

VHA AUDIOLOGY AND SPEECH-LANGUAGE PATHOLOGY SERVICES

- 1. REASON FOR ISSUE.** This Veterans Health Administration (VHA) Handbook defines Audiology and Speech Pathology Services and describes the procedures for managing audiology and speech-language pathology services to optimize the delivery of consistent and high quality care to Veterans with hearing, tinnitus, balance, speech, language, voice, fluency, cognitive, and swallowing disorders.
- 2. SUMMARY OF CHANGES.** This new VHA Handbook defines the scope of the Audiology and Speech Pathology Service and describes the procedures for providing hearing, tinnitus, balance, speech, language, voice, fluency, cognitive, and swallowing services in VHA medical facilities.
- 3. RELATED ISSUES.** VHA Directive 1170 (to be published).
- 4. RESPONSIBLE OFFICE.** The Office of Patient Care Services, Chief Consultant, Rehabilitation Services (117) is responsible for the contents of this VHA Handbook. Questions may be referred to the Director, Audiology and Speech Pathology Service at 202-745-8578.
- 5. RESCISSIONS.** VHA Manual M-2, Part XVIII, Chapter 3, is rescinded.
- 6. RECERTIFICATION.** This VHA Handbook is scheduled for re-certification on or before the last working day of March 2016.

Robert A. Petzel, M.D.
Under Secretary for Health

DISTRIBUTION: E-mailed to the VHA Publications Distribution List 3/23/2011

CONTENTS**VHA AUDIOLOGY AND SPEECH-LANGUAGE PATHOLOGY SERVICES**

PARAGRAPH	PAGE
1. Purpose	1
2. Background	1
3. Definitions	3
4. Scope	3
5. Strategic Goals	4
6. Planning Assumptions	5
7. Responsibilities of Director, Audiology and Speech Pathology Service	5
8. Responsibilities of the VISN Director	6
9. Responsibilities of the Medical Center Director	6
10. Responsibilities of the Chief, Audiology and Speech Pathology Service	8
11. Recruitment, Appointment, Promotion, and Advancement	9
12. Credentialing	12
13. Clinical Privileging	16
14. Scope of Practice	18
15. Resource Management	28
16. Prosthetic Devices	30
17. Education and Training	37
18. Supervision of Audiologists and Speech-Language Pathologists Preparing for Licensure	43
19. Field Advisory Council	44

CONTENTS (Continued)

PARAGRAPH	PAGE
20. Research and Development	45
21. References	48
APPENDICES	
A Provision of hearing Aids by Non-VA Sources	A-1
B Documentation and Supervision Requirements for Trainees	B-1
C Compensation and Pension Examination Procedures	C-1
D Booth Audiometric Examination Specifications (IB 11-87, June, 1983)	D-1

VHA AUDIOLOGY AND SPEECH-LANGUAGE PATHOLOGY SERVICES

1. PURPOSE

This Veterans Health Administration (VHA) Handbook defines procedures for managing audiology and speech-language pathology services in VHA to optimize the delivery of consistent and high quality care to Veterans with hearing, balance, speech, language, voice, fluency, cognitive, and swallowing disorders.

2. BACKGROUND

a. The increasing number of older Veterans and consequent increased prevalence of hearing, balance, speech, language, cognitive, and swallowing disorders caused by a variety of illnesses, diseases, and injuries underscores the need for cost-effective, readily accessible, comprehensive, and high quality audiology and speech-language pathology care.

b. One in every ten (28 million) Americans has hearing loss. As baby boomers reach retirement age, this number is expected to rapidly climb and nearly double by the year 2030. One in three people older than age 60 and half of those older than age 85 have hearing loss. Among seniors, hearing loss is the third most prevalent, but treatable disabling condition, behind arthritis and hypertension.

c. Auditory system disabilities, including hearing loss and tinnitus, are among the most common service-related disabilities.

d. Over 12 million Americans have tinnitus. Of these, at least 1 million experience it so severely that it interferes with their daily activities.

e. Dizziness is the most common complaint of people over age 60 and is the second most common diagnosis for a Medicare hospital admission. Forty percent of falls are due to dizziness and balance disorders. Falls are the leading cause of injury and death for people over 55 and half of elderly patients admitted for hip fractures become chronic patients and nearly half die within one year.

f. Communication involves speech production and language and the same peripheral mechanisms are shared for speech and swallowing. Virtually any disease or trauma to the neurological system has the potential to cause a breakdown or disorder in the motor speech, cognitive communication, language or feeding and swallowing process. The accurate identification of communication and swallowing disorders by a speech-language pathologist often provides confirmation of a specific disease or neurological diagnosis, may offer evidence to question a neurological diagnosis, or signal the need for further diagnostic evaluation.

g. Speech problems are one of a variety of neurological symptoms associated with Parkinson's Disease and amyotrophic lateral sclerosis (ALS). One percent of the population over the age of 50, or 50,000 Americans, are diagnosed with Parkinson's Disease each year. Amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's Disease, is a rapidly progressive neurodegenerative disease of unknown etiology. One quarter of individuals suffering from ALS manifest speech and swallowing problems as the most common symptom.

As the disease progresses, speech-language pathologists assist with recommendations for safe oral intake of nutrition and hydration, the use of non-oral means nutrition to receive nutrition and hydration, non-verbal communication strategies such as computerized speech generating devices, and assistance with communication and swallowing while on ventilators.

h. Multiple Sclerosis (MS) is an acquired, inflammatory, and demyelinating disease of the central nervous system and the disease is frequently diagnosed in young to middle-aged adults and is the third leading cause of disability in this age group. In 1992, it was estimated that there were 250,000 to 350,000 individuals with MS in the United States. While MS in the early phases may be remitting-relapsing, various combinations of motor speech, sensory and cognitive impairments may be observed. Twenty-nine to 67 percent of the patients report changes in speech noted in the early phases of the disease; and the prevalence of speech problems increase as the disease progresses. Approximately half of the MS population experiences cognitive changes. Ability to self-feed (transport of the food from the plate to the mouth) is frequently identified as a problem for individuals with MS with chewing problems noted in 19 percent of the early stages of the disease and 51 percent reported in the late stages of the disease

i. Dementia symptoms affect an estimated four million adults in the United States and the prevalence increases later in life. It is projected that the number of individuals with dementia in the United State will range from 7.5 million to 14.4 million in the year 2050. More than half of residents in extended care facilities have cognitive impairments.

j. The American Cancer Society estimates that there will be 36,540 new cases of oral or pharyngeal cancer and 12,720 cases of laryngeal cancer in 2010. These estimates account for three percent of newly diagnosed cancers. The incidence of head and neck cancers is higher in men than women with women having a higher incidence of thyroid cancer than men. It is estimated that there will be 16,640 new cases of esophageal cancer and 22,020 new cases of brain and other nervous systems cancers.

k. Swallowing disorders (dysphagia) occur in approximately 51 to 73 percent of patients with stroke and 75 percent of nursing home patients. Swallowing disorders are associated with increased mortality and morbidities such as malnutrition, dehydration, and pulmonary complications such as aspiration pneumonia. More than 60,000 people die annually from complications related to swallowing disorders, making it the sixth leading cause of death in the United States. Pneumonia accounts for about 34 percent of all stroke-related deaths and represents the third highest cause of death during the first month after a stroke.

l. Emerging challenges for VHA audiology programs include increasing prevalence of age-related and noise-induced hearing loss and tinnitus; increasing demand for compensation and pension services; increasing demand for care of TBI-related symptoms (hearing loss, dizziness, tinnitus, processing disorders); rapidly changing treatment technologies and paradigms; changing care-delivery models (e.g., patient-centered medical home and Telehealth and rapidly changing information technology and systems); and an aging workforce.

m. Emerging challenges for speech-language pathology include expanding responsibilities in polytrauma, traumatic brain injury, and swallowing disorders; shifting care priorities (outpatient care, shorter lengths of stay, influx of war-injured Veterans); expanding scope of practice (e.g.

palliative care, respiratory care, home care, decision making capacity); changing care-delivery models (e.g., patient-centered medical home, home-based care, Telehealth, co-treatment), staff shortages, and an aging workforce.

3. DEFINITIONS

a. **Audiology and Speech-Language Pathology Care Provider.** An audiology and speech-language pathology care provider is a licensed audiologist or speech-language pathologist.

b. **Audiologist.** An audiologist is a person who, by virtue of academic degree, clinical training, and professional credentials, is uniquely qualified to provide a comprehensive array of professional services related to the prevention of hearing loss and the identification, evaluation, diagnosis, and treatment of persons with impairment of auditory and vestibular function, and to the prevention of impairments associated with them. The central focus of the profession of audiology is concerned with all auditory impairments and their relationship to disorders of communication.

c. **Speech-Language Pathologist.** A speech-language pathologist is a person who, by virtue of academic degree, clinical training, and professional credentials, is uniquely qualified to provide a comprehensive array of professional services related to human communication and swallowing. This includes the identification, evaluation, diagnosis, and treatment of persons with speech, voice, language, fluency, cognitive, swallowing, and respiratory disorders. The domain of speech-language pathology includes human communication behaviors and disorders, as well as swallowing or other upper aerodigestive functions and disorders. Speech-language pathologists are the recognized experts in post-surgical or post-radiation swallowing and voice rehabilitation using various rehabilitative options.

d. **Team.** A team is a group of health care providers working cooperatively together.
NOTE: Team, as used in this Handbook, should not be construed to imply any particular organization or leadership group.

4. SCOPE

The mission of the VHA Audiology and Speech-Language Pathology Service is to optimize the functioning of Veteran patients. In doing this, the Department of Veterans Affairs (VA) strives to be the audiology and speech-language pathology care provider of choice for the Veteran.

a. **Audiology Services.** The overall objective of audiology services is to optimize individuals' ability to function through the provision of integrated, specialized services. Audiologists work to improve quality of life by reducing impairment, activity limitations, participation restrictions, and environmental barriers of the Veterans they serve.

b. **Speech-Language Pathology Services.** The overall objective of speech-language pathology services is to optimize individuals' ability to function through the provision of integrated, specialized services. Speech-language pathologists work to improve quality of life by

reducing impairment, activity limitations, participation restrictions, and environmental barriers of the Veterans they serve.

5. STRATEGIC GOALS

a. The goals of Audiology and Speech-Language Pathology Service are linked to VA, VHA, and Patient Care Services (PCS) strategic frameworks. Networks and other units of VHA care are encouraged to develop their audiology and speech-language pathology care objectives utilizing national, network, and facility strategic goals, objectives, and initiatives in order to facilitate local planning for the provision of quality audiology and speech-language pathology care.

b. In particular, Audiology and Speech-Language Pathology Service strives to:

(1) Provide patient-centered, results-driven, and forward-looking audiology and speech-language pathology care in a timely and equitable manner to all eligible Veterans.

(2) Continuously improve the quality and safety of audiology and speech-language pathology services by using best practices, employing evidence-based practices, and engaging in a culture of continuous quality improvement.

(3) Continuously improve Veterans and family satisfaction with audiology and speech-language pathology services by promoting patient and family-centered care through excellent customer service.

(4) Promote diversity, excellence, and satisfaction in the audiology and speech-language pathology workforce by fostering innovation, professional training and development, and professional recognition.

(5) Promote excellence in business practices through administrative, financial, and clinical efficiencies by adopting system re-design strategies, standardizing processes, negotiating contracts, and using advanced information systems.

(6) Promote basic science and applied clinical research designed to enhance the health and well-being of Veterans.

(7) Support excellence in the education of future audiologists, speech-language pathologists, and support personnel by enhancing partnerships with academic affiliates and fostering high-quality training experiences.

(8) Promote healthier communities by effective communication with local communities, industry and professional organizations as well as increasing public awareness of audiology and speech-language pathology services and its related health issues.

6. PLANNING ASSUMPTIONS

Certain basic planning assumptions guide the strategic direction, organization, development, and management of audiology and speech-language pathology services in order to implement policies and procedures that help to provide Veterans with the best care available. These basic planning assumptions are:

- a. Audiology and speech-language pathology programs play a role in meeting VA, VHA, and PCS strategic goals and objectives;
- b. Based on demographic and epidemiologic predictions, the demand for audiology and speech-language pathology services will continue to increase;
- c. Audiology and speech-language pathology care resources, like other clinical resources, will continue to be limited;
- d. Audiology and speech-language pathology services must be provided in an efficient, high quality, and timely manner;
- e. Audiology and speech-language pathology services and satisfaction with those services must be continuously improved;
- f. Audiology and speech-language pathology services must be provided in accordance with evidence-based principles;
- g. The delivery of audiology and speech-language pathology care is most effective when provided by audiology and speech-language pathology care professionals working cooperatively as part of an integrated, inter-disciplinary health care team;
- h. All persons who participate in the delivery of audiology and speech-language pathology care are valued partners in the health care process;
- i. Professional education and research are essential to the delivery of quality audiology and speech-language pathology care; and
- j. The provision of training opportunities for future audiology and speech-language pathology professionals is integral to the ability to deliver services in the future and part of the overarching mission of VHA.

7. RESPONSIBILITIES OF THE DIRECTOR, AUDIOLOGY AND SPEECH PATHOLOGY SERVICE

The Director of Audiology and Speech Pathology is responsible for:

- a. The overall administration of a system-wide audiology and speech-language pathology health care service.

b. The development and oversight of program policy. **NOTE:** *The Director reports directly to the Chief Consultant, Rehabilitation Services and the Chief Officer, Patient Care Services.*

c. Initiating, promoting, and leading effective collaborations with other VHA programs to integrate the delivery of comprehensive audiology and speech-language pathology health care services to Veterans into the national VA health care system and continuously evaluates and improves the delivery of health care to Veterans.

8. RESPONSIBILITIES OF THE VETERANS INTEGRATED SERVICE NETWORK (VISN) DIRECTOR

The VISN provides a critical juncture in implementation and support for audiology and speech-language pathology services, balancing local needs within the framework of national strategic initiatives and national policy. The VISN Director, or designee, is responsible for:

a. Ensuring that audiology and speech-language pathology services are recognized as integral elements of a patient-centered, inter-disciplinary health care team;

b. Providing necessary support and resources to ensure high-quality, efficient, and accessible audiology and speech-language pathology services sufficient to meet network and local needs while achieving VA and VHA strategic priorities, objectives, and goals.

9. RESPONSIBILITIES OF THE MEDICAL CENTER DIRECTOR

The Medical Center Director is responsible for:

a. Determining appropriate organizational placement of audiologists and speech-language pathologists.

b. Ensuring that audiology and speech-language pathology services are delivered in a high quality, timely, and efficient manner that supports VA and VHA strategic goals;

c. Ensuring that organization at the facility level is optimized for delivery of high quality, timely, and efficient audiology and speech-language pathology services;

d. Ensuring that audiology and speech-language pathology providers are represented as partners in the delivery of integrated, inter-disciplinary health care services;

e. Ensuring that the organizational structure contributes to the efficient operation of audiology and speech-language pathology programs and achieving VA and VHA strategic goals;

f. Ensuring that the head of the audiology and speech-language pathology program communicates directly with senior management and is able to communicate national, network, and facility strategic plans, initiatives, and goals to the clinical staff. **NOTE:** *This exact organization structure is determined at the facility level. Audiology and Speech Pathology Programs may be organized as independent services, or services within product lines.*

g. Providing resources to support the practice of audiology and speech-language pathology as defined by clinical guidelines published by the American Academy of Audiology (AAA) and the American Speech-Language-Hearing Association (ASHA), including but not limited to:

- (1) Screening and prevention services for patients and employees;
- (2) Diagnostic audiology and speech-language pathology services to a full range of patient complexity;
- (3) Treatment, therapeutic, and rehabilitation services to a full range of patient complexity; and
- (4) Specialized services for populations such as traumatic brain injury, neurogenic communication disorders, head and neck cancer, geriatric and extended care, community living, and spinal cord injury.

h. Providing resources and policies for the provision of special prosthetic devices to eligible Veterans, such as:

- (1) Hearing aids and other assistive devices;
- (2) Cochlear and other bioelectric implants;
- (3) Speech-generating and non-speech generating augmentative and alternative communication devices;
- (4) Cognitive communication aids including personal digital assistants (PDAs) and global positioning systems (GPS); and
- (5) Rehabilitative and restorative voice services including voice prostheses and tracheostomy speaking valves;

i. Providing resources to support timely, accurate, and thorough compensation and pension services.

j. Ensuring the availability of ancillary, support, and consultative medical and mental health services;

k. Ensuring the availability of data systems to support data collection, efficient management of clinical services, and reporting;

l. Ensuring effective use of electronic health records and use of standardized templates;

m. Ensuring availability of technologically advanced, fully capable hardware and software systems to support evaluation, treatment, management and rehabilitation of disorders associated with the practice of audiology and speech-language pathology. Programmable hearing aids require the use of computers and manufacturer-supplied fitting and programming software.

VHA facilities are expected to provide and maintain computers sufficient to run programming software.

***NOTE:** In VA medical facilities, audiologists and speech-language pathologists may be assigned to a variety of organizational units.*

10. RESPONSIBILITIES OF THE CHIEF, AUDIOLOGY AND SPEECH PATHOLOGY SERVICE

***NOTE:** The Chief, Audiology and Speech Pathology Service, refers to the person at the facility level with primary responsibility for the operations of the Audiology and Speech Pathology Service and the management of related professional and administrative activities. Facilities most commonly assign the Chief, Audiology and Speech Pathology to report to the Chief of Staff or as a section chief to a service chief or person of equivalent organizational rank. Where there is no service chief, a supervisory audiologist or speech-language pathologist is responsible for the management of professional and administrative activities. In those facilities where no supervisory audiologist or speech-language pathologist is assigned, an audiologist or speech-language pathologist program manager (lead) is responsible for the management of professional and administrative activities. For the purpose of this Handbook, the term Chief, Audiology and Speech Pathology Service will be used as the title for the person responsible for the management of the Audiology and Speech Pathology Service.*

The Chief is responsible for:

- a. Developing, organizing, directing, managing, supervising, controlling, and implementing policies and procedures for the Audiology and Speech Pathology Service, or their organizational equivalents.
- b. Planning, monitoring, and evaluating programs to ensure proper coordination within the service and with other facility programs;
- c. Defining, assigning and delegating duties and responsibilities;
- d. Evaluating the work of employees;
- e. Administering appropriate disciplinary actions;
- f. In collaboration with the Designated Education Officer, ensuring effective, harmonious, and synergistic academic affiliations;
- g. Ensuring availability of resources to support fully academic affiliates;
- h. Professional development and continuing education resources;
- i. In-service training and support for professional continuing education and professional development;

j. Ensuring that interpretation of policy or procedures is communicated through appropriate channels;

k. Ensuring that audiology and speech-language programs are consistent with applicable VHA policies;

l. Ensuring that audiologists comply with all VHA and Veterans Benefits Administration (VBA) compensation and pension (C&P) exam and reporting requirements; and ensuring that the content of C&P exams and opinions conform to VBA-approved exam templates (See Appendix C);

m. Developing and controlling budgets and communicating resource needs to accomplish the Service's mission to upper-level management using evidence-based data to justify requests;

n. Ensuring that services are provided in a timely, effective, and efficient manner;

o. General supervision of professional, technical, and clerical staff.

