that require a highly controlled acoustic and electromagnetically shielded environment. When compensation and pension exams will be performed, audiometric suites must be provided. Booths will be provided only when design limitations preclude installation of suites. Special attention must be given to the privacy, acoustic, and electromagnetic radiation environments in which sound suites/booths will be located. See "Booth Audiometric Examination Specifications" (IB 11-87) for technical specifications for audiometric sound rooms.

**5. Programming / Fitting (HAFR1).....120 NSF (11.2 NSM)**

*Minimum NSF; provide an additional 40 NSF if the annual projected number of Audiology clinic stops is greater than 1,400.*

This room accommodates the special equipment used to program and fit digital hearing aids and bioelectric implants.

**6. Auditory Rehabilitation (OPMH1).....240 NSF (14.0 NSM)**

*Minimum NSF; provide an additional 40 NSF if the number of annual projected Audiology clinic stops is greater than 1,400.*

This room accommodates the special equipment used to fit assistive devices and assistive listening devices and to demonstrate such devices in a simulated home environment. This room is used by the audiologist to provide counseling and auditory rehabilitation or other therapy to groups of patients and / or family members. This room can also be configured for individual therapy.

**7. Instrument Calibration and Storage (BHER1) .....140 NSF (13.1 NSM)**

*Minimum NSF; provide an additional 60 NSF if the number of annual projected Audiology clinic stops is greater than 1,400*

This area accommodates the facilities required to maintain, modify, calibrate and store clinical and research equipment and supplies.

**8. Electrophysiology (OPAE1).....120 NSF (11.2 NSM)**

*Provide one per Audiology Clinic.*

This room accommodates the specialized equipment utilized in measuring auditory evoked potentials, such as brainstem auditory evoked potentials (ABR) or electrocochleography (ECOG) for diagnostic purposes.

**9. Hearing Aid Fabrication / Modification (HATL1) .....150 NSF (14.0 NSM)**

*Minimum NSF; provide one per Audiology Clinic. Provide an additional 60 NSF if the number of annual projected Audiology clinic stops is greater than 1,400.*

This room accommodates the special equipment used to fabricate and modify custom hearing aids and ear molds. This room also provides storage for parts and supplies.

**10. Posturography (EXRG3) .....150 NSF (14.0 NSM)**

*Provide one per Audiology Clinic and if Posturography is authorized.*

This room accommodates special equipment used to evaluate balance disorders.

11. **Vestibulography (EXRG3)** ..... **150 NSF (14.0 NSM)**  
*Provide one per Audiology Clinic.*

This room accommodates the special equipment utilized in performing electronystagmography (ENG) or videonystagmography (VNG) for patients with balance or vestibular disorders.

12. **Sinusoidal Vertical Axis Rotational Test (Rotary Chair) (EXEN1)** ..... **240 NSF (22.3 NSM)**  
*Provide one per Audiology Clinic and if Sinusoidal Vertical Axis Rotational Tests are authorized.*

This room accommodates special equipment utilized in performing vertical axis rotational tests for patients with vestibular disorders.

13. **Cerumen Management (EXEN1)** ..... **140 NSF (13.1 NSM)**  
*Provide one if Cerumen Management is authorized*

This accommodates special equipment for Cerumen management (ear wax removal). This room is typically equipped as an ENT exam room.

14. **Toilet, Patient (TLTU1)**..... **50 NSF (4.7 NSM)**  
*Provide one per Audiology Clinic.*

This Patient Toilet is associated with vestibulography.

C. Speech-Language Pathology Clinic: Patient Areas:

1. **Therapy / Office, Speech-Language Pathologist (EXOS1)** ..... **120 NSF (11.2 NSM)**  
*Provide one per Speech-Language Pathologist FTE position authorized.*

Offices are used by staff speech-language pathologists to provide one-on-one therapy, conduct patient interviews, complete case histories, to plan and coordinate care, review patient health records, write reports and process health record information, maintain telephone contacts, and counsel patients and families.

2. **Speech- Language Pathology Assistant (EXOS1)**..... **120 NSF (11.2 NSM)**  
*Provide one per Speech-Language Pathology Health Assistant FTE position authorized.*

This space provides for patient examination as well as office space for the Speech-Language Pathology Health Technician.

3. **CAT (Computer Aided Therapy) Workroom (WRCH1)**..... **120 NSF (11.2 NSM)**  
*Provide one per Speech-Language Pathology Clinic.*



This area provides workstations and associated CAT storage. This area is formerly known as Computer Access.

4. **Speech Analysis (EXOS1) .....200 NSF (18.6 NSM)**  
*Provide one per Speech-Language Pathology Clinic if Speech Analysis is authorized.*

This room accommodates special equipment to measure and analyze the acoustic properties of speech and voice for the purpose of diagnostic evaluation and treatment.

5. **Special Procedures (TREN1) .....240 NSF (22.3 NSM)**  
*Provide one if Special Procedures are authorized in Speech-Language Pathology Clinic. Provide an additional one if projected number of annual Speech-Language Pathology clinic stops is greater than 1,500. Refer to Table 1.*

This room accommodates the special equipment used for instrumental evaluation and treatment including laryngoscopy, stroboscopy, fiberoptic Endoscopy (FEES), surface electromyography (SEMG), cervical auscultation, respiration and swallow coordination assessment, manometry, and other diagnostic equipment. This room also accommodates digital imaging equipment to view radiology images. This room is also used for tracheo-esophageal puncture voice prosthesis fitting procedures.