11. RECRUITMENT, APPOINTMENT, PROMOTION, AND ADVANCEMENT

a. **Recruitment.** Audiologists and speech-language pathologists are recruited in accordance with the strategies and sources suggested in VA Handbook 5005, Part I, Chapter 1. When individual VHA medical facilities have been unsuccessful in recruiting for funded positions, they may request assistance from the Director, Audiology and Speech Pathology Service and VA Central Office.

b. **Professional Standards Boards.** Professional standards boards act for, are responsible to, and are agencies of the Under Secretary for Health in matters concerning appointments and advancements of individuals. Boards determine eligibility and recommend the appropriate grade level and steps for appointment under authority of title 38 United States Code (U.S.C.) § 7401(3) and 7405(a)(1)(B), and recommend candidates for special advancements for achievement and promotions to grades above the full performance level. The Audiology and Speech-Language Pathology professional standards boards are established at the regional and national level. There are four Regional Audiology Boards, four Regional Speech-Language Pathology Boards, a National Board, and a Research Board. Each board is composed of a Chairperson and at least two board members, one of whom serves as the secretary of the board. A representative from the Human Resource Management Service that originated the board action serves as the technical representative to the professional standards board. The primary functions of these boards are to:

(1) Review and act on employment applications to determine whether the applicant or employee meets the requirements set forth within VHA qualification standards.

(2) Review all employee qualifications for advancement by examining the boarding packet, proficiency reports, and other pertinent documentation to make appropriate recommendations based on findings.

(3) Prepare and submit VA Form 10-2543, Board Action.

c. **Appointment.** Title 38 U. S. C. §7401 and §7405 authorizes the approval of the qualifications and appointment of all audiologists and speech-language pathologists. Qualification standards and procedures for appointing audiologists and speech-language pathologists are found in VA Handbook 5005, Part II.

(1) Audiologists and speech-language pathologists at the GS-12 grade level are independent practitioners and are considered to be at the full performance level. For all assignments above the full performance level, also known as higher-level, duties must encompass a range of responsibilities and other basic requirements of significant scope, complexity or difficulty. Non-supervisory assignments above GS-12 require the knowledge, skills, and competencies normally demonstrated through professional achievement such as completion of a doctoral training program or advanced board certification or board recognition.

(2) In accordance with VA Handbook 5005, Part III, Appendix N, audiologists and speech-language pathologists engaged in duties requiring clinical skills will not be appointed to Title 5 occupations.

(3) VISN Directors and Medical Center Directors will not assign Title 5 employees, or former Title 38 employees who have converted to Title 5 positions, any clinical responsibilities associated with a Title 38 occupation; convert Title 38 employees to Title 5 positions to avoid pay limitations, required waivers of qualification standards, competitive civil service procedures, credentialing requirements, or to circumvent provider-patient ratios; or establish Title 5 positions in the occupations listed in 38 U.S.C. §7401(1) or (3), including audiology and speech-language pathology.

(4) Facilities will minimize the degree to which audiologists and speech-language pathologists are assigned duties that do not require clinical skills. When such action is necessary, officials must follow the position management principles stated in VA Handbook 5005, Part III, Appendix N.

d. **Promotions.** Audiologists and speech-language pathologists are eligible for periodic consideration for promotion to the next higher grade after they fully meet all requirements. The requirements and procedures for promotion differ depending on whether or not the promotion is to a position at, below, or above the full performance level (GS-12). Procedures for internal promotion are found in VA Handbook 5005, Part III. ***NOTE: The employee must perform duties and responsibilities characteristic of the assignment at least 25 percent of the time.***

e. **Differentiating Full Performance Level from Advanced Practice Level.** Chief, Audiology and Speech Pathology Service, or designee, is responsible for defining the differences between independent practice, which is required for all audiologists and speech-language pathologists at the full performance level, and advanced practice. An audiologist or speech-language pathologist practicing at the independent level has a generalized knowledge of practice, whereas audiologists or speech-language pathologists practicing at the advanced level have specialized knowledge of practice typically related to a particular diagnosis or patient population. Advanced practice audiologists or speech-language pathologists can be further differentiated from independent audiologists and speech-language pathologists by their ability to expand

clinical knowledge in the profession, provide consultation and guidance to colleagues, role model effective audiology or speech-language pathology practice skills, and teach or mentor less experienced audiologists or speech-language pathologists.

f. **Special Advancement for Achievement.** A special advancement of one to five steps within the grade may be awarded to audiologists and speech-language pathologists who have achieved exceptional and recognized professional attainment.

(1) Recommendation will be made by the appropriate officials to the Regional or National Professional Standards Board when an audiologist or speech-language pathologist has attained an achievement under established criteria. See VA Handbook 5017, Part V.

(2) Approval of such advancement will be based on the findings and recommendations of the applicable Professional Standard Board.

(3) The effective date of special advancements is the first day of the pay period following administrative approval by the appropriate authority.

(4) In those instances where an audiologist or speech-language pathologist is at the highest step (step 10) of the grade, or where the professional achievements warrant more steps than are available, the Professional Standards Board may recommend that the station award the employee a Special Contribution Award (SCA). There is no policy limiting the amount of an SCA, but the normal procedure is to award the monetary equivalent of the step(s) recommended by the Professional Standards Board, subject to the local facility's award policy.

g. **Special Advancement for Performance.** Audiologists and speech-language pathologists who have demonstrated a sustained high level of performance and professional competence are eligible for Special Advancement for Performance on the same basis as a Quality Step Increase (QSI). These advancements are appropriate when an employee's sustained high level of achievement merits faster than normal advancement of basic pay. The advancement is limited to one step. Special advancement for performance recommendations for audiologists and speech-language pathologists will not require review by a Professional Standards Board.

h. **Effect of Special Advancement for Achievement and Performance on Within Grade Waiting Periods.** Special advancements for performance or achievement may place an employee in a waiting period that requires an additional 52 calendar weeks of creditable service before the employee is entitled to receive the next within-grade increase as specified by VA Handbook 5007, Part III, Chapter 5, Paragraph 4d.

i. **Functional Statements.** All audiologists and speech-language pathologists will have a functional statement. A functional statement is an official statement of the major duties and responsibilities assigned by management to the position. The immediate supervisor is responsible for creating the functional statement with the collaboration of the Human Resources staff. Functional statements must:

(1) Be in written form and must describe the actual duties and responsibilities of the position;

(2) Be renewed at least every two years by the Chief, Audiology and Speech pathology Service or designee; and

(3) Conform to VA Human Resources policies.

12. CREDENTIALING

a. Audiologists

(1) Audiologist credentials must conform to the Audiologist Qualification Standard, VA Handbook 5005, Part II, Appendix G29.

(2) Audiologists must have completed a course of study from an accredited program leading to a master's or doctoral degree or its equivalent in audiology or hearing science.

NOTE: "Accredited" means a college or university accredited by a regional accreditation organization and an audiology program accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (ASHA) or the Accreditation Commission for Audiology Education (ACAE). Education requirements cannot be waived. Beginning on January 1, 2007, the Council on Academic Accreditation (CAA) in Audiology and Speech-Language Pathology of ASHA will accredit only doctoral degree programs in audiology or hearing science.

(3) **Licensure.** Audiologists at or above the GS-12 grade level must hold a full, current, and unrestricted license to practice audiology in a State, Territory, Commonwealth, or the District of Columbia.

(a) Employees appointed without licensure under the Audiologist Qualification Standard (VA Handbook 5005, Part II, Appendix G29) must hold a full, current, and unrestricted license to practice audiology in a State, Territory, Commonwealth, or the District of Columbia within two years of initial appointment at or above the GS-12 grade level. An audiologist who fails to obtain licensure within two years of initial appointment will be terminated.

(b) All audiologists, regardless of grade level, who perform compensation and pension (C&P) exams must hold a full, current, and unrestricted license to practice audiology in a State, Territory, Commonwealth, or the District of Columbia.

NOTE: For the purposes of this handbook, registration by the State has the same meaning as licensure.

(4) **Certification.** Audiologists may hold voluntary certification by the Clinical Certification Board of the American Speech-Language-Hearing Association (ASHA), or board certification or specialty certification from the American Board of Audiology (ABA), or other organizations, but are not required to be certified. Certification cannot be required as a basic credential or a condition of VA appointment or employment. **NOTE:** Some academic affiliates or third-party insurers may require certification, but such requirements are not binding on VHA.

Board or specialty certification that requires professional competence or achievement beyond basic qualifications may be considered for Special Advancement for Achievement (SAA).

(5) **Hearing Instrument Dispensing License or Registration.** Some states require a hearing instrument dispensing license or registration separate from the audiology license if an audiologist sells hearing aids. This license or registration shall not be required as a condition of VA appointment or employment.

(6) **Assignments.** Audiologists may be appointed those assignments listed in the Audiologist Qualification Standard (VA Handbook 5005, Part II, Appendix G29).

b. Speech-Language Pathologists

(1) Speech-language pathologist credentials must conform to Speech-Language Pathologist Qualification Standard, VA Handbook 5005, Part II, Appendix G30.

(2) Speech-language pathologists must have completed a course of study from an accredited program leading to a master's or doctoral degree or its equivalent in speech-language pathology, communication disorders, or a directly related field. "Accredited" means a college or university accredited by a regional accreditation organization and a speech-language pathology program accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (ASHA). Education requirements cannot be waived.

(3) Licensure

(a) Speech-language pathologists at or above the GS-12 grade level must be licensed. Speech-language pathologists must hold a full, current, and unrestricted license to practice speech-language pathology in a State, Territory, Commonwealth, or the District of Columbia.

(b) Employees appointed without licensure under the Speech-Language Pathologist Qualification Standard (VA Handbook 5005, Part II, Appendix G30) must hold a full, current, and unrestricted license to practice speech-language pathology in a State, Territory, Commonwealth, or the District of Columbia within two years of initial appointment at or above the GS-12 grade level. A speech-language pathologist who fails to obtain licensure within two years of initial appointment shall be terminated.

(4) **Certification.** Speech-language pathologists may hold voluntary certification by the Clinical Certification Board of the American Speech-Language-Hearing Association (ASHA), or board certification or board recognition by ASHA or other organizations, but are not required to be certified. Certification shall not be required as a basic credential or a condition of VA appointment or employment. **NOTE:** *Some academic affiliates or third-party insurers may require certification, but such requirements are not binding on VHA. Board or specialty certification or board recognition that requires professional competence or achievement beyond basic qualifications may be considered for Special Advancement for Achievement (SAA).*

(5) **Assignments.** Speech-language pathologists may be appointed to those assignments listed in the Speech-Language Pathologist Qualification Standards (VA Handbook 5005, Part II, Appendix G30).

c. **Audiologist/Speech-Language Pathologists**

(1) Audiologist/speech-language pathologists are *dually licensed* practitioners. Only those individuals who held an “audiologist/speech-language pathologist” position title prior to March 17, 2006 are subject to the provisions of the Audiologist/Speech-Language Pathologist Qualification Standard. Initial appointments of new employees as audiologist/speech-language pathologists are not permitted after this date. In unusual circumstances, audiologist/speech-language pathologists may be appointed or re-appointed under this standard using waiver procedures. (VA Handbook 5005, Part II, Appendix G31).

(2) Supervisory audiologist/speech-language pathologists must be appointed under either the Audiologist Qualification Standard or Speech-Language Pathologist Qualification Standard. The applicable qualification standard depends on the position and the nature of the work. In cases where a supervisory audiologist/speech-language pathologist has administrative or managerial responsibilities over both audiology and speech-language pathology areas, the applicable qualification standard shall be determined by: the qualifications of the person applying for the position, the predominance of work in each area, and the needs of the facility.

(3) Audiologist/speech-language pathologist credentials must conform to Audiologist/Speech-Language Pathologist Qualification Standard, VA Handbook 5005, Part II, Appendix G31.

(4) Audiologist/speech-language pathologists have completed a course of study from an accredited program leading a master’s or doctoral degree or its equivalent in audiology or hearing science from an accredited college or university; or, a master’s degree or doctoral, or its equivalent, in speech-language pathology, communication sciences and disorders, or a related field, from an accredited college or university. **NOTE:** “Accredited” means a college or university accredited by a regional accreditation organization and an audiology program accredited by the Accreditation Commission for Audiology Education (ACAE) and/or the Council on Academic Accreditation of the American Speech-Language-Hearing Association (ASHA).

(5) **Assignments.** Audiologist/speech-language pathologists may be appointed only as staff audiologist/speech-language pathologists, audiologist/speech-language pathologist program managers (team leaders), or research audiologist/speech-language pathologists (VA Handbook 5005, Part II, Appendix G31).

(6) **Licensure**

(a) Audiologist/speech-language pathologists at or above the GS-12 grade level must be licensed. Audiologist/speech-language pathologists must hold a full, current, and unrestricted license to practice audiology and speech-language pathology in a State, Territory, Commonwealth, or the District of Columbia.

(b) Employees appointed without licensure in both areas under the Audiologist/Speech-Language Pathologist Qualification Standard (VA Handbook 5005, Part II, Appendix G31) must hold a full, current, and unrestricted license to practice audiology and speech-language pathology in a State, Territory, Commonwealth, or the District of Columbia within two years of initial appointment at or above the GS-12 grade level. An audiologist/ speech-language pathologist who fails to obtain licensure in both areas within two years of initial appointment shall be terminated. An employee may be retained if the employee attains a full, current, and unrestricted license to practice audiology or speech-language pathology.

(c) All audiologist/speech-language pathologists, regardless of grade level, who perform compensation and pension (C&P) exams must hold a full, current, and unrestricted license to practice audiology in a State, Territory, Commonwealth, or the District of Columbia.

(7) **Certification.** Audiologist/speech-language pathologists may be certified by the Clinical Certification Board of the American Speech-Language-Hearing Association (ASHA); or board certified by the American Board of Audiology (ABA), or hold board certification or board recognition by ASHA or other organizations, but are not required to be certified. Certification shall not be required as a basic credential or a condition of VA appointment or employment.

***NOTE:** Some academic affiliates or third-party insurers may require certification, but such requirements are not binding on VHA. Board or specialty certification or board recognition that requires professional competence or achievement beyond basic qualifications may be considered for Special Advancement for Achievement (SAA).*

d. National Provider Identification (NPI).

(1) All audiologists and speech-language pathologists who provide clinical services must obtain NPIs, designate their Taxonomy Codes, and furnish both NPI and Taxonomy Code information to the designated NPI Maintenance Team Leader as requested.

(2) No audiologist or speech-language pathologist who provides clinical services seeking employment by VHA shall be appointed without first furnishing their correct NPI and Taxonomy Code information to the designated NPI Maintenance Team Leader for the facility at which the practitioner seeks to be appointed.

(3) The appropriate NPIs for use in VHA are:

- (a) Audiologist – 231H00000X.
- (b) Speech-Language Pathologist – 235Z00000X.
- (c) Health technician – 2355A2700X.
- (d) Speech-Language Assistant – 2355S0801X.

***NOTE :** Health care provider Taxonomy codes are available at <http://www.wpc-edi.com/taxonomy>.*

e. **Person Class.**

(1) Every audiologist and speech-language pathologist must be assigned a person class code in the Person Class File according to the definitions provided in the Person Class Taxonomy.

(2) The Person Class assignments must be reviewed at least annually by the Chief, Audiology and Speech Pathology Service or designee.

(3) The appropriate Person Class assignments allowed for use in VHA are:

(a) Audiologist—140100.

(b) Speech-language Pathologist—140500.

(c) Health technician—147001.

(d) Speech-Language Assistant—140600.

***NOTE:** See <http://vaww.aac.va.gov/npcd/PersonClassTaxonomy.xls> for Practitioner Type codes. This is an internal VA Web site not available to the public.*

13. CLINICAL PRIVILEGING

a. **Definition.** The term “clinical privileging” is defined as the process by which a practitioner licensed for independent practice (i.e. without supervision, direction, required sponsor, preceptor, or mandatory collaboration) is permitted by law and the facility to practice independently and to provide specified patient care services within the scope of the individual’s license based on the individual’s clinical competence as determined by peer references, professional experience, health status, education, training; and licensure or registration. The delineation of clinical privileges must be specific to the facility, setting, and individual practitioner.

(1) **Independent Practitioner.** The term "independent practitioner" is any individual permitted by law (the statute which defines the terms and conditions of the practitioner’s license) and the facility to provide patient care services independently; i.e., without supervision or direction, within the scope of the individual’s license and in accordance with individually-granted clinical privileges.

(2) **Delineated clinical privileges.** Clinical privileges are accurate, detailed, and specific descriptions of the scope and content of patient care services for which a practitioner is qualified; they are based on credentials (i.e. licensure) and performance and are authorized by the facility. Privileges granted to an applicant must be facility specific, based on the procedures and types of services that are provided within the health care facility. The requirements or standards for granting privileges to perform any given procedure, if performed by more than one

service, must be the same. One standard of care must be guaranteed regardless of practitioner, service, or location within the facility.

b. It is strongly recommended that delineated clinical privileges be granted to licensed audiologists and speech-language pathologists who perform services independently in accordance with VHA Handbook 1100.19, Credentialing and Privileging.

c. **Clinical Privileging of Audiologists Who Perform C&P Examinations.** Audiologists who conduct C&P examinations for auditory disorders (hearing loss and tinnitus) must be clinically privileged in accordance with VHA Handbook 1100.19 to perform or supervise the performance of C&P examinations for auditory disorders.

d. Each audiologist or speech-language pathologist who is privileged in accordance with VHA Handbook 1100.19 must be assigned to, and have clinical privileges in, one clinical service and may be granted privileges in other clinical services. Setting-specific privileges are granted based on the practitioner's qualifications, and also on consideration of the procedures and types of care, treatment, and services that can be performed or provided within the proposed setting.

e. **Delineated Scope of Practice**

(1) If a facility determines that audiologists or speech-language pathologists will not be privileged in accordance with VHA Handbook 1100.19, the facility must establish a delineated scope of practice statement for each audiologist and speech-language pathologist. Audiologists who perform C&P examinations for auditory disorders (hearing loss and tinnitus) must be clinically privileged in accordance with VHA Handbook 1100.19 to perform and/or supervise the performance of these examinations.

(2) The delineated scope of practice statement is an accurate, detailed, and specific description of the scope and content of patient care services for which a practitioner is qualified. Like clinical privileges, they are assigned by management and based on the individual's credentials (i.e. licensure). The delineated scope of practice statement is approved by the service chief or person of equivalent organizational rank.

(3) Delineated scopes of practice for audiologists and speech-language pathologists who perform services independently, *i.e.* at the GS-12 or higher grade levels, must specifically state that such services must be *performed without supervision*.

(4) Audiologists and speech-language pathologists must abide by the individual's scope of practice specified by the state that licenses the individual. In those instances where the individual is licensed in a state other than the state where the service is performed, the individual shall be governed by the laws of the state where they are licensed.

14. SCOPE OF PRACTICE

a. **Audiologists.** Audiologists serve Veterans, families, caregivers, stakeholders, and the Nation through a broad range of professional activities including:

- (1) Promoting, designing, implementing, and coordinating wellness programs for prevention of hearing loss and protection of hearing function.
- (2) Identifying, evaluating, diagnosing, managing, and treating disorders of human hearing, balance, tinnitus, and other disorders associated with the practice of audiology.
- (3) Performing otoscopic examination and external ear canal management for removal of cerumen.
- (4) Conducting and interpreting behavioral, electroacoustic, or electrophysiologic tests used to evaluate disorders associated with the practice of audiology.
- (5) Administering and interpreting electrophysiologic measurements of neural function including, but not limited to, sensory and motor evoked potentials, tests of nerve conduction velocity, and electromyography. These measurements are used in differential diagnosis, pre- and postoperative evaluation of neural function, and neurophysiologic intraoperative monitoring of central nervous system, spinal cord, and cranial nerve function.
- (6) Evaluating and providing rehabilitation for central auditory processing disorders.
- (7) Determining the appropriateness of amplification devices and systems such as hearing aids, sensory aids, hearing assistive devices, alerting and telecommunication systems, and captioning devices; for Veterans with hearing impairment taking into consideration physical, acoustic, cosmetic, situational, and contextual factors.
- (8) Selecting, evaluating, fitting and programming amplification devices and systems customized to the individual needs of Veterans; verifying the effectiveness of such devices or systems; counseling and training Veterans in the use of amplification devices and systems, and determining the benefit of amplification devices and systems.
- (9) Determining candidacy based on hearing and communication information for auditory implants (e.g., cochlear implants, middle ear implantable hearing aids, fully implantable hearing aids, bone-anchored and implantable hearing aids, and all other amplification/signal processing devices) and providing pre- and post-surgical assessment, counseling, and all aspects of audiologic treatment including auditory training, rehabilitation, implant programming, and maintenance of implant hardware and software.
- (10) Providing auditory rehabilitation including speech reading, communication management, language development, auditory skill development, and counseling for psychosocial adjustment to hearing loss for persons with hearing loss and their families/caregivers to optimize residual hearing and to mitigate the effects of hearing impairment on activity, participation, and quality of life.
- (11) Designing, implementing, supervising, and coordinating industrial or occupational hearing conservation and identification programs including prevention, identification and amelioration of noise-hazardous conditions, identification of hearing loss, recommendation and

counseling on use of hearing protection, employee education, and the training and supervision of non-audiologists performing hearing screening in the industrial setting.

(12) Providing rehabilitation to persons with balance disorders using habituation, exercise therapy, and balance retraining.

(13) Evaluating and providing treatment and management for Veterans with tinnitus using techniques that include, but are not limited to, educational counseling, biofeedback, masking, sound therapy, hearing aids, directed counseling, and combined methods.

(14) Designing and conducting basic and applied audiology research subject to IRB review and approval to increase the knowledge base, to develop new methods and programs, to determine the efficacy of assessment and treatment paradigms; and to disseminate research findings to other professionals and to the public.

(15) Participating in education and administration of audiology graduate and professional education programs including education, mentoring, and supervision of associated health trainees.

(16) Administering and managing clinical and academic programs.

(17) Measuring functional outcomes, consumer satisfaction, effectiveness, efficiency, and cost-benefit of practices and programs to maintain and improve the quality of audiology services.

(18) Training, supervising, and managing health technicians and other support personnel.

(19) Consulting on accessibility for persons with hearing loss in public and private buildings, programs, and services.

(20) Consulting with individuals, public and private agencies, and governmental bodies, or providing, as an expert, opinions regarding medico-legal interpretations of clinical findings, and relevant noise-related considerations including compensation and pension and worker's compensation examinations and expert opinion on work- and service-related injuries, and effects of hearing loss and tinnitus on activity, participation, and quality of life.

(21) Consulting with industry on the development of products and instrumentation related to the measurement and management of auditory or balance function and technical advice to contracting officers on devices and systems associated with the practice of audiology.

(22) Participating in the development of professional and technical standards.

(23) Providing services using telehealth diagnostic measures and treatment methodologies (including remote applications).

NOTE: Source: American Academy of Audiology; American Speech-Language-Hearing Association

b. **Speech-Language Pathologists.** Speech-language pathologists serve Veterans, families, caregivers, stakeholders, and the Nation through a broad range of professional activities, including:

(1) Identifying, defining, evaluating, and diagnosing disorders of human communication and swallowing and diagnosis of diseases and conditions including, but not limited to:

(a) Speech (i.e., articulation, fluency, resonance, and voice including aeromechanical components of respiration); language (i.e., phonology, morphology, syntax, semantics, and pragmatic/social aspects of communication) including comprehension and expression in oral, written, graphic, and manual modalities;

(b) Language processing; language-based literacy skills, including phonological awareness;

(c) Swallowing and feeding function; and

(d) Cognitive aspects of communication (e.g., attention, memory, problem solving, executive functions).

(2) Providing direct services using a variety of service delivery models to evaluate, treat, and/or manage disorders associated with the practice of speech-language pathology.

(3) Providing rehabilitation for respiration, phonation, articulation, and swallowing problems in Veterans with head and neck cancer including pre-operative counseling and interventions based upon surgical or organ-based preservation decisions (radiation and chemotherapy); and post-surgical alaryngeal voice restoration including use of an electrolarynx, esophageal speech techniques and tracheoesophageal voice restoration techniques.

(4) Using instrumentation (e.g., videofluoroscopy, surface electromyography (sEMG), nasoendoscopy, stroboscopy, computer technology) to observe, collect data, and measure parameters of communication and swallowing, or other upper aerodigestive functions in accordance with the principles of evidence-based practice.

(5) Determining the appropriateness of devices and systems such as voice prostheses, augmentative and alternative communication devices, and electronic cognitive devices captioning devices for Veterans with speech, voice, communication, swallowing, and cognitive disorders taking into consideration physical, cosmetic, situational, and contextual factors.

(6) Selecting, evaluating, and fitting devices and systems and orient and train patients and caregivers on the effective use of prosthetic/adaptive devices for associated with the rehabilitation of communication, voice, cognitive, and swallowing disorders to mitigate the effects of communication and swallowing disorders on activity, participation, and quality of life.

(7) Managing voice and swallowing problems in Veterans with tracheostomies and those with ventilator-dependence.

- (8) Establishing augmentative and alternative communication techniques and strategies including developing, selecting, and prescribing of such systems and devices (e.g., speech generating devices) for patients with neurogenic communication disorders.
- (9) Collaborating in the assessment of central auditory processing disorders and provide intervention where there is evidence of speech, language, and/or other cognitive-communication disorders.
- (10) Providing services using telehealth diagnostic measures and treatment methodologies (including remote applications).
- (11) Providing services to Veterans with hearing loss and their families or caregivers (e.g., auditory training; speechreading; speech and language intervention secondary to hearing loss; visual inspection, basic troubleshooting, and listening checks of amplification devices.
- (12) Performing hearing screening using pure tones and otoacoustic emissions and screening for middle-ear pathology through screening tympanometry for the purpose of identification and referral for further evaluation and management.
- (13) Educating and counseling Veterans, families, caregivers, co-workers, educators, and other persons in the community regarding acceptance, adaptation, and decision making about disorders associated with the practice of speech-language pathology.
- (14) Advocating for individuals through community awareness, education, and training programs to promote wellness and healthy lifestyle; to foster public awareness of communication, swallowing, and cognitive disorders and their treatment; and to facilitate access to full participation in communication, including the elimination of societal barriers.
- (15) Providing services to modify or enhance communication performance (e.g., accent modification, transgendered voice, care and improvement of the professional voice, personal/professional communication effectiveness).
- (16) Consulting and collaborating on palliative and end-of-life decisions related to feeding and swallowing.
- (17) Designing and conducting basic and applied research related to communication sciences and disorders subject to IRB review and approval to increase the knowledge base, to develop new methods and programs, to determine the efficacy of assessment and treatment paradigms; and to disseminate research findings to other professionals and to the public.
- (18) Participating in speech-language pathology graduate and professional education programs including the education, mentoring and supervision of associated health trainees.
- (19) Measuring functional outcomes, consumer satisfaction, effectiveness, efficiency, and cost-benefit of practices and programs to maintain and improve the quality of speech-language pathology services.

(20) Training supervising, and managing health technicians and other support personnel.

(21) Consulting with individuals, public and private agencies, and governmental bodies, or providing expert opinions regarding medico-legal interpretations of clinical findings, and effects of communication, cognitive, and swallowing disorders on activity, participation, and quality of life.

(22) Consulting with industry on the development of products and instrumentation related to the measurement and management of communication, swallowing, and cognition; and technical advice to contracting officers on devices and systems associated with the practice of speech-language pathology.

(23) Participating in the development of professional and technical standards.

(24) Serving as case managers and service delivery coordinators.

(25) Administering and managing clinical and academic programs.

NOTE: Source: American Speech-Language-Hearing Association

NOTE: These statements delineate the typical scopes of practice in audiology and speech-language pathology. These scopes of practice are not intended to be exhaustive; however, the activities described reflect current practice within the professions. Practice activities related to emerging clinical, technological, and scientific developments are not precluded from consideration as part of scopes of practice for audiologists or speech-language pathologists. Specialization within scopes of practice will vary among the individual providers. Levels of education, experience, skill, and proficiency may vary among individual providers; and audiologists or speech-language pathologists will not typically practice in all areas. Individuals may only practice in those areas in which they are competent based on their education, training, and experience and where they are allowed to do so by their license and the facility. Audiologists and speech-language pathologists may expand their expertise through additional education or training, subject to state law. These scopes of practice do not supersede existing state licensure laws, local functional statements, delineated clinical privileges, or delineated scopes of practice. Defining the scope of practice of audiologists or speech-language pathologists is not meant to exclude other qualified professionals from rendering services in common or overlapping practice areas. The functions described above may be used in creating delineated clinical privileges or scopes of practice.

c. Health Technicians in Audiology

(1) Health technicians utilized in audiology practice are individuals with course work or training in basic audiology, otoscopy, amplification, and cerumen management.

(2) The purpose of the health technicians is to improve access to patient care by increasing availability of audiology services; increasing productivity by reducing wait times and enhancing patient satisfaction; and reducing costs by enabling health technicians to perform tasks that do not require the professional skills of a licensed audiologist.

(3) The health technician's scope of practice is defined by the local VHA facility. In determining scope of practice, the facility shall follow the laws of state where the health technician is licensed or registered, if required. In the absence of such laws, this Handbook shall apply.

(a) The duties and responsibilities assigned to a health technician shall be based on the training, available supervision, and the specific work setting. The scope of practice of the supervising audiologist shall also dictate the duties and responsibilities assigned to the health technician.

(b) Examples of the types of services a health technician in audiology may perform include:
NOTE: The following is a list of the types of services that health technicians might perform. In some states, allowable services may be defined by state law.

1. Greeting and escorting patients.
2. Scheduling patients.
3. Packaging and mailing ear mold orders, device repairs, and factory returns.
4. Entering hearing aid orders and repair services through Remote Order Entry System (ROES) as directed by supervising audiologists.
5. Registering hearing aids and assistive devices through ROES.
6. Certifying hearing aids and repairs through ROES.
7. Performing inventories of equipment and supplies.
8. Entering station supply orders in ROES.
9. Performing checks on hearing aids and other amplification devices.
10. Performing troubleshooting and minor repairs to hearing aids, ear molds, and other amplification devices.
11. Cleaning hearing aids and other amplification devices.
12. Performing electroacoustic analysis of hearing aids and other amplification devices.
13. Instructing patients in proper use and care of hearing aids and other amplification devices.
14. Demonstrating alerting and assistive listening devices.
15. Instructing patients in proper ear hygiene.

16. Assisting audiologists in treatment programs.
17. Assisting audiologists with set-up and technical tasks.
18. Preparing materials for ear impressions.
19. Maintaining and restocking test and treatment rooms.
20. Performing equipment maintenance and biologic checks.
21. Conducting hearing and tympanometric screening (without interpretation).
22. Conducting otoacoustic emission tests (without interpretation).
23. Performing non-diagnostic otoscopy.
24. Performing cerumen management under the direct supervision of an audiologist or physician.
25. Taking ear impressions under the direct supervision of an audiologist.

(4) **Activities Outside Job Responsibilities of a Health Technician in Audiology.** There is a potential for possible misuse of health technicians, particularly when responsibilities are delegated by administrative staff or non-clinical staff without the knowledge and approval of the supervising audiologist. Therefore, the health technician must not perform any task without the express knowledge and approval of the supervising audiologist. The health technician must not:

- (a) Perform diagnostic tests, formal or informal evaluations;
- (b) Interpret test results;
- (c) Participate in team or case conferences, or any inter-disciplinary team without the presence of the supervising audiologist or an audiologist designated by the supervising audiologist;
- (d) Write, develop, or modify a patient's individualized treatment plan;
- (e) Assist with patients without following the treatment plan prepared by the audiologist or without proper supervision;
- (f) Sign any formal documents (e.g., treatment plans, reimbursement forms, or reports. Notes written by health technicians may be reviewed and co-signed by the supervising audiologist, subject to local facility policy;
- (g) Select patients for treatment services or discharge patients from treatment services;

(h) Disclose clinical or confidential information either orally or in writing to anyone other than the supervising audiologist;

(i) Make referrals for additional services; or counsel or consult with the patient, family or others regarding the patient status or service; or

(j) Represent themselves as an audiologist.

(5) Health technicians with specialized training from the Council on Accreditation in Occupational Hearing Conservation (CAOHC) may, under the direct supervision of a licensed audiologist or physician, perform the following services:

(a) Checks and calibration of audiometric instrumentation;

(b) Otoscopic screening and pure-tone threshold testing for the purpose of hearing conservation;

(c) Basic counseling of employees concerning test results and criteria for employee referral;

(d) Training of employees on personal hearing protection devices;

(e) Provide employee hearing conservation education, training, and motivation; and

(f) Recordkeeping.

(6) CAOHC-certified technicians must not:

(a) Assume the role of a professional supervisor of the audiometric monitoring portion of a hearing conservation program;

(b) Assume the role of an instructor of other occupational hearing conservationists;

(c) Interpret audiograms;

(d) Conduct any type of audiometric testing other than air conduction, such as bone-conduction testing or speech audiometry;

(e) Diagnose hearing disorders;

(f) Independently evaluate hearing conservation program effectiveness; or

(g) Conduct noise surveys and analyses, or be responsible for noise-control solutions.

d. Health Technicians in Speech-Language Pathology

(1) Health technicians utilized in speech-language pathology practice are individuals with course work or training in basic speech-language pathology.

(2) The purpose of health technicians in speech-language pathology is to improve access to patient care by increasing availability of speech-language pathology services; increasing productivity by reducing wait times and enhancing patient satisfaction; and reducing costs by enabling health technicians to perform tasks that do not require the professional skills of a licensed speech-language pathologist.

(3) The health technician's scope of practice is defined by the local VHA facility. In determining scope of practice, the facility must follow the laws of state where the health technician is licensed or registered, if required. In the absence of such laws, this Handbook shall apply.

(a) The duties and responsibilities assigned to health technicians in speech-language pathology must be based on the training, available supervision, and the specific work setting. The scope of practice of the supervising speech-language pathologist also dictates the duties and responsibilities assigned to the health technician.

(b) Examples of the types of services a health technician in speech-language pathology can perform include: **NOTE:** *The following is a list of the types of services that health technicians might perform. In some states, allowable services may be defined by state law.*

1. Assisting speech-language pathologists with speech-language and hearing screenings (without interpretation).
2. Assisting with informal documentation as directed by speech-language pathologists.
3. Following documented treatment plans or protocols developed by supervising speech-language pathologists.
4. Documenting patient or client performance (e.g., tallying data for the speech-language pathologist to use) and reporting this information to supervising speech-language pathologists.
5. Assisting speech-language pathologists during assessment of patients.
6. Assisting with clerical duties such as preparing materials and scheduling activities as directed by speech-language pathologists.
7. Performing checks and maintenance of equipment.
8. Supporting supervising speech-language pathologists in research projects, in-service training, and public relations programs.
9. Assisting with departmental operations (scheduling, record keeping, safety/maintenance of supplies and equipment).
10. Collecting data for monitoring quality improvement.

11. Exhibiting compliance with regulations, reimbursement requirements, and job responsibilities.

(4) Activities Outside Job Responsibilities of Health Technicians in Speech-Language Pathology. There is a potential for possible misuse of health technicians in speech-language pathology, particularly when responsibilities are delegated by administrative staff or non-clinical staff without the knowledge and approval of the supervising speech-language pathologist. Therefore, health technicians in speech-language pathology must not perform any task without the express knowledge and approval of the supervising speech-language pathologist. Health technicians in speech-language pathology must not:

- (a) Perform standardized or non-standardized diagnostic tests, formal or informal evaluations, or clinical interpretations of test results.
- (b) Screen or diagnose patients and clients for feeding/swallowing disorders.
- (c) Participate in family conferences, case conferences, or any interdisciplinary team without the presence of the supervising speech-language pathologist or other speech-language pathologist designated by the supervising speech-language pathologist.
- (d) Write, develop, or modify a patient's/client's individualized treatment plan in any way.
- (e) Assist with patients and clients without following the individualized treatment plan prepared by the speech-language pathologist or without proper supervision.
- (f) Sign any formal documents (e.g., treatment plans, reimbursement forms, or reports; informal treatment notes written by the health technician may be reviewed and co-signed by the supervising speech-language pathologist, subject to local policy.
- (g) Select patients for services or discharge patients from services.
- (h) Disclose clinical or confidential information either orally or in writing to anyone other than the supervising speech-language pathologist.
- (i) Make referrals for additional services.
- (j) Counsel or consult with the patient/client, family, or others regarding the patient/client status or service.
- (k) Use a checklist or tabulate results of feeding or swallowing evaluations.
- (l) Demonstrate swallowing strategies or precautions to patients, family, or staff.
- (m) Represent themselves as speech-language pathologists.