6. **Speech-Language Pathology, Individual Therapy (OFDC2) .....130 NSF (12.1 NSM)**  
*Provide one for each whole increment of 750 annual projected Speech-Language Pathology clinic stops.*

7. **Speech-Language Pathology Group Therapy (OPMH1) .....225 NSF (20.9 NSM)**  
*Provide one if Speech Language Pathology Group Therapy is authorized.*

8. **Observation Core (OPMH3) .....50 NSF (4.7 NSM)**  
*Provide one for Speech-Language Pathology Clinic.*

This room permits trainees to observe therapy. The observation core should be adjacent to the individual/group therapy rooms to allow trainees to observe therapy/treatment.

D. Support Areas:

1. **Storage, Equipment and Supplies (SRSE1) .....100 NSF (9.4 NSM)**  
*Provide one per Audiology Service and an additional 100 NSF per Speech-Language Pathology Service; provide two if Audiology and Speech Pathology are a combined Service.*

These areas are used for storing supplies, materials, device inventories, parts, and equipment.

E. Staff and Administrative Areas:

1. **Office, Chief of Service (OFC01)**..... **150 NSF (14.0 NSM)**  
*Provide one per Audiology and Speech Pathology Service.*  
  
This office is used for program administration, meeting with staff and visitors, and interviewing / counseling staff and patients.
2. **Office, Secretary / Waiting (SEC01)**..... **120 NSF (11.2 NSM)**  
*Provide one per Audiology and Speech Pathology Service.*
3. **Office, Administrative Assistant (OFA01 / OFA02)**..... **100 NSF (9.2 NSM)**  
*Provide one per Administrative Assistant FTE position authorized; provide OFA01 if standard furniture is authorized; provide OFA02 if Systems furniture is authorized.*
4. **Office, Clerical (OFA03)**..... **80 NSF (7.5 NSM)**  
*Provide one per Clerical FTE position authorized.*

F. Staff Lockers, Lounges and Toilets:

The spaces below provide programming of Lounge, Lockers, and Toilets at department / service / chapter level. Alternatively, sum all departments/services data for Lockers, Lounges and Toilets, and program space in Chapter 410-EMS Lockers, Lounges, Toilets and Showers. Either/or – do not duplicate space.

1. **Lounge, Staff (SL001)**..... **80 NSF (7.5 NSM)**  
*Minimum NSF; provide an additional 15 NSF per each FTE position authorized greater than five; maximum 210 NSF.*  
  
For less than five FTE combine Lounge facilities with adjacent department or sum in chapter 410.
2. **Locker Room, Staff (LR001)**..... **80 NSF (7.5 NSM)**  
*Minimum NSF if total number of Clerical FTE positions authorized is between five and thirteen; provide an additional 6 NSF per Technician FTE position authorized greater than thirteen.*  
  
Provide locker space only for those FTEs without assigned office or cubicle space. For less than five FTE combine Locker Room facilities with adjacent department or sum in chapter 410.
3. **Toilet, Staff (TLTU1)**..... **50 NSF (4.7 NSM)**  
*Minimum one; provide an additional staff toilet for each increment of five FTE positions authorized greater than fifteen.*

G. Residency Program: Training – Educational Areas:

The spaces below provide programming of educational spaces at department / service / chapter level. Alternatively, sum all departments/services data for Lockers, Lounges and Toilets, and program space in Chapter 402-Educational Facilities. Either/or – do not duplicate space.

1. **Cubicle, Trainee (OFA03)**.....**64 NSF (5.9 NSM)**  
*Provide one per Trainee FTE position authorized and if Residency Program is authorized.*

Trainee FTE includes paid and unpaid (WOC) students, externs, pre-doctoral fellows, and post-doctoral fellows.

2. **Conference / Classroom (CRA02)** .....**300 NSF ( 27.9 NSM)**  
*Provide one if Residency Program is authorized and if Residency Program is authorized.*

Conference rooms should be planned for sharing among adjacent departments with Training/Residency/Educational programs.

## 6 PLANNING AND DESIGN CONSIDERATIONS

- A. Net-to-department gross factor (**NTDG**) for **Audiology and Speech Pathology** is **1.55**. This number when multiplied by the programmed net square foot (NSF) area determines the departmental gross square feet.
- B. Audiology Clinics must be carefully located with regard to proximity of intrusive noise and electromagnetic radiation sources. Audiology Clinic areas will be carpeted (except for vestibulography and ceruman management areas). Other acoustic controls will be considered to minimize ambient noise in the clinic area. Waiting areas should be physically separated from clinic areas. Sound suites/booths shall be recessed into pits to provide unencumbered access. If not feasible, floors must be raised to eliminate sills.
- C. Waiting areas in Speech-Language Pathology Clinics should be physically separated from clinic areas.
- D. Speech analysis room (Speech-Language Pathology) requires acoustic controls to minimize ambient noise.
- E. Special Procedures (Speech-Language Pathology) room should not be carpeted. Room should be equipped with oxygen and suction. Room should be equipped with refrigerator/freezer drawer for storage of perishable diagnostic materials.

## 7 FUNCTIONAL RELATIONSHIPS

Relationship of Audiology and Speech Pathology to services listed below:

**TABLE 2: FUNCTIONAL RELATIONSHIP MATRIX**

SERVICES	RELATIONSHIP	REASON
Ambulatory Care	2	G,H,I
ENT	2	G,H,I
Physical Medicine and Rehabilitation Service	3	G,H
Dental Service	3	G,H,I
Nursing Units (All)	3	H,I
Psychology Service	3	H
Radiology Service	3	H
Canteen Service	X	D,E,L
Dialysis Center	X	D
Electroencephalography Lab (EEG)	X	L
Engineering Service	X	D,E,F
Information Resources Management Service (IRMS)	X	L
Laboratory Service	X	D,F
Lobby	X	D,L
Magnetic Resonance Imaging (MRI)	X	F,L

**Legend:**

**Relationship**

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

**Reasons:**

(Use as many as appropriate)

- 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