NOTE: State laws vary; therefore specific state regulations need to be checked to determine which tasks are outside the scope of responsibilities for assistants in a particular state. Some

states regulate the use of audiology and/or speech-language pathology support personnel, either through licensure, registration, or certification. Some states regulate both speech pathology and health technicians; others regulate only speech-language pathology support personnel. Titles differ by state. The most common title for support personnel is "assistant". Some states use the term "aide" and some states use both terms. In some states, there are several levels or tiers of support personnel with different education requirements, titles, and specified scopes of practice. Some states require continuing education for support personnel. The level of education required of support personnel also varies from state to state, including bachelor's degree with enrollment in a masters degree program, a bachelor's degree, an associates degree, or a high school diploma. Most states impose supervision requirements including limits on the number of support personnel that one licensed speech-language pathologist or audiologist may supervise (usually 2 or 3 assistants per supervisor). Some states prescribe the amount of direct and indirect supervision that a supervisor must provide. Some states specifically define what activities may and may not be performed by support personnel.

15. RESOURCE MANAGEMENT

a. **Space.** The facility must provide adequate space for the provision of diagnostic and therapeutic services for the effective and efficient delivery of audiology and speech-language pathology services. Criteria for minimum space requirements have been established and are provided in VA Space Planning Criteria, Chapter 204: Veterans Health Administration: Audiology & Speech Pathology Service. <http://www.cfm.va.gov/til/space.asp#VHA>.

b. **Staffing.** Facilities need to apply a systematic methodology to establish staffing levels and skill mix to ensure that a qualified and competent workforce is available to provide high-quality, timely, and efficient health care.

(1) Facility leadership needs to take into consideration the recommendations from audiologists and speech-language pathologists providing the care or services; and performance measures, patient outcomes, or other indicators or monitors of the accessibility and quality of care provided. Facility leadership shall consider the quality of care to Veterans foremost in making decisions on staffing.

(2) Facility leadership needs to use available local, network, and VHA data resources to track and analyze audiology and speech-language pathology workload, productivity, cost, utilization, and access.

(3) Facility leadership needs to implement improvement goals and plans related to the mix and level of staff required, based upon trends in performance measures, patient outcomes, or other indicators or monitors of the accessibility and quality of care provided after seeking input from audiologists and speech-language pathologists providing the care or services involved, or expert panels.

(4) Facility leadership must analyze, track, and trend variations in patient outcomes, performance indicators, and monitors to assess the effectiveness of staffing plans, and making adjustments as indicated.

c. **Productivity.** Facility leadership must:

- (1) Utilize data resources such as the Decision Support System (DSS) to track productivity.
- (2) Establish reasonable workload and productivity goals taking into consideration the unique scope and complexity of audiology and speech-language pathology services, quality of health care services, access goals, expected and emerging demand for services, sustainability, cost, availability of resources, and staff morale.
- (3) Consider the quality of care to Veterans foremost in making decisions regarding productivity.

d. **Equipment.** The facility must provide equipment and necessary supplies to provide diagnostic testing and rehabilitation. This includes, but is not limited to:

- (1) Audiometric test equipment including, but not limited to, audiometers, audiometric sound rooms, acoustic immittance equipment, hearing aid and probe tube (real-ear) test equipment, auditory electrophysiologic test equipment (e.g., evoked potentials and otoacoustic emissions), and vestibular and balance test equipment sufficient for the identification and comprehensive evaluation of disorders associated with the practice of audiology.
- (2) Diagnostic equipment including, but not limited to, video fluoroscopic equipment for evaluation of swallowing, video equipment for evaluation of laryngeal function, speech and voice analysis equipment, and electromyographic equipment for evaluation of facial nerve and/or voice function sufficient identification and comprehensive evaluation of disorders associated with the practice of speech-language pathology.
- (3) Therapeutic and rehabilitative equipment, devices, and tools sufficient for the treatment and management of disorders associated with the practice of audiology and speech-language pathology involving a full range of patient complexity.
- (4) Computers and information technology sufficient to run clinical equipment, analyze diagnostic results, and manage health records.
- (5) All audiology equipment that requires calibration must be calibrated according to current standards as published by the American National Standards Institute or other organization. This equipment must be calibrated annually, or more often in accordance with local policy or applicable standards. Listening checks and biological equipment checks must be completed daily.
- (6) Sound suites and booths must conform to IB 11-87 *Booth Audiometric Examination Specifications* (see App. D). Sound booths and suites must conform to ambient noise attenuation according to current standards as published by the American National Standards Institute or other standards organization.

e. **System Re-design.** System re-design is a management system designed to improve the efficiency and productivity of clinics by understanding supply and demand; realigning resources

and procedures to reduce backlogs; decreasing the number and types of appointments; developing contingency plans; reducing demand for appointments through efficient scheduling, use of service agreements, and managing missed opportunities; and increasing capacity by managing constraints, synchronizing providers, patients, space, and information; and optimizing staff and equipment utilization. Facility leadership must ensure that:

(1) Audiology and speech-language pathology programs utilize system re-design (advance clinic access) strategies to promote the timely and efficient delivery health care services.

(2) Audiology and speech-language pathology programs utilize available data systems and management techniques that optimize productivity. Program managers shall utilize encounter data capture systems capable of extracting product-level information for all outpatient and inpatient encounters.

(3) Audiology and speech-language pathology programs make effective use of the Decision Support System (DSS) through periodic labor mapping, review of relative values and costs, review of departmental productivity, and verification of cost and workload data.

(4) All inpatient and outpatient encounters are properly entered and that all clinical services are properly documented.

16. PROSTHETIC DEVICES

a. **Hearing Aid Program.** Audiology services provide hearing aids and related services to Veterans in accordance with Title 38 CFR §17.149 and applicable VHA Directives and Handbooks. National contracts for hearing aids and related services are managed by the Audiology and Speech Pathology National Program Office and the Denver Acquisition and Logistics Center (DALC).

b. **Definitions.**

(1) **Hearing Aid Evaluation (HAE).** HAE is a procedure used by an audiologist to determine the extent of hearing impairment and the selection of amplification device(s). The procedure typically includes otoscopic inspection of the ears; patient-centered assessment of communication and rehabilitative needs, candidacy, goals, motivation; rehabilitative counseling; measurement of loudness tolerance; device selection; probe tube measurements to establish gain targets; ear impressions; and order processing. HAE may occur in combination with a diagnostic audiology evaluation or during a separate visit. Audiologists consider physical, acoustic, cosmetic, situational, and contextual factors in selecting amplification. Contextual factors influence how a patient responds to limitations and restrictions resulting from hearing loss. They include the patient's home, work, family, and societal environment, and personal factors such as gender, race, overall health, fitness, lifestyle, education, and behavior.

(2) **Hearing Aid Fitting (HAF).** HAF is a procedure used by an audiologist to fit, adjust, program, and verify settings of hearing aid(s) to optimize residual hearing. The procedure typically includes fitting, adjustment, programming, hearing aid orientation, instruction, training,

counseling, verification of hearing aid performance (probe tube measurements), and measurement of benefit or outcome.

(3) **Follow-up Hearing Aid Services (Aftercare).** Follow-up hearing aid services are scheduled or unscheduled services provided after the initial hearing aid fitting. Aftercare services may include re-adjustment, re-programming, modification, repairs, hearing aid function tests, re-instruction, and re-verification of hearing aid performance. Aftercare services may include a scheduled return during the trial period to the clinic to evaluate progress and assess clinical outcomes after a period of acclimatization. The trial period is typically 180 days.

(4) **Related Services.** Related services are professional and technical services such as evaluation, assessment, fitting, orientation, training, counseling, programming, adjustment, repairs, and modification.

c. **Eligibility for Hearing Aids.** Special rules apply to eligibility for hearing aids. 38 CFR §17.149 defines eligibility for “sensori-neural aids” (eyeglasses, contact lenses, and hearing aids). Facilities must follow applicable VHA handbooks, directives, and policies in determining eligibility for these devices.

d. **Delivery of Hearing Aids and Related Services**

(1) Hearing aids and related services must be provided only by licensed audiologists. Audiologists must determine what type of prescriptive device is most appropriate. Prescriptions are based on a complete diagnostic audiology evaluation and hearing aid evaluation.

(2) Requests for hearing aids must be referred directly to the audiology clinic. Eligibility must be determined before the Veteran is scheduled for an audiology evaluation in accordance with applicable VHA policy. Veterans who are not entitled to hearing aids according to 38 CFR 17.149 and other federal regulations, and who may be eligible on the basis of medical need, must be advised in advance that an appointment for an audiology evaluation to determine candidacy does not guarantee that the Veteran will receive a hearing aid.

(3) Audiology Clinics must use ROES for ordering hearing aids and obtaining related services.

(4) Medical necessity shall be deemed to exist when the selection criteria stated in applicable VHA policies are met. The audiologist’s signed order in ROES stipulates that medical need exists.

(5) Prescriptions for hearing aids must take into consideration environmental factors such as: home, workplace, and educational settings; social, family and caregiver situations; communication needs; personal factors such as lifestyle, habits, education; and co-morbidities including but not limited to blindness or visual impairment, cognitive deficits, and dexterity or limb impairment.

(6) Veterans who are service connected for hearing loss may access Audiology services directly, i.e. without referral through Primary Care; however, Audiology managers must

understand the resource implications of allowing direct access and need to encourage eligible Veterans to receive the level of medical care necessary for vesting.

(7) VA audiologists must verify hearing aid performance using probe tube (real-ear) techniques. Gain or sound pressure verification (e.g. real-ear aided response or real-ear insertion gain) is essential to ensure audibility and alignment with target gain values.

(8) VA audiologists must provide to Veterans the requisite fitting, orientation, instruction, and training in the use of hearing aids. Repaired hearing aids may be mailed to a Veteran who has demonstrated successful use of the hearing aid if the programming has been set to previously verified parameters.

(9) VA audiologists must administer a scientifically-validated measurement instrument (e.g. IOI-HA, APHAB, or HHIE) to demonstrate the efficacy of treatment.

(10) When a Veteran is referred to another VA facility, the referring station must ensure procedures outlined in the VHA National Inter-Facility Coordinated Care Policy are followed. If this is the first time the Veteran is being seen at the referral VA facility, the referring facility must contact the Chief Business Office or equivalent office to ensure the Veteran is registered at the referral facility. The Audiology Clinic that is to examine the Veteran is responsible for scheduling the Veterans' appointment in accordance with scheduling guidelines and issuing hearing aids.

(11) Referrals to Non-VA Sources

(a) Services may be provided at the host facility, at another Audiology Clinic, or by a private fee basis or contract audiologist as circumstances warrant. Referrals to a non-VHA facility may be necessary in those instances where services cannot be provided in a timely manner or when a Veteran is medically unable to travel to the VHA facility.

(b) Referrals to private licensed audiologists must be coordinated through Chief Business Office (CBO) or equivalent office and Prosthetics and Sensory Aids (PSAS) Office by the Audiology Clinic.

(c) The referring VA facility is responsible for ensuring that services delivered to Veterans comply in all respects to the same standards of quality, safety, and timeliness as those provide by VA facilities.

(d) Contract hearing aids must be used unless no contract hearing aid meets the Veteran's needs.

(e) The referring facility must follow the local policy for obtaining non-VA audiology services on a fee basis or contractual basis. Payment for these services is the responsibility of the local facility. **NOTE:** See Appendix A for details governing the provision of hearing aids from non-VA sources.

e. **Cochlear Implants and Related Services**

(1) **Cochlear Implant Advisory Board (CIAB).** The Audiology and Speech Pathology National Program Office shall establish and oversee a CIAB.

(a) The purpose of the CIAB is to:

1. Provide guidance to the National Director, Audiology and Speech Pathology Service, on current cochlear implant practices, selection criteria, and device standards.
2. Approve applications for new implant centers and programming sites.
3. Monitor clinical practices and outcomes at implant sites.
4. Establish and maintain a cochlear implant registry.
5. Report periodically to the National Director on the status of the implant program.

(b) The membership of the CIAB must consist of:

1. Two audiologists with experience in cochlear implants.
2. Two otolaryngologists with experience in cochlear implants.
3. Director, Surgical Service.
4. Director, Audiology and Speech Pathology Service.
5. Representation from the Department of Defense (DOD).
6. Representation from Prosthetics and Sensory Aids Service.
7. Ad hoc, representatives from each cochlear implant site.

(2) **Delivery of Cochlear Implant and Related Services**

(a) Cochlear implants and related services must be provided only by licensed audiologists who have specialized training in cochlear implants.

(b) Cochlear implants must be provided to Veterans who meet clinical and administrative requirements in accordance with the VHA and DOD Prosthetics Clinical Management Program (PCMP) Clinical Practice Recommendations for prescription of Cochlear Implants available at <http://vawww.infoshare.va.gov/sites/prosthetics/Clinical%20Practice%20Recommendations%20CPR/Forms/AllItems.aspx>. **NOTE:** *This is an internal VA Web site, not available to the public.*

(c) Medical necessity must be deemed to exist when the selection criteria are met and the audiologist certifies that the patient is a candidate for the prescribed device. The audiologist's signed ROES order stipulates that medical need exists.

(d) Only those sites that have been approved by the CIAB are allowed to perform cochlear implants or provide cochlear implant services. Sites must meet strict requirements for staff experience, equipment, and inter-disciplinary collaboration. Two levels of services are recognized by VHA:

1. A Cochlear Implant Center is a facility that provides a full range of audiology and surgical services including candidacy evaluations, surgical implantation and aftercare, device activation and programming, re-programming, and auditory rehabilitation.

2. A Cochlear Implant Programming Site is a site that performs only post-surgical programming and rehabilitation, and aftercare services.

(e) Prescriptions for cochlear implants must take into consideration environmental factors such as: home, workplace, and educational settings; social, family and caregiver situations; communication needs; personal factors such as lifestyle, habits, education; and co-morbidities including but not limited to blindness or visual impairment, cognitive deficits, and dexterity or limb impairment.

f. **Prosthetic Devices for Veterans with Hearing Impairment.** Prosthetic devices for Veterans with hearing impairment and related services pertain to devices other than hearing aids and cochlear implants, and include but are not limited to assistive and alerting devices, assistive listening devices (ALDs), and voice carry (VCO) telephones, teletype (TTY), and teletext devices (TDD).

(1) **Definitions**

(a) Alerting Devices (AD). Alerting devices include, but are not limited to, alarm systems, alarm clocks, doorbell alarms, and telephone signalers. These alerting devices use a visual (e.g., a flashing light), auditory (e.g., an increase in amplification, or vibrotactile (e.g., a vibrating accessory) signal. Auditory signals are sometimes used in conjunction with either visual or vibrotactile signals. A system with a flashing light installed in the home of a veteran with deafness or hearing impairment may be coded to alert the individual to several different sound sources.

(b) Assistive Listening Device (ALD). An ALD is an item, other than a hearing aid, that is used to assist a person to hear using amplified sound. It may be used to amplify television signals without disturbing others in the household, and to facilitate independence using the telephone for personal and emergency needs. ALDs include, but are not limited to, telephone headset amplifiers, assistive television systems, sound generators, and related accessories.

(c) Frequency Modulation (FM) Systems. FM Systems are used to increase the signal to noise ratio, thus improving performance in the presence of background noise. These devices are especially helpful for patients who are exposed to a wide variety of listening environments (e.g.,

meetings, large groups of people, etc.) in which hearing aids alone are less effective. These devices can be used with and without hearing aids, and can be either hardwired or wireless technology.

(2) Delivery of Services

(a) Prosthetic devices for Veterans with hearing impairment must be provided by licensed audiologists to eligible Veterans who meet selection criteria in accordance with VHA prescription guidelines.

(b) Audiologists must follow national clinical practice recommendations pertaining to the prescribing, ordering, and issuing prosthetic devices. **NOTE:** *See <http://vawww.infoshare.va.gov/sites/prosthetics/Clinical%20Practice%20Recommendations%20CPR/Forms/AllItems.aspx>. This is an internal VA Web site, not available to the public.*

(c) Medical necessity shall be deemed to exist when the selection criteria are met and the audiologist certifies that the patient is a candidate for the prescribed device. The audiologist's signed prosthetic or ROES order stipulates that medical need exists.

(d) Requests for prosthetic devices must be submitted to PSAS specifying the type of device, specifications, and other relevant information along with the justification for issuing it. The audiologist must provide justification for the purchase of the item specified in accordance with the applicable Prosthetic Clinical Management Program Clinical Practice Recommendation.

(e) Prescriptions for assistive and alerting devices must take into consideration environmental factors such as: home, workplace, and educational settings; social, family and caregiver situations; communication needs; personal factors such as lifestyle, habits, education; and co-morbidities including but not limited to blindness or visual impairment, cognitive deficits, and dexterity or limb impairment.

g. **Speech and Electronic Cognitive Devices.** Speech devices include but are not limited to artificial larynx voice prostheses, augmentative and alternative communication (AAC) devices, cognitive devices, tracheoesophageal voice prostheses, and tracheostomy speaking valves.

(1) Definitions

(a) **Artificial Larynx Voice Prostheses (ALVP).** Tracheoesophageal voice is one of the options available to individuals who have had their larynx removed and are thereby unable to produce normal voice. An ALVP, also known as an artificial larynx or electrolarynx, is a clinical option for those patients for whom a tracheoesophageal voice prosthesis or tracheostomy speaking valve is not appropriate. The ALVP is an electro-mechanical vibrating device that substitutes for the sound-making function of the larynx.

(b) **Augmentative and Alternative Communication Devices (AAC).** Broadly defined, an AAC device is any device, either electronic or non-electronic, that is used to transmit or receive messages. They can include non-electronic such as communication boards or high-tech electronic devices that permit the storage, retrieval, and output of speech. Such devices are

referred to as speech generating devices (SGDs) or voice output communication aids (VOCAs). High-tech systems may be dedicated devices used solely for communication or non-dedicated devices, such as computers that are adapted for communication. High-tech devices vary in the amount of information they can store and how messages stored. They vary in the ways the user can access messages or generate communication output, including the use of direct selection of a screen or keyboard with a body part or pointer, mouse, or joystick; or indirect selection using switches and scanning. The specific access method shall depend on the skills and abilities of the user. For the purposes of this Handbook, AAC devices refer to electronic AAC systems.

(c) Electronic Cognitive Devices. An electronic cognitive device denotes a product or system, whether acquired as a retail item, a modified retail item, or a customized item that is used by an individual to compensate for cognitive impairments and support a Veteran's ability to participate in activities of daily living (ADLs) and higher-level instrumental activities of daily living (IADLs) including work or school. Examples of such devices include but are not limited to: countdown timers, Personal Digital Assistants (PDAs), smart phones, pocket personal computers (pocket PCs), Global Positioning Systems (GPS), reminder watches, pagers with reminder features, and digital voice recorders.

(2) Delivery of Speech and Electronic Cognitive Device Services

(a) Speech devices and related services must be provided by licensed speech-language pathologists to eligible Veterans who meet selection criteria in accordance with the VHA guidelines.

(b) Speech-language pathologists must follow national clinical practice recommendations pertaining to the prescribing, ordering, and issuing these devices. **NOTE:** See <http://vawww.infoshare.va.gov/sites/prosthetics/Clinical%20Practice%20Recommendations%20CPR/Forms/AllItems.aspx>. *This is an internal VA Web site, not available to the public.*

(c) Medical necessity shall be deemed to exist when the selection criteria are met and the speech-language pathologist certifies that the patient is a candidate for the prescribed device. The speech-language pathologist's signed prosthetic or ROES order stipulates that medical need exists.

(d) Requests for these devices must be submitted to PSAS specifying the type of device, specifications and other relevant information along with the justification for issuing it. The speech-language pathologist must provide justification for the purchase of the item specified in accordance with the applicable Prosthetic Clinical Management Program Clinical Practice Recommendation.

(e) Prescriptions for speech and cognitive devices must take into consideration environmental factors such as: home, workplace, and educational settings; social, family and caregiver situations; communication needs; personal factors such as lifestyle, habits, education; and co-morbidities including but not limited to blindness or visual impairment, cognitive deficits, and dexterity or limb impairment.

17. EDUCATION AND TRAINING

NOTE: VHA policy on associated health training programs is found in VHA Handbook 1400.04.

a. Definitions

(1) **Doctor of Audiology (Au.D.) Students.** Students enrolled in an accredited university, school or college in either their first, second, third, or fourth professional year of training prior to being awarded an Au.D. degree.

(2) **Master's Degree Students.** Students enrolled in an accredited university, school or college in their first or second professional year of training prior to being awarded a master's degree, or its equivalent, in speech-language pathology or a related discipline.

(3) **Doctoral Students.** Students enrolled in an accredited university, school, or college prior to be awarded a Doctor of Philosophy (Ph.D.) degree, clinical doctorate, or its equivalent. Ph.D. candidates are students who have been formally admitted to candidacy.

(4) **Clinical Fellows.** Clinical fellows are persons who have a master's or doctoral degree in speech-language pathology or a related discipline and are engaged in a supervised professional experience required for certification or licensure.

(5) **Education Coordinator (also known as Training Program Director).** A licensed audiologist or speech-language pathologist shall be appointed as the education coordinator for each training program.

(6) **Preceptor.** Preceptor (or supervising practitioner) refers to a licensed audiologist or speech-language pathologist who guides the clinical training experience and serves as a role model for the trainee. Preceptors shall provide care and supervision only for those clinical activities within their delineated clinical privileges or scope of practice.

(7) **Trainee.** The term 'trainee' refers to an individual who is engaged in a pre-graduate training program or post-graduate clinical fellowship and who participates in patient care under the direction of preceptors. For the purposes of this Handbook, all individuals engaged in pre-graduate and post-graduate training are considered trainees.

NOTE: The Centers of Medicare and Medicaid Services (CMS) ruled that clinical fellows who possess an interim, temporary, or provisional state license are considered to be qualified providers under Medicare. VA considers clinical fellows to be trainees whether or not they hold a license. Clinical fellows do not hold a full, current, and unrestricted license to practice. CMS has also ruled that Au.D. students are not qualified providers under Medicare whether or not they possess a state license.

(8) **Supervision.** Supervision is an educational experience provided by a qualified preceptor to a trainee. This relationship is evaluative, extends over time, and has the simultaneous

purposes of enhancing the professional performance of the trainee while monitoring the quality of services delivered. Supervision is provided through observation, consultation, directing the learning and activities of the trainee, and role modeling. Supervision needs to also promote self-analysis, self-evaluation, critical thinking, and problem-solving skills on the part of the trainee. Progressive responsibility may be given to trainees as part of their training program to encourage professional development.

(9) **Mentoring.** Mentoring is defined as a relationship where the mentor is dedicated to the personal and professional growth of the mentee. Whereas the primary focus of supervision is accountability for the trainee's performance, mentoring builds professional and personal skills, influences attitudes, and promotes professional aspirations. Mentors advise, tutor, sponsor, and instill a professional identity in mentees.

(10) **Documentation.** Documentation is the written or computer-generated medical record evidence of a patient encounter. The preceptor is fully and solely responsible for documentation in the electronic health record. See Appendix B for details regarding documentation by trainees.

b. Establishing Affiliations Between VA Facilities and Academic Partners

(1) Before starting a program of clinical education, an affiliation agreement must exist between the local VA field facility and the most proximal accredited university, college, or school. If the nearest university, college, or school does not desire an affiliation, another accredited university, college, or school may be chosen. Facilities may support multiple affiliations with accredited universities, colleges, or schools. VA affiliation agreement templates, available at <http://www4.va.gov/oaa/agreements.asp>, must be used.

(2) VA staff audiologists or speech-language pathologists who will serve as preceptors should be eligible for appointment to the university's, school's, or college's faculty prior to consideration of any affiliation agreement.

(3) Once an affiliation is established with an accredited university, college, or school, students must participate in direct patient care with independence commensurate with the student's level of training, experience, and ability.

(4) **Recruitment of Trainees.** Traineeship positions must be advertised in accordance with local VA facility guidelines.

c. Roles and Responsibilities

(1) **Education Coordinator.** The Education Coordinator is responsible for the management and monitoring of audiology and/or speech-language pathology training program activities at the VHA facility. Some sites may reserve these duties to the Service Chief or designee. For a VA-sponsored training program, the Education Coordinator has the responsibility for administering the training program and for ensuring that the program complies with standards of accrediting and certifying bodies. The Education Coordinator:

- (a) Assesses trainee supervision within the program via a systematic review process.
- (b) Structures the training program consistent with requirements of the accrediting and certifying bodies.
- (c) Arranges and ensures that all trainees participate in an orientation to VA policies, procedures, and roles within the VA health care system.
- (d) Assigns graduated levels of responsibilities for trainees and ensures that trainees function within the assigned levels of responsibility.
- (e) Ensures that preceptors provide quality supervision to trainees.
- (f) Ensures that preceptors provide systematic feedback to trainees.
- (g) Ensures that trainees have opportunity to give feedback regarding preceptors, the training program, and the VA site.
- (h) Guides actions regarding trainee-related problems.
- (i) Monitors the provision and documentation of supervision at the VA facility.

NOTE: *Facilities are encouraged to include trainee representation on medical center committees.*

(2) **Preceptor.** The preceptor is responsible for, and must be personally involved in, the care provided to individual patients in inpatient and outpatient settings as well as long-term care and community settings. When a trainee is involved in the care of the patient, the responsible preceptor must continue to maintain a personal involvement in the care of the patient. A preceptor must provide supervision commensurate with the trainees' academic preparation, knowledge, skills, and experience. **NOTE:** *See subparagraph 15e and VHA Handbook 1400.04 for details on levels of supervision.*

(3) **Trainee.** The trainees, as individuals, must be aware of their limitations and not attempt to provide clinical services or perform procedures for which they are not trained. They must know the graduated level of responsibility described for their level of training and not practice outside of that scope of service. Each trainee is responsible for communicating significant patient care issues to the preceptor. Such communication must be documented in the electronic health record. Failure to function within graduated levels of responsibility or to communicate significant patient care issues to the responsible preceptor may result in the removal of the trainee from VA patient care activities.

(4) **The Designated Education Officer (DEO).** The DEO has ultimate oversight responsibility for all clinical education endeavors for health professions trainees at a facility. Therefore, the DEO must have input into all major decisions and activities of the training program, including the establishment and maintenance of strong, effective, and harmonious academic affiliations. This does not obviate the responsibility of the service to provide and

direct effective clinical education to trainees, but does ensure that the facility education office is engaged and aware of all major educational programs.

d. **Supervision of Trainees**

(1) Facilities must ensure that their training programs provide supervision for all trainees, as well as a duty hour schedule and a work environment that are consistent with proper patient care, the educational needs of trainees, and all applicable program requirements.

(2) All trainees must have an identified preceptor for each patient with whom they are clinically involved. Supervision must conform to VHA Handbook 1400.04.

(3) VHA training programs must ensure adequate supervision is provided for trainees at all times and that supervision is documented. **NOTE:** *See Appendix B.*

(4) Preceptors are allowed to provide supervision only for those clinical activities for which they are qualified and have been approved to perform. Procedures and services are provided by preceptors who are acting within the scope of their state licensures and delineated clinical privileges or delineated scope of practice.

(5) The preceptor has the ultimate clinical and legal responsibility for the care provided to the Veteran. The preceptor is fully responsible for all procedures and services. Fulfillment of that responsibility requires personal involvement with each patient and each trainee who is participating in the care of that Veteran.

(6) Substitute preceptors may at times be delegated the responsibility for care of the Veteran and the supervision of the trainees involved. The substitute preceptor must be fully qualified to provide supervision and to provide clinical services to the Veteran. The preceptor must ensure that trainees are informed of such delegation and can readily access a preceptor at all times.

(7) Each facility training program must conform to requirements of state law and certifying bodies, such as Council on Academic Accreditation, American Board of Audiology or Clinical Certification Board, and ensure that a successful program graduate shall be eligible for licensure and/or certification.

(8) The responsible preceptor is the primary provider, even if that preceptor did not personally see the patient or directly provide care.

e. **Levels of Supervision**

(1) In general, trainees with less education or training require more intense and more immediate supervision than do those with more advanced education and training. At the discretion of the preceptor and local policy, supervision may be more intense or closer than that indicated in this Handbook, but must never be less intense than what the policy permits.

(3) Determination of this level of supervision is determined by the experience and demonstrated competence of the trainee and of the complexity of the Veteran's health care

needs. The preceptor directs the care of the patient and provides supervision based on the nature of the patient's condition, the likelihood of major changes in the management plan, the complexity of care, and the experience and judgment of the trainee being supervised.

(4) Each facility training program needs to encourage and permit trainees to assume increasing levels of responsibility commensurate with their individual progress, experience, skill, knowledge, and judgment.

(5) **Permissible Levels of Supervision.** There are two types of supervision allowed for trainees in audiology and Speech-language pathology:

(a) Room. The preceptor is physically present in the same room while the trainee is engaged in direct health care activities. This level is synonymous with personal supervision.

(b) Area. The preceptor is in the same physical area and is immediately accessible to the trainee. The preceptor meets and interacts with Veterans as needed. The trainee and supervising practitioner discuss, plan, or review evaluation and treatment. Area supervision is available only when the trainee has formally been assigned a graduated level of responsibility commensurate with this type of supervision (see App. B). This level is synonymous with direct supervision.

***NOTE:** Office Academic Affiliations (OAA) VHA Handbook 1400.04 defines an available level. At this level, the preceptor's presence is not required during services, but the preceptor must be in the facility, available immediately by phone or pager, and able to be physically present as needed. This level is not authorized for audiology and speech-language pathology trainees.*

f. **Evaluation of Trainees, Supervisors, and Training Sites.** Each trainee must be evaluated in accordance with procedures outlined in VHA Handbook 1400.04.

g. **Staffing Needs for Education Programs**

(1) Programs with trainees assigned must have at least 2.0 full-time equivalent (FTE) staff audiologists or speech-language pathologists to be eligible for VA-funded traineeships. There needs to be frequent interaction with the VA staff practitioner serving as the education program director and the DEO. Programs with less than 1.0 FTE professional staff may not be able to provide the proper level of clinical supervision, nor can they properly educate trainees in an integrated program which must meet specific curricular goals and objectives.

(2) Programs must have sufficient expertise, facilities, and equipment to train students and fellows to a full scope of clinical practice.

(3) Programs must have adequate support staff in order to properly manage administrative complexities; i.e., reports, evaluations, syllabi, scheduling, and other correspondence.

h. **Accreditation of Education Programs**

(a) Trainees must come from an academic program accredited by an approved accrediting body. The Council on Academic Accreditation (CAA) of the American Speech-Language-

Hearing Association (ASHA) or the Accreditation Commission for Audiology Education (ACAЕ) is the accrediting body for audiology academic programs. CAA ASHA is the accrediting body for speech-language pathology academic programs.

(b) Accreditation of the university, college, or school by the CAA and/or ACAЕ includes all clinical training programs provided to trainees prior to graduation. Accrediting bodies, through the affiliated academic programs, monitor quality and grants accreditation to the academic training program.

(c) In addition to accreditation, facilities applying for funded traineeships must meet standards of excellence established by the National Audiology and Speech Pathology Office and published by the VHA OAA. Funded traineeships are available to VA facilities on a competitive basis.

(d) Sites that provide locally-funded or unfunded (without compensation) traineeships shall meet the same requirements as funded programs.

i. **Trainee Requirements and Funding Support**

(1) **Trainees Assigned to VA.** Trainees assigned to VA traineeships must:

(a) Be enrolled in an accredited program;

(b) Come from university(s), school(s) or college(s) with an affiliation agreement with the VA facility;

(c) Be appointed as a trainee on with or without compensation basis; and

(d) Be citizens of the United States (paid traineeships only).

(2) **Funding for Trainee Positions**

(a) Stipend rates for trainees are determined by the OAA.

(b) Allocation of funding for training positions is determined by OAA in collaboration with the Director of VA Central Office Audiology and Speech Pathology Service.

(c) Facilities must not create training positions funded directly or indirectly by sources or institutions other than OAA) without first receiving authorization from OAA to do so.

(d) Facilities must not fund trainees at a stipend level less than OAA proscribes.

(e) Facilities must not create unfunded training positions similar to training positions for which OAA provide stipend support.

(f) Trainees are eligible for VA benefits if appointed for at least 1 year.

18. SUPERVISION OF AUDIOLOGISTS AND SPEECH-LANGUAGE PATHOLOGISTS PREPARING FOR LICENSURE

NOTE: *This section does not apply to trainees.*

a. VHA Audiologist Qualification Standard (VA Handbook 5005, Part II, Appendix G29), Speech-Language Pathologist Qualification Standard (VA Handbook 5005, Part II, Appendix G30), require that an audiologist, speech-language pathologist, or audiologist/speech-language pathologist at the full performance level (GS-12 or above) must hold a full, current, and unrestricted license to practice in a State, Territory, or Commonwealth of the United States, or the District of Columbia. It allows an exception to this requirement for individuals, for a period not to exceed two years from the date of appointment, on the condition that such a individual provide care only under the supervision of a audiologist, speech-language pathologist, or audiologist/speech-language pathologist who is fully licensed. **NOTE:** *Audiologist/speech-language pathologists shall not be appointed after March 17, 2006 (see VA Handbook 5005, Part II, Appendix G31).*

b. Supervision consists of clinical consultation between the licensed independent practitioner serving as supervisor and the individual who is not licensed, for the purposes of monitoring, informing, and guiding the provision of services.

c. Supervision of Unlicensed Employees

(1) Audiologists who do not yet have a full, current, and unrestricted license to practice audiology must be supervised by an audiologist who possesses a full, current, and unrestricted license to practice audiology.

(2) Speech-language pathologists who do not yet have a full, current, and unrestricted license to practice speech-language pathology must be supervised by a speech-language pathologist who possesses a full, current, and unrestricted license to practice speech-language pathology.

(3) Supervisors must not supervise services outside of their licensed scope of practice or area of expertise. The Supervisor is a licensed independent practitioner of the same discipline who is a VA staff member with access to the electronic health record, and is qualified to provide the service.

d. An audiologist or speech-language pathologist, not yet licensed, must meet regularly with the supervisor to discuss cases and proposed interventions. The frequency and nature of ongoing supervision is determined by the complexity of the patient's needs and the documented competency of the not-yet licensed audiologist, speech-language pathologist, or audiologist/speech-language pathologist providing clinical services.

e. The supervisor must remain regularly informed and updated at all times on the nature of the clinical services provided by the supervisee. The amount of supervision must not be less than that required for unlicensed providers still in training.

f. All supervisors, acting in the best interests of the patient, must take the necessary corrective steps to address any deficiencies in care provided by supervisees.

g. The supervisor must arrange for alternate supervision when the assigned supervisor is unavailable, when clinical supervision of a particular case would not be ethically appropriate for the primary supervisor (as in the case of a potential conflict of interest), or when the clinical issues presented by a Veteran are outside of the primary supervisor's areas of expertise.

h. The clinical supervisor is responsible for ensuring that:

(1) The electronic health record clearly demonstrates involvement of the clinical supervisor in the supervised staff member-Veteran encounters, by co-signing the health record entry. A supervisor's co-signature signifies that the supervisor has reviewed the entry and concurs with the content of the entry. The supervisor may provide additional comments or information, as appropriate, in an addendum to the entry. The amount and type of supervision provided must be indicated either in the note or in an addendum added by the supervisor.

(2) For Veterans who are seen by the not-yet licensed staff member weekly or less frequently, each health record entry must have documentation of supervision. For Veterans who are seen more than once a week, at least one health record entry each week must have documentation of supervision, provided there is not a major change in the Veteran's condition that requires more frequent or closer supervision.

(3) If the supervision also provides necessary hours toward licensure eligibility, the supervisor and unlicensed staff member must abide by any additional state regulations concerning documentation of supervision.

19. FIELD ADVISORY COUNCIL (FAC)

a. The Audiology and Speech-Language Pathology Service Field Advisory Council (FAC) provides the National Audiology and Speech Pathology Program Office with advice and recommendations in their areas of expertise regarding program development, new clinical techniques and procedures, clinical policy, and program performance. This committee also provides feedback to the Director, Audiology and Speech Pathology Service, a component of the Office of Rehabilitation Services and Patient Care Services located in VA Central Office on matters of importance to field-based practitioners.

b. The FAC is composed of five field-based VA audiologists and five field-based speech-language pathologists who serve for 3 years. Members are recommended by the FAC Chairperson and approved by the Director, Audiology and Speech pathology Service. The Director, Audiology and Speech Pathology Service is responsible for appointing the FAC chairperson with the concurrence of the Chief Consultant, Rehabilitation Services. The Director may appoint ex-officio members to the FAC. The Chairpersons may be reappointed at the end of their term. The Chairperson may appoint committees and task forces recruited from the FAC members or from the field as necessary.

20. RESEARCH AND DEVELOPMENT

a. Audiology and speech-language pathology are evidence-based professions. Opportunities to participate in research are described on the Office Research and Development's (ORD) Web site at: <http://vaww.research.va.gov/default.cfm>. **NOTE:** *This is an internal VA Web site, not available to the public.*

b. VA-funded intramural research programs support intramural VHA research. The ORD operates the following research programs:

(1) **Biomedical Laboratory Research and Development Program (BLR&D).** This program conducts research that explores basic biological or physiological principles in humans or animals but does not involve intact human beings. Biomedical Research Program supports and enhances patient care by providing resources to acquire new knowledge leading to improvements in the prevention, diagnosis, and treatment of diseases and disorders. <http://vaww.research.va.gov/programs/blrd/default.cfm>. **NOTE:** *This is an internal VA Web site, not available to the public.*

(2) **Clinical Science Research and Development (CSR&D).** This program conducts research that focuses on intact human beings as the unit of examination. Examples include interventional and effectiveness studies, clinical, epidemiological and technological studies. <http://vaww.research.va.gov/programs/csrd/default.cfm>. **NOTE:** *This is an internal VA Web site, not available to the public.*

(3) Within CSR&D, Cooperative Studies Program (CSP) is responsible for the planning and conduct of large multicenter clinical trials in VA. CSP is comprised of professional experts at five data and statistical coordinating centers, a clinical research pharmacy coordinating center, and four epidemiological resource centers. Additionally, the CSP partners with the VA Health Economics Resource Center to perform economic analyses on its clinical trials (see <http://www.research.va.gov/programs/csp/>).

(4) **Health Service Research and Development (HSR&D).** This program conducts research at the interface of health care systems, patients and health care outcomes. HSR&D investigators study cost-effective approaches to delivering quality health services and which treatments and practices lead to the best outcomes for Veterans. HSR&D is also responsible for the Quality Enhancement Research Initiatives (QUERI) to improve the quality of healthcare for veterans by implementing research findings into routine clinical practice (see <http://vaww.hsrd.research.va.gov/>). **NOTE:** *This is an internal VA Web site, not available to the public.*

(5) **Rehabilitation Research and Development Program (RR&D).** This program conducts research intended to improve the quality of life of impaired and disabled Veterans. RR&D is dedicated to the well-being of America's Veterans through rehabilitation research projects, and evaluation and technology transfer to final clinical application (see

<http://vaww.research.va.gov/programs/rrd.cfm>). **NOTE:** *This is an internal VA Web site, not available to the public.*

c. **Merit Review Award Program**. This program is the principal mechanism for funding basic, preclinical biomedical and behavioral studies as well as clinical studies of disorders and diseases of importance to the health of Veterans. This program is limited to funding from Biomedical Laboratory Research and Development (BLR&D) and Clinical Science Research and Development (CSR&D) Services. Health Services Research and Development (HSR&D) and Rehabilitation Research and Development (RR&D) programs have separate merit review programs.

d. Audiology and speech-language pathology care providers within VHA may request Health Services Research and Development, Rehabilitation Research and Development, and Biomedical Research funding. Applicants for merit review funding must be at least five-eighths time employees (see http://vaww.research.va.gov/programs/blrd/merit_review.cfm). **NOTE:** *This is an internal VA Web site, not available to the public.*

e. **Career Development Award Program (CDA)**. This program was established to provide mentoring for junior researchers so they can learn from renowned, experienced VA researchers. Awards are provided in all areas of VA's research enterprise: biomedical laboratory, clinical science, health services, and rehabilitation research. **NOTE:** *See VHA Handbook 1200.4.*

(1) **CDA-1:** This entry level career development program is open to both clinicians and non-clinicians. Review criteria emphasize candidate qualifications, mentorship, and career development plan.

(2) **CDA-2:** This mid-level program also is open to both clinicians and non-clinicians who must specify their career development plans and research project over a 3-5 year duration.

(3) **CDTA:** The transition award is open only to clinicians who have submitted a merit review proposal that has been approved (although not necessarily funded). This award provides up to 3 years of transition funding to ensure that their VA research career is well-established.

(4) **CDEA:** The career development enhancement award for senior VA scientists is now also open to non-clinicians as well as clinicians. This award provides up to 6-months of salary for scientists to learn new research skills.

f. **RR&D Research Career Scientist Program (RCS)**. This program is designed to sustain and enhance the research careers of established non-clinician scientists who have demonstrated commitment to VA rehabilitation research. The program provides recognition and salary support for outstanding non-clinician scientists in VA. Research Career Scientists are nationally recognized VA scientists with a minimum of 6 years of national peer-reviewed research support may apply for the RR&D RCS award. Awards are for 5 years and are renewable indefinitely, subject to RR&D review. Senior Career Research Scientists are outstanding VA scientists who are recognized internationally as leaders in their field. Awards are for 7 years and are renewable indefinitely, subject to RR&D review.

g. **HSR&D Research Enhancement Award Program (REAP)**. This program provides support for groups of investigators at VA medical centers not affiliated with Center of Excellences, but who already have a history of research and career development funding. Sites develop core programs of investigators, statisticians, economists, and other social scientists to support and facilitate the development of research projects and the training and mentoring of new investigators.

h. **Research Training Opportunities**

(1) The HSR&D Research Career Development Program (RCDP) identifies talented post-doctoral fellows interested in health services research and provides a supportive, Veteran-focused clinical and mentoring environment. Candidates must demonstrate through their didactic work, research collaborations, and manuscripts that they have the appropriate level of training, commitment, and potential to become independent HSR&D investigators.

(2) **HSR&D Post-doctoral and Post-residency Training Program**. In collaboration with OAA, HSR&D sponsors post-doctoral and post-residency training programs at OAA-approved training sites for fellowships in health services research and medical informatics. OAA provides stipends for post-doctoral fellows who are also supported by supplemental funding from HSR&D for research-related expenses and technical support. HSR&D currently has fifteen training sites for PhD associated health professions training programs, three sites for post-doctoral physicians in health services, and eight post-doctoral and physician health professionals in medical informatics. OAA and HSR&D have also initiated support for a post-resident fellowship program in health services research at eight sites nationally. The training sites and contact information can be found on the OAA Web site at:
http://www4.va.gov/oaa/residencies_fellowships.asp.

21. REFERENCES

- a. American Academy of Audiology (2004). *Scope of Practice*.
<http://www.audiology.org/resources/documentlibrary/Pages/ScopeofPractice.aspx>
- b. American Academy of Audiology. Guidelines for the Audiologic Management of Adult Hearing Impairment.
<http://www.audiology.org/resources/documentlibrary/documents/haguidelines.pdf>
- c. American Speech-Language-Hearing Association. (2004). *Scope of Practice in Audiology* [Scope of Practice]. <http://www.asha.org/docs/html/SP2004-00192.html>
- d. American Speech-Language-Hearing Association. (2007). *Scope of Practice in Speech-Language Pathology* [Scope of Practice]. <http://www.asha.org/docs/html/SP2007-00283.html>
- e. American Speech-Language-Hearing Association. (2004). *Guidelines for the Training, Use, and Supervision of Speech-Language Pathology Assistants* [Guidelines].
<http://www.asha.org/docs/html/GL2004-00054.html>
- d. S3.1-1999 (R2008). *American National Standard Maximum Permissible Ambient Noise Levels for Audiometric Test Rooms*.

- e. ANSI S3.39-1987 (R 2007). *American National Standard Specifications for Instruments to Measure Aural Acoustic Impedance and Admittance (Aural Acoustic Immittance)*.
- f. ANSI S3.6-2004. *American National Standard Specification for Audiometers*.
- g. Title 38 CFR Section 4.85. *Evaluation of hearing impairment*.
- h. Title 38 CFR Section 17.149. *Sensori-neural aids*.
- i. IB 11-87. *Booth Audiometric Examination Specifications, June 1993*.
- j. VA Directive 1201. *Overview of VHA Research Programs*.
- k. VA Directive 1203. *Rehabilitation Research and Development*.
- l. VA Directive 1204. *Veterans Health Administration Health Services Research and Development*.
- m. VA Space Planning Criteria, Chapter 204. Veterans Health Administration – Audiology & Speech Pathology Service <http://www.cfm.va.gov/til/space/SPchapter204.pdf>
- n. VA Handbook 1200.15. *Eligibility for VA Research Support Handbook*.
- o. VHA Handbook 1400.04. *Supervision of Associated Health Trainees*.
- p. VA Handbook 5005. *Staffing*.
- q. VA Handbook 5017, Part V. *Employee Recognition and Awards*.
- r. VA Audiology and Speech Pathology Program Office (2004). *Handbook of Standard Procedures and Best Practices for Audiology Compensation and Pension Examinations*.
- s. VHA Handbook 1100.19. *Credentialing and Privileging*.
- t. VHA Handbook 1173.7. *Audiology and Speech Devices*.

PROVISION OF HEARING AIDS BY NON-VA SOURCES

1. CONTRACT HEARING AIDS

a. The Department of Veterans Affairs (VA) Audiology Clinic must provide the fee audiologist with a list of contract hearing aid makes and models.

b. After the fee audiologist examines the patient, the fee audiologist must consult with the audiologist at the VA Audiology Clinic and they shall jointly agree on the hearing aid make and/or model to be ordered. The fee clinic faxes the order to the VA Audiology Clinic and mails ear impressions with a paper order to the contract hearing aid vendor. The VA Audiology Clinic shall order the hearing aid from Denver Acquisition and Logistics Center (DALC) through Remote Order Entry System (ROES).

c. DALC sets up fee clinics with an account so that the instruments can be directly shipped to the fee clinic. The VA Audiology Clinic is responsible for certification and issuance of the instruments through ROES.

d. If an ear mold is required, they are part of the original order and come directly from the hearing aid manufacturer. Replacement ear molds must be ordered through Prosthetics and Sensory Aids Service (PSAS).

e. Fees for professional and technical services need to be arranged in advance through, and paid by, the Fee Basis Office. Services are limited to: hearing aid evaluations; hearing aid fitting and orientation; hearing aid verification and clinical outcome measurements; customary after care services (repair, reprogramming, and modification); and making ear impressions for ear molds.

2. NON-CONTRACT HEARING AIDS

a. In those instances where no contract hearing aid meets the needs of the patient, the VA audiologist must contact the local PSAS office.

b. Fee Basis funds must not be used to pay for hearing aids or other amplification devices.

3. REFERRALS TO HEARING INSTRUMENT SPECIALISTS

a. Referrals to private licensed hearing instrument specialists (hearing aid dealers) must be coordinated through the Chief Business Office (CBO) or equivalent office and PSAS by the VA Audiology Clinic. Contract hearing aids must be used unless no contract hearing aid meets the Veteran's needs.

b. Referrals to hearing instrument specialists must be allowed only in those circumstances where timely referral to private audiologists and or other VHA facilities is not feasible or when the medical status of the Veteran prevents travel to a VHA facility or a private audiologist subject to the following limitations.

(1) The standard of care in VHA is that audiologists must provide diagnostic evaluation and determine candidacy for hearing aid services. Physicians refer Veterans to the audiology clinic for diagnostic tests and determination of candidacy for amplification devices.

(2) VHA must not refer Veterans to hearing instrument specialists for diagnostic services or treatment services other than dispensing hearing aids or such other devices that hearing instrument specialists are allowed to sell by state law.

(3) The hearing instrument specialist must hold a full, current, and unrestricted license to sell hearing aids or other amplification devices allowed by state law.

(4) Contract Hearing Aids

(a) The VA Audiology Clinic must provide the hearing instrument specialist with a list of contract makes and models.

(b) The hearing instrument specialist must consult with the audiologist at the VA Audiology Clinic and they shall jointly agree on the make and/or model to be ordered. The fee clinic faxes the order to the VA Audiology Clinic and mails ear impressions with a paper order to the contract hearing aid vendor. The VA Audiology Clinic must order the hearing aid from DALC through ROES.

(c) DALC sets up fee clinics with an account so that the instruments can be directly shipped to the fee clinic. The VA Audiology Clinic is responsible for certification and issuance of the instruments through ROES.

(d) If an ear mold is required, they are part of the original order and come directly from the hearing aid manufacturer. Replacement ear molds shall be ordered through PSAS.

(e) Fees for professional and technical services arranged in advance through, and paid by, the Fee Basis Office. Services are limited to: hearing aid evaluations; hearing aid fitting and orientation; hearing aid verification and clinical outcome measurements; customary after care services (repair, reprogramming, and modification); and making ear impressions for ear molds.

4. NON-CONTRACT HEARING AIDS

In those instances where no contract hearing aid meets the needs of the patient, the VA audiologist must contact the local PSAS office.

DOCUMENTATION AND SUPERVISION REQUIREMENTS FOR TRAINEES

1. DOCUMENTATION REQUIREMENTS FOR EDUCATION PROGRAMS

a. There are differences between the requirements for educational supervision of trainees and the documentation necessary in order to bill for services provided by staff practitioners.

b. Specific payers apply specific guidelines for documentation of patient care services that are acceptable for purposes of third-party billing. Audiology and Speech-Language Pathology Services shall conform to local policy on documentation sufficient to meet academic, Joint Commission, and billing requirements.

c. Audiology externs who possess an interim, provisional, or temporary license shall not perform services without supervision and shall not document in such a manner that would cause their services to be billed as though they were independent practitioners.

d. Clinical fellows who possess an interim, provisional, or temporary license are considered trainees shall not perform services without supervision and shall not document in such a manner that would cause their services to be billed as though they were independent practitioners.

e. Any contribution of a trainee to the performance of a service or billable procedure must be performed in the physical presence or under the direct supervision of a qualified audiologist or speech-language pathologist.

f. The amount, level, and frequency of supervision must be appropriate to the competence and skills of the trainee.

2. SUPERVISION DOCUMENTATION

a. Documentation of supervision must be entered into the electronic health record (CPRS) by the preceptor or reflected within the trainee's progress note or other appropriate entries in the electronic health record. **NOTE:** *For the purposes of this Handbook, the term preceptor is synonymous with supervising practitioner.*

b. Types of allowable documentation are:

(a) Independent progress note or other entry into the electronic health record by the preceptor.

(b) Addendum to the trainee's progress note by the preceptor.

(c) Co-signature of the progress note or other electronic health record entry by the preceptor. **NOTE:** *Co-signature signifies that the preceptor has reviewed the trainee's note, and absent an addendum to the contrary, concurs with the content of the trainee's note or entry. Use of*

“additional signer” or “identified signer” options in CPRS is not an acceptable form of documenting trainee supervision. See VHA Handbook 1907.1.

c. The type of allowable documentation varies according to the clinical setting, the kind of patient encounter, and the trainee’s experience, competence, and skills. In all cases, the responsible preceptor must be clearly identifiable in the documentation of the patient encounter.

NOTE: *The timeframe for signing or co-signing the progress notes, consultations, and reports is delineated in local facility policy or local medical staff bylaws.*

(1) Inpatient Care

(a) Inpatient Admission. For patients admitted to an inpatient service of the medical center, the preceptor must physically meet, examine, and evaluate the patient. The timeframe for such evaluations is set by local policy. Documentation of the preceptor’s findings and recommendations regarding the treatment plan must be in the form of an independent progress note or an addendum to the trainee note.

(b) Continuing Care of Inpatients. Practitioners are expected to be personally involved in the ongoing care of the patients assigned to them in a manner consistent with the clinical needs of the established inpatient and the graduated level of responsibility of the trainee. Any of the three types of documentation referenced in subparagraph 2b is acceptable, subject to the provisions of subparagraph 2d.

(c) Inpatient Consultations. The preceptor is responsible for clinical consultations. When trainees are involved in consultation services, the preceptor is responsible for supervision of these trainees. Any of the three types of documentation referenced in subparagraph 2b is acceptable, subject to the provisions of subparagraph 2d.

(2) Outpatient Clinic

(a) Physical Presence. The preceptor must be physically present in the clinic area during clinic hours.

(b) New Outpatient Encounters. New outpatients to a facility require a higher level of supervising practitioner documentation than other outpatients. Each new patient needs to be seen by or discussed with the preceptor. Documentation of preceptor involvement is limited to an independent note by the preceptor or an addendum to the trainee’s note. The preceptor’s co-signature of the trainee’s note is not sufficient documentation of trainee supervision.

(c) Outpatient Consultations. A preceptor is responsible for clinical consultations. When trainees are involved in consultation services, the supervising preceptor is responsible for supervision of these trainees. Any of the three types of documentation referenced in subparagraph 2b is acceptable, subject to the provisions of subparagraph 2d.

(d) Continuing Care in the Outpatient Setting. Practitioners are expected to be personally involved in the ongoing care of established outpatients assigned to them in a manner consistent with the clinical needs of outpatients and the graduated level of responsibility of the trainee. Any of the three types of documentation referenced in subparagraph 2b is acceptable, subject to the provisions of subparagraph 2d.

(e) Discharge from Outpatient Clinic. The preceptor, in consultation with the trainee, ensures that the discharge of the patient from clinic is appropriate. Any of the three types of documentation referenced in subparagraph 2b is acceptable, subject to the provisions of subparagraph 2d.

(3) **Extended Care (Community Living Centers)**

(a) New Extended Care Admissions. Each new resident admitted to a community living center or extended care facility must be seen by the responsible preceptor. The timeframe is set by local policy. Documentation of preceptor involvement is limited to an independent note by the preceptor or an addendum to the trainee's note. The preceptor's co-signature of the trainee's note is not sufficient documentation of trainee supervision.

(b) Continuing Care in the Extended Care Setting. The preceptor must be identifiable for each trainee's patient care encounter. Practitioners are expected to be personally involved in the ongoing care of the residents assigned to them in a manner consistent with the clinical needs of the resident and the graduated level of responsibility of the trainee. Any of the three types of documentation referenced in subparagraph 2b is acceptable, subject to the provisions of subparagraph 2d.

NOTE: *For the purposes of this Handbook, a new patient is defined as a patient who has not been seen by an audiologist or speech-language pathologist in the audiology or speech-language pathology clinic in the past 24 months. An established patient is defined as a patient who has one or more encounters with an audiologist or speech-language pathologist in the audiology or speech-language pathology clinic in the past 24 months.*

d. **Documentation by Trainee Type**

(1) **Audiology Externs.** Any of the three types of documentation referenced in subparagraph 2b is acceptable, subject to the rules in subparagraph 2c.

(2) **Graduate Student Trainees in Audiology (Clinical Rotations).** The preceptor must personally write, date, and sign all documentation. Graduate students may participate in the writing of documentation as instructional exercises, but the responsibility for writing, dating, and signing all documentation resides solely with the preceptor.

(3) **Clinical Fellows.** Any of the three types of documentation referenced in subparagraph 2b is acceptable, subject to the rules in subparagraph 2c.

(4) Graduate Student Trainees in Speech-Language Pathology (Master's Traineeships).

The preceptor must personally write, date, and sign all documentation. Graduate students may participate in the writing of documentation as instructional exercises, but the responsibility for writing, dating, and signing all documentation resides solely with the preceptor.

e. Examples of Documentation by Trainees

(1) A preceptor sees a patient with a trainee present. The trainee performs certain tasks under the supervision of the preceptor. The trainee writes the note and the preceptor copies and pastes the note into CPRS. This is not acceptable documentation because the preceptor did not personally write the note.

(2) Same scenario, as above, but the preceptor and trainee jointly write the note or the preceptor edits the note before entering it. This is acceptable. Policy (VHA Handbook 1907.1) on copying and pasting material into CPRS must be followed.

(3) A trainee sees the patient under the direct supervision of the preceptor. The trainee writes the note and the preceptor co-signs it. This is acceptable, subject to the rules in subparagraph 2c and 2d.

(4) The practitioner and trainee jointly perform an evaluation. The preceptor writes the note in CPRS. This is acceptable documentation.

(5) The practitioner and trainee jointly perform an evaluation. The trainee writes the note in CPRS and the preceptor writes an addendum to the note indicating concurrence with the trainee's note. This is acceptable documentation, subject to the rules in subparagraph 2c.

(6) The preceptor and trainee begin a treatment session together. The preceptor leaves half way through but is available in the clinic area (direct supervision). The trainee writes the note and the preceptor co-signs it. This is acceptable, subject to the rules in subparagraph 2c and 2d.

f. Examples of Documentation by Graduate Student Trainees

(1) Preceptor makes all clinical decisions. There is a trainee in the room assisting. The practitioner writes the note in CPRS. The note contains "Trainee Present: [Trainee Name]." This is acceptable documentation because the preceptor personally wrote the note. The fact that a trainee is present in no way changes the nature of the encounter. The practitioner is responsible for the care.

(2) Same scenario as above, but the practitioner has the trainee draft a note in a word processing program such as Microsoft Word. The practitioner and trainee discuss the note and edit it together. The practitioner pastes the finished note into CPRS. This is acceptable documentation, subject to copying and pasting rules in VHA Handbook 1907.1

(3) The practitioner sees a patient with a trainee present. The trainee performs certain tasks under the supervision of the practitioner. The trainee writes the note in CPRS. This is not acceptable documentation because the practitioner did not personally write the note.

3. FINANCIAL RULES RELEVANT TO SUPERVISION

a. Person Class designation is restricted to individuals who are identified as providers and whose services are billable. The preceptor is considered the provider of record and their Person Class is used for billing purposes. With a few exceptions, a person class may not be assigned to trainees. In no instance shall assignment of a Person Class imply in any way that the trainee is credentialed to function independently. Any workload or encounters with the trainee entered will not transmit to the Financial Services Center due to lack of valid person class. Instead, patient encounters must be credited to the preceptor.

b. Trainees must have an appropriate User Class. The designation interacts with the Authorization/ Subscription Utility (ASU) to allow access to the electronic health record. VHA business rules do not prevent trainees from being assigned a user class.

c. Services performed by students must not be billed.

d. Only services performed by a credentialed provider must be billed.

e. Only documentation by the credentialed provider must be used for billing purposes.

f. Bills are issued only if there is progress note documentation of provider face to face involvement in addition to the Patient Care Encounter.

4. SUPERVISION OF TRAINEES

NOTE: VHA policy for supervising associated health trainees is found at:
http://www1.va.gov/vhapublications/ViewPublication.asp?pub_ID=1754

a. **Supervising Graduate Students.** The electronic health record must clearly demonstrate the preceptor personally performed, or performed with the assistance of a trainee, all procedures and services. Graduate students engaged in masters and doctoral clinical rotations must be personally supervised at all times.

b. **Supervision of Doctor of Audiology (Au.D.) Externs.** Externs must be supervised at a level taking into account the trainee's level of training, billing requirements, and local policy.

c. **Supervision of Clinical Fellows**

(1) Clinical fellows must be supervised at a level taking into account the trainee's level of training, billing requirements, and local policy.

(2) VA clinical fellows must not be supervised at the level specified in the minimum mentoring rules of the American Speech-Language-Hearing Association as this level of

supervision does not comply with VHA policy (see preceding subpar. 17e). ASHA guidelines for supervising clinical fellows is found at: <http://www.asha.org/certification/CFSupervisors.htm>

(3) In those instances where a VA practitioner supervises a non-VA clinical fellow off site, supervision rules established by the American Speech-Language-Hearing Association (ASHA) shall apply.

d. Graduated Progression of Responsibility

(1) As part of a training program, trainees earn progressive responsibility for the care of Veterans. The determination of a trainee's ability to provide care to Veterans without a preceptor physically present, or to act in a teaching capacity, is based on documented evaluation of the trainee's clinical experience, judgment, knowledge, and technical skill.

(2) Trainees must comply with state law in obtaining provisional, interim, or temporary licenses or obtaining permits or registration from licensing boards, where applicable. However, the fact that a trainee has a license does not change the requirements for supervision.

(3) Ultimately, the preceptor determines which activities the trainee must be allowed to perform within the context of assigned levels of responsibility. The overriding consideration in determining assigned levels of responsibility shall be safe and effective care of the Veteran.

(4) The Education Coordinator must define the levels of responsibilities, in consultation with preceptor(s), by preparing a description of the types of clinical activities trainees may perform. These activities shall be coordinated with the educational affiliate and individual needs of the trainee. The Education Coordinator must make this list of graduated levels of responsibility available to other staff. The Education Coordinator must include a specific statement identifying the evidence on which such an assignment is made and any exceptions for individual trainees, as applicable.

(5) Candidates for professional degrees must be educated and supervised within a specific educational curriculum determined by the college or university. The determination of a student's ability to provide care to patients shall depend upon documented evaluation of the student's clinical experience, judgment, knowledge and technical skills. The supervision of students is the responsibility of VHA staff audiologists or speech-language pathologists.

NOTE: *The principles of graduated levels of responsibility and independence do not preclude or circumvent the requirement that the preceptor exercise complete and personal responsibility for the management of the patient or the requirement that the preceptor provide personal or direct supervision of trainees as defined above.*

COMPENSATION AND PENSION EXAMINATION PROCEDURES

1. CREDENTIALING AND PRIVILEGING OF AUDIOLOGIST WHO PERFORM COMPENSATION AND PENSION (C&P) EXAMINATIONS

a. The objective of a C&P audiology examination is to obtain competent, thorough, critical, objective, and unbiased results. To ensure that audiologists are competent to provide medico-legal examinations and opinions that meet the high standards for accuracy and thoroughness necessary for adjudicating disability claims, audiologists who conduct C&P audiology examinations must have specific qualifications.

b. Each facility Director, or designee, is responsible for ensuring that:

(1) Audiologists who conduct C&P examinations for auditory disorders (hearing loss and tinnitus) are clinically privileged in accordance with VHA policy to perform and/or supervise the performance of the following activities as required for all C&P examinations for auditory disorders. The audiologist must be able to:

(a) Evaluate and diagnose auditory disorders, including hearing loss of all types and tinnitus;

(b) Determine when behavioral or electrophysiological testing is necessary and integrate the results of such testing into the examination reports;

(c) Comment on the significance of the Veteran's chief complaints and symptoms, pertinent military history, occupational history, with specific focus on noise exposure history, and pertinent medical, family and social history;

(d) Comment on tinnitus including dates and circumstances of onset, clinical presentation, and determine etiology; and

(e) Comment on the effect of hearing impairment and tinnitus on occupational functioning and daily activities.

(2) Audiologists with the following credentials are qualified to perform C&P examinations for auditory disorders:

(a) A full, current, and unrestricted license to practice audiology in a State, Territory, Commonwealth, or the District of Columbia.

(b) Examiner certification as required by VHA.

(3) Qualified audiologists complete documentation in accordance with VHA, VBA, and facility policy. As required in the C&P examination worksheets, examining audiologists must sign the reports. All signatures must include the audiologist's title and professional credentials

(i.e., Au.D, M.S., PhD). C&P examinations for auditory disorders may be returned to the VHA facility by Veterans Service Center (VSC) as inadequate for rating purposes, when examinations do not include the examiner's credentials and signature.

2. EXAMINATION PROCEDURES

a. C&P examinations for auditory disorders must be performed in accordance with applicable VBA and VHA guidelines, including *VHA Handbook of Standard Procedures and Best Practices for Audiology Compensation and Pension Examinations*, VBA worksheets, and published VBA policy. The examination worksheet is available at the Compensation and Pension Service website http://vbaw.vba.va.gov/bl/21/rating/Medical/exams/exam_home.htm.

NOTE: *This is an internal VA Web site, not available to the public.*

NOTE: *VHA Handbook of Standard Procedures and Best Practices for Audiology Compensation and Pension Examinations* is available on the Compensation and Pension Service website at <http://vbaw.vba.va.gov/bl/21/rating/Medical/docs/cphandbook.pdf>, *This is an internal VA Web site, not available to the public.*

b. To ensure that examination results are equivalent for all Veterans, these examination procedures apply to all audiologists who perform C&P examinations for auditory disorders. Fee basis or contract audiologists hired to perform C&P examinations for VHA facilities are subject to the same regulations and policies as VA audiologists. The VHA facility that hired fee basis or contract staff to perform C&P exams for auditory disorders has the responsibility to ensure that audiologists hold a full, current, and unrestricted license to practice audiology and adhere to VA policies for examinations and opinions.

c. Audiometric tests must be conducted in a sound isolated suite or booth that meets American National Standards Institute standards for maximum permissible ambient noise (ANSI S3.1-1999 [R2008]. **NOTE:** *See Appendix D for audiometric sound booth specifications.*

d. Pure tone thresholds by air conduction must be reported at the frequencies of 500, 1000, 2000, 3000, and 4000 Hz for each ear. The pure tone average (1000, 2000, 3000, and 4000 Hz) shall be reported for each ear.

e. The examination must be conducted without the use of hearing aids.

f. Both ears must be examined for hearing impairment even if hearing loss in only one ear is at issue.

g. The examination must include the following tests:

(1) Pure tone hearing thresholds by air conduction for each ear shall be obtained at 250, 500, 1000, 2000, 3000, 4000, 6000, and 8000 Hz; and by bone conduction at 250, 500, 1000, 2000, 3000, and 4000 Hz. A modified Hughson-Westlake procedure shall be used with appropriate masking. Bone conduction thresholds shall be measured when the air conduction thresholds are poorer than 15 dB HL.

(2) Spondee thresholds (SRT) and speech recognition scores shall be obtained for each ear using an approved recording of the Maryland CNC Test.

(3) Tympanometry (acoustic immittance) and acoustic reflex tests (ipsilateral and contralateral) shall be obtained for each ear.

(4) Stenger tests and other tests for non-organicity (e.g. behavioral testing, Stenger interference levels, and electrophysiological tests) shall be performed when necessary. A Stenger test shall be administered whenever pure tone air conduction thresholds at 500, 1000, 2000, 3000, or 4000 Hz differ by 20 dB HL or more between the two ears.

(5) Controlled speech recognition test using a VA-approved recording of the Maryland CNC test. Test materials must be obtained from the Audiology Service at the James H. Quillen VA Medical Center in Mountain Home, TN.

(6) Other tests may be performed at the discretion of the examining audiologist (e.g., otoacoustic emissions, evoked potentials).

h. Speech Recognition Test Procedures (Maryland CNC)

(1) The starting presentation level must be 40 dB re SRT. If necessary, the starting level must be adjusted upward to obtain a level at least 5 dB above the threshold at 2000 Hz, if not above the patient's tolerance level.

(2) The normal speech recognition performance is 94 percent or better for a full (50 word) list. If speech recognition is worse than 94 percent after presentation of a full list, then a modified performance-intensity function must be obtained to determine best performance. The modified performance intensity function must be performed as follows:

(a) The starting level is 40 dB re: SRT (speech reception threshold).

(b) The starting level will be adjusted upward to obtain a level at least 5 dB above the threshold at 2000 Hz, if not above the patient's tolerance level.

(c) Present 25 words at 6 dB above and 6 dB below the starting level.

(d) If recognition performance improves less than 6 percent, then maximum word recognition performance has been obtained. **NOTE: Example** - Starting level=50 dB HL. Initial performance=80%. Decrease level to 44 dB HL. Performance decreases to 76%. Increase level to 56 dB HL. Performance increases to 84%. Test level for full list=50 dB HL.

(e) If performance improves by 6 percent or more at the first 6-dB increment, then word recognition is measured using another 25 words at an additional 6-dB increment. **NOTE: Example** - Starting level=50 dB HL. Initial performance=80%. Increase level to 56 dB HL.

APPENDIX C

Performance improves to 88% (+8%). Increase level to 62 dB HL. Performance decreases to 84% (-4%). Test level for full list=56 dB HL.

(f) A full list (50 words) is then presented at the level of maximum performance. The word recognition performance at this level is reported as the speech recognition score. Only the best performance for a full list (50 words) will be reported.

i. The examining audiologist must state that the C-file was or was not reviewed.

j. The audiologist completes the required examination worksheets and must respond to all questions. Examinations must be documented in accordance with VBA, VHA, or facility policy.

k. If VBA requests an opinion, audiologists must respond to all issues and must provide a thorough, scientifically-based, and well-reasoned clinical rationale for all opinions.

l. Pure tone test stimuli must not exceed 105 dB HL or the tolerance level. Speech stimuli must not exceed 100 dB HL, or the tolerance level.

m. Pausing. Examiners need to pause, when necessary during speech recognition tests, in order to give the Veteran sufficient time to respond. This procedure will ensure that the test results are based on actual hearing loss rather than on the effects of other problems that might slow a Veteran's response. There are a variety of problems that might require pausing, for example, the presence of cognitive impairment. Audiologists need to determine when to use pausing and the length of the pauses.

**BOOTH AUDIOMETRIC EXAMINATION SPECIFICATIONS
(IB 11-87, JUNE 1993)****A. Executive Summary**

1. IB 11-87 was developed in response to a need to provide a consistent, comprehensive, non-restrictive specification for the acquisition of audiometric booths for VA medical center audiology programs. This specification is intended to define the minimum required performance and general design criteria for audiometric booth installations. This specification also addresses applicable test standards and reference documents. The specification is intended for use as part of an Invitation for Bids (IFB).

2. In addition to general specifications, each project shall contain certain site specific requirements that shall address the size of enclosure(s) to be installed, integration of the enclosures into the specific facility site, special functional needs, and any modifications necessary to address unusual sources of ambient acoustical noise, vibration, or electromagnetic interference. The exact configuration to be employed at each facility shall be determined by VA. These additional specification requirements shall be addressed by inclusion of any project-specific requirements in a completed copy of the attachment to the specification.

B. Technical Guidance.

1. This specification requires that VA conduct tests of booths after installation in addition to the normal inspection prior to acceptance (See section 17 of the specification). The testing is meant to determine whether installed booths meet the specified requirements for ambient noise levels as well as for electromagnetic interference (EMI) shielding attenuation.

2. In some instances, depending upon experience and availability of equipment, Biomedical Engineering or Audiology staff at a VA medical center may be able to test the ambient noise level in the booths. If not, most companies that perform calibration measurements would be qualified to conduct ambient noise level measurements according to the specified standards. Each medical center would have the option to contract with such firms.

3. EMI shielding attenuation measurements are far more difficult to ascertain and require special equipment and expertise not available in Biomedical Engineering or Audiology. Acceptance testing of the EMI shielding requires systematic measurements in the clinical environment. Such testing must be conducted in a manner that not only produces technically adequate measurements, but also minimizes the risk of EMI (due to signals generated for test purposes) with medical electronic devices, instruments, emergency communications, TV, and radio reception in patient rooms, lounges, waiting areas, etc. Consequently, this testing must be performed by persons with substantial demonstrated competence regarding measurements on EMI shielded rooms and considerations of electromagnetic compatibility and susceptibility.

4. To assess the qualifications of testing laboratories/contractors and their personnel that are considered for selection, criteria such as the following are likely to be useful:

- a. Evidence of successful completion of training within the last few years (with names, addresses, and telephone numbers of references) of at least three jobs involving compliance testing of a total (three or more jobs) of at least five EMI shielded rooms by means of NSA 65-6, or substantially equivalent procedures.
- b. National Association of Radio Telecommunications Engineers (NARTE) certification of test laboratory engineer(s) and technician(s), with all testing performed under the on-site personal direction and responsibility of at least one such engineer or technician.
- c. National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Programs (NIST, NVLAP) accreditation for electromagnetic capability and telecommunications using MIL-STD 462 test methods and/or FCC test methods.
- d. National Security Agency (NSA) Tempest endorsement program.

NOTE: *A given contractor will probably not meet all criteria, but criterion (subpar. B4a.) needs to be considered essential.*

5. EMI shielding attenuation measurements are relatively costly. However, when the cost and extended lifetime of these booths (typically the lifetime of the audiology clinic) are considered together with ever increasing sources of EMI in new technologies, it is well worth the expenditure to ascertain that the contractor has provided effective shielding prior to acceptance. Technical questions should be addressed to the Audiology and Speech Pathology Service.

C. Contracting Guidance

1. Technical information is provided in Section C, J (the attachment), and L. The Contracting Officer should complete the remainder of the solicitation, in accordance with the uniform contract format.
2. A pre-bid conference is strongly encouraged. If the facility site is a new construction, the Government shall provide the bidder with the location of the installation site and all necessary information concerning access and material handling to the jobsite.
3. Ensure that the following statement appears in Section B of the solicitation:

"NOTE: DESCRIPTIVE LITERATURE SHALL BE SUBMITTED WITH BID OR THE BID WILL BE REJECTED AS NONRESPONSIVE. SEE FAR 52.214-21, DESCRIPTIVE LITERATURE (APR. 1984), IN SECTION L."

4. Contracting questions should be addressed to the Acquisition Review Division.

BOOTH AUDIOMETRIC EXAMINATION (Section C)

1. SCOPE: This specification addresses prefabricated audiometric examination booths and rooms/suites suitable for the use in testing, calibration, and recording of aural acuity. A booth is defined as a free-standing double walled examination room. A suite is defined as a combination of a single or double walled control room and a double walled examination room (rooms are parts of suites). Henceforth, the term "audiometric booth" will be used generically when referring to booth, room, or suite. An audiometric booth covered by this specification includes all enclosure panels, components, wiring, lighting fixtures (including dimmers), ventilation silencers, and installation to make the booth completely operable.

2. ENCLOSURE CONFIGURATION AND SIZE

2.1 Configuration: Audiometric booths must be one of the following configurations:

2.1.1 Double Wall Examination Booth.

2.1.2 Single Wall Control/Double Wall Exam Suite.

2.1.3 Double Wall Control/Double Wall Exam Suite.

2.2 Size: Audiometric booths shall have the following minimum LD. (inner dimensions):

2.2.1 Double Wall Exam Booth I.D.: 10'0" x 9'0" x 6'6" high or 90 S.F.

2.2.2 Single Wall Control/Double Wall Exam Suite Exam Room I.D.: 10'0" x 9'0" x 6'6" high or 90 S.F. Control Room I.D.: 8'0" x 9'4" x 6'6" high or 75 S.F.

2.2.3 Double Wall Control/Double Wall Exam Suite Exam Room I.D.: 10'0" x 9'0" x 6'6" high or 90 S.F. Control Room I.D.: 8'0" x 9'4" x 6'6" high or 75 S.F.

2.3 A maximum four inch tolerance is allowed on length and width to permit booth to fit into standard footages of space. Heights specified in section 2.2 are without ventilating units or discharge silencers, roof or wall mounted.

2.4 Exterior Enclosure Dimensions: Outside dimension of enclosure will be determined by the specified interior enclosure dimensions, the enclosure configuration, and the thickness of the enclosure panels and airspaces required to meet the specified acoustical performance criteria.

2.5 Exterior Dimensions of Suites with Common Outer Shells: Installations requiring multiple audiometric booths may be installed in common outer shells in order to conserve floor space. Installations involving common outer shells shall be designed such that the acoustical isolation between enclosures at least equals that specified for double wall enclosures in section 15.2 of this document. Specification of audiometric rooms or suites to utilize a common outer shell shall be noted on the attachment.

2.6 Installation in Pits: For audiometric booth installations that are recessed into the facility floor, the overall outside dimension will be determined by the size of the pit, less the required clearances.

3. CONSTRUCTION

3.1 Design: Audiometric booth and all components thereof shall conform to the requirements specified herein. All parts of the booth having the same manufacturer's part number shall be completely interchangeable with respect to installation and performance. Booth shall consist basically of the following components:

3.1.1 Vibration isolation system.

3.1.2 Floor assembly.

3.1.3 Wall and roof panel assembly.

3.1.4 Acoustical door units.

3.1.5 Acoustical window units.

3.1.6 Assembly hardware, including connecting panel joints.

3.1.7 Electrical and lighting wiring, components and fixtures.

3.1.8 Silenced forced air ventilation system or packaged air conditioning silencers for connection to building HVAC systems.

3.1.9 Carpeting.

3.1.10 Paint and other specified finishes.

3.1.11 Dust seals/shields and closure strips.

3.1.12 Jack panel.

3.2 Modular Components: The audiometric booth shall be constructed of modular, prefabricated panels and assembly hardware. Enclosure must be capable of being disassembled, moved, and reassembled at some future date with minimal loss of material or acoustical integrity.

3.3 Independent Structure: Audiometric booths shall be independent, free standing structures, providing all required structural support for the enclosure as an integral part of its design. Booth shall not make structural contact with the facility at any place except at the floor/wall connection and at the vibration isolation systems and, except for the floor, shall not depend on the facility for any of its structural support. Audiometric booths shall be furnished as completely prewired, upon assembly, and ducted for HVAC services. Electrical service shall be

wired so as to allow for single point electrical tie-in for each booth by the Project General Contractor or VA Engineering Service personnel. HVAC silencers shall be configured so as to allow the connection of standard flexible vibration isolating ductwork from the main facility HVAC ductwork (when specified in the attachment) to the audiometric booth silencers by the Project Contractor or VA Engineering Service personnel.

3.4 Structural Requirements: Audiometric booth panels and structural support system shall be of sufficient structural design so as to be capable of supporting uniformly distributed roof loads of 55 pounds per square foot and lateral wall loads of 20 pounds per square foot.

3.4.1 Load on Facility Floor: Audiometric booths shall present a maximum average live load to the facility of no more than 100 pounds per square foot. The average live load of the audiometric booth is defined as the total assembled weight of the booth divided by the exterior plan area it occupies and does not include any additional loads added by the personnel or equipment that occupies the booth. Bidder shall supply VA Engineering upon request with a detailed floor loading distribution, specifying location and magnitude of point and line loads presented to the facility floor by the enclosure outer shell and vibration isolation rails.

4. FLOORS

4.1 Isolated Acoustical Floors: All audiometric booths shall employ isolated acoustical floor systems in both control and examination room areas. Isolated floor systems on all examination rooms shall support the examination room walls so as to fully isolate the floor, walls and ceiling of the enclosure from facility area vibrations. Isolated floors in control room areas of single wall control/double wall exam suites may be set inside of the wall panels to facilitate efficient construction of the suite. Isolated floors in control room areas of double wall control/double wall exam suites shall fully support and isolate the wall and ceiling panels of the control room.

4.2 Floor Panels: Floor panels shall be constructed of welded framework of formed steel channel, sheet steel top and bottom skins, and shall be fully insulated. Structural framing shall be minimum 11 gauge cold rolled steel channel sections, spaced as required to meet the structural requirements of section 4.3. Top walking surface shall be minimum 11 gauge sheet steel. Bottom floor panel closure skin shall be minimum 20 gauge sheet steel. Floor panels shall be fully insulated with acoustical filler material which is inert, mildew resistant, and vermin resistant.

4.3 Structural Requirements: Floor panel and isolation system shall accommodate a 60 pound per square foot live load without structural deflection which exceeds $L/240$.

4.4 Quality of Construction: Floor panels shall be welded so as to provide a flat, smooth walking surface, and sheet steel shall be attached to floor panel framework in a manner so as to prevent "popping" or "oil-canning". Any defects in floor panels that are caused as a result of broken welds or other defective construction methods shall be fully repaired by the contractor at the time of installation.

4.5 Vibration Isolation Systems: Unless otherwise specified due to unique site conditions, all audiometric booths shall be provided with a vibration isolation system with a cutoff frequency of 6 1/4 Hz. The load from each required isolator in the isolation system shall be distributed to the facility floor through a steel channel isolation rail. The concentrated point load in the isolation rail system shall not exceed 800 pounds at any point.

4.6 Pits: Unless otherwise specified in the attachment (Section J), audiometric booths shall be installed in a pit with a depth of 6 5/8". Pits shall be prepared in accordance with the following guidelines:

4.6.1 Pit Depth: Audiometric booth pits shall be 6 5/8" deep, from the bottom of the pit to the top of the facility building floor. Allowance for area floor coverings must be made when determining pit depth to ensure that audiometric booth doors will clear the building floor coverings.

4.6.2 Pit Size: The length and width of the pit shall be 4" larger in each direction than the outside dimensions of the audiometric booth, except at the front of the booth (the entry side), where the pit need only allow a 1" clearance. The pit shall be square to within 1/4" in 20'.

4.6.3 Pit Edges: The edges of the pit shall be square and true through the length and width of the pit. The radius of the corner between the bottom of the pit and the pit edge wall shall not exceed 1/2". Pit edges must be troweled smooth and cleaned of all debris that may contact the audiometric booth.

4.6.4 Level of Facility Slab: Facility building concrete floor or pit shall be poured in accordance with American Concrete Institute Standard Tolerances for Concrete Construction and Materials standard ACI 117-81 as a minimum requirement. *Facility area concrete floor or pit shall be level to 1/4"/1 in any 10' section for proper installation of audiometric booth.*

4.6.5 Facility Slab Structural Requirements: The area floor or pit shall support a minimum live load of 200 psf (100 psf for the audiometric booth plus a 100 psf allowance for audiometric booth equipment, patients, and personnel).

4.6.6 Raised Floor and Ramps: In situations where VA determines that it is not feasible to prepare concrete pits for installation of audiometric booths, the contractor shall raise floor areas or provide ramping to facilitate access to the audiometric booths.

5. WALL AND CEILING PANELS

5.1 Prefabricated Panels: The audiometric booth shall be constructed of prefabricated steel wall and ceiling panels that meet the modularity requirements of section 3.2. Panels shall be 4" thick, unless specified otherwise due to special acoustical considerations. Panels shall be constructed of a welded framework of formed steel channel, a solid sheet steel outer panel skin, a perforated steel inner panel skin, and shall be fully insulated. Structural framing shall be minimum 18 gauge steel channel sections on no less than 24" centers. Panel outer skin shall be

minimum 16 gauge electro-galvanized, bonderized cold rolled steel. Panel inner skins shall be minimum 22 gauge electro-galvanized, bonderized perforated steel, with perforations not exceeding 1/8" diameter and a perforation pattern that provides at least the minimum sound absorption required in section 13.4.

5.2 Panel Weight: Audiometric booth wall and ceiling panels shall meet the acoustical requirements in section 13.4. The actual per square foot weight of the wall and ceiling panels required to meet these acoustical requirements may vary, provided the overall enclosure floor loading does not exceed the requirements of sections

3.4 and 3.4.1. In no case shall the average per square foot weight of the wall and ceiling panels used in construction of the booth be less than 8 pounds per square foot.

5.3 Panel Fill Materials: Audiometric booth walls, ceilings, floors, and doors shall be fully insulated with acoustical filler material which is inert, mildew resistant and vermin resistant. Insulation shall be packed into the panel so as to fully fill the panel cavities, leaving no voids. Fill materials shall provide at least the minimum sound absorption properties required in section 13.4. All fire rating requirements specified in section 15 must be met.

5.4 Quality of Construction: Panels shall be welded so as to secure outer panel skins to the panel framework to prevent bulges, creases, or looseness in the skin. Inner panel skins shall be spotwelded or pop-riveted to the panel framework to secure the perforated steel to the framework, to constrain the acoustical fill material, and to prevent "oil-canning" of the inner panel skin. All exposed welds shall be ground smooth.

5.5 Quality of Construction for EM-shielding Requirements: For shielded audiometric booths, panels shall be constructed to meet the EM SA (electromagnetic shielding attenuation) requirements expressed as attenuation in dB (decibels), as specified in Table 4B, section 14. Electrical connections necessary to meet these EM SA requirements, including, but not necessarily limited to, connections at joints between panels, shall be made using procedures and materials resistant to corrosion in conditions of normal use. Booths must be warranted to meet the requirements of section 14 for at least 3 years after installation.

6. DOORS

6.1 Door Assemblies: Each audiometric booth shall be provided with one acoustical door and frame assembly per room, unless specified otherwise. Door and frame assembly shall consist of one door on single wall enclosures and two doors on double wall enclosures.

6.2 Door Construction: Door and frames shall be constructed of formed steel framework and sheet steel skins. Door leaves and frames shall be constructed of materials specified in section 5 of this document for wall and ceiling panel construction. Doors shall be factory prehung and mounted in the frame on cam lift type door hinges. Doors shall be sealed and held in the door frame with positive latch hardware.

6.3 Door Hardware: Each door assembly shall be provided with a pair of camlift hinges, entry and exit handles, push and pull plates, self-closer, and all required door seals. Door hardware or locking mechanisms may be specified in the attachment (Section J).

6.4 Door Acoustical Performance: The transmission loss of the door and frame assembly shall have a minimum STC (Sound Transmission Class) rating of 47 as specified in section 13.3.

6.5 Door Thresholds: Door shall be sealed at the threshold with a compression type other door threshold seals which contain moving parts shall not be acceptable. Door thresholds shall be constructed of a tapered steel plate. The door threshold shall not be raised more than 1/4" above the floor coverings inside or outside the booth, whichever is higher.

6.6 Quality of Construction: Door leaves and frames shall be welded so as to secure skins to the internal framework in a manner that prevents bulges, creases, or looseness. All exposed welds shall be ground smooth. Exposed surfaces of door and frame shall be filled as required and ground smooth prior to painting.

6.7 Door Configurations: Enclosure door configuration for double wall examination rooms shall be one of the following:

6.7.1 Inswing/Outswing

6.7.2 Piggyback

6.7.3 Tandem Outswing

6.8 Door Clear Openings: Unless specified in the attachment (Section J), the clear opening of all doors shall not be less than 36" x 73 1/2". Doors with larger clear openings may be specified on the attachment.

6.9 Door Dust Shields: Door openings on double wall booths shall be furnished with dust shields between door openings. Dust shields shall be flexible, non-metallic, black material and shall not compromise the vibration isolation between the inner and outer enclosures.

6.10 Door Fire Ratings: Acoustical door and frame assemblies shall meet the fire rating requirements of section 15.1.4 of this document.

6.11 Door EM -shielding Requirements: For shielded audiometric booths, acoustical door and frame assemblies shall be provided with EM -shielding gasketing. These gaskets shall provide at least the required EM-shielding attenuation for the booth to meet the minimum requirements of Table 4A, section 14.

7. WINDOWS

7.1 Window Assemblies: Each audiometric booth or room shall be provided with one patient viewing window and windows in doors as specified in this section.

7.2 Window Construction: Windows shall be double glazed, clear, 1/4" minimum thickness, laminated (safety) glass. Window panes shall be mounted in acoustically tight, neoprene-gasketed frames and shall be separated by a 4" airspace. Airspace within the frame shall be filled with an acoustical insulation to dampen window resonances and shall be covered by a perforated steel liner. Desiccant material shall be installed between window panes to prevent condensation, and shall be so placed that the view through the window is not obstructed.

7.3 Patient Viewing Window Size: Unless specified otherwise, the size of the patient viewing window shall be no less than 30" wide and 24" high and shall be located no less than 32" above the examination room floor. Patient viewing windows of larger sizes may be specified on the attachment (Section J).

7.4 Windows in Doors: Audiometric booth doors shall be provided with a minimum of 12" x 12" windows as specified in section 7.2, in the door leaves.

7.5 Window Dust Shields: Double wall enclosures and suites shall be provided with dust shields between the window units. Dust shields shall be flexible, nonmetallic, black material and shall not compromise the acoustical and vibration isolation between the inner and outer enclosures.

7.6 Alternate Window Constructions: Windows of alternative construction materials may be employed when utilizing alternative panel construction and acoustical/EM shielding performance options or if there are special functional requirements for the windows. Alternative window construction shall be compatible with the acoustical/EM-shielding requirements of the alternative performance option specified in the attachment (Section J).

7.7 EM -shielded Windows: For shielded audiometric booths, EM -shielded window screening shall be used. This window design shall enable the booth to meet the performance requirements of Table 4A, in section 14.

7.8 Window Fire Rating: All windows in wall assemblies shall meet the fire rating requirements specified in section 15.1.5.

8. VENTILATION AND AIR CONDITIONING SYSTEMS

8.1 Ventilation System: Audiometric booths shall have a ventilation system that provides airflow to each enclosure. Ventilation systems shall include air transfer silencers to meet the acoustical performance requirements and ventilation openings and grills on the interior of booths. The ventilation system shall be either a self-contained, fan-forced system or be ducted to facility building HVAC services. Type of ventilation system to be employed must be specified on the attachment (Section J).

8.2 Materials and Construction: The audiometric booth ventilation system silencer and fan housings shall be either an integral part of the enclosure design or packaged HVAC silencers inserted in the facility ductwork. Outer casings for HVAC silencers and fan housings shall be of galvanized sheet steel construction and shall be constructed in accordance with ASHRAE guidelines. Liner materials shall be of inorganic mineral or glass fiber materials of a sufficient density to obtain the required acoustical performance. Acoustical liner materials shall be inert, mildew resistant and vermin resistant and shall have ASTM E84-87 fire ratings that meet or exceed the requirements of section 15.1.1.

8.3 Self-Contained Ventilation Systems: When specified in the attachment (Section J), the audiometric booth will be provided with a self-contained, fan-forced ventilation system. Ventilation silencers and fan assemblies shall be wall or roof mounted. The fan-forced ventilation system shall be designed so as to draw conditioned air from the facility area through the audiometric booth and to return it to the facility area. The fan-forced ventilation system shall provide a minimum of one complete air change every 10 minutes. Fans shall operate on 110 volt, 60 Hz, single phase power. The fan system for each booth shall be provided with a wall mounted switch to operate the ventilation system.

8.4 Direct Coupled Ventilation Systems: As specified in the attachment (Section J), the audiometric booth shall be provided with a ventilation system designed to be connected to the facility building HVAC systems. Audiometric booth silencers shall be equipped with 6" diameter flexible duct ring connection points to be used for connection to the building HVAC systems to provide vibration isolation from the duct work of the building HVAC system. Ventilation silencers shall be wall or roof mounted. Ventilation silencers shall accommodate an airflow rate that will allow for one complete air change every 10 minutes.

8.5 Pressure Drop in Direct Coupled HVAC Systems: Audiometric booths which are connected to building HVAC systems shall be equipped with silencer systems that provide pressure drops that do not exceed 0.25 inches H_2O at an airflow rate corresponding to one complete air change every 10 minutes. All airflow and pressure drop measurements shall be in accordance with ASHRAE guidelines.

8.6 Acoustical Performance of Self-Contained Ventilation Systems: The resultant noise levels inside of the audiometric booth shall not exceed the values specified in section 17.4.

8.7 Acoustical Performance of Direct Coupled HVAC Systems: The resultant noise levels inside of the audiometric booth shall not exceed the values specified in section 17.4, provided that the facility HVAC system sound pressure levels at the connection point to the audiometric booth silencers do not exceed the levels in Table 1 in this section.

Table 1 Maximum Allowable Sound Pressure Levels (SPL) at Connection Point of Facility HVAC System to Audiometric Booth Silencer

Octave Band	Single Wall Control Room	Double Wall Booths/Rooms/Suites
-------------	--------------------------	---------------------------------

Preferred Center Frequency (Hz)	Maximum Allowable SPL (dB)	Maximum Allowable SPL (dB)
63	57	64
125	48	57
250	41	51
500	35	45
1000	31	41
2000	29	39
4000	28	38
8000	27	37

8.8 Noise Levels of Ventilation Systems Outside the Audiometric Booth: For a freestanding, double walled examination booth which is located within a room in the facility, the fan assembly used in the ventilation system shall not produce noise levels which would preclude live-voice testing or other activities in the room housing the booth.

8.9 Thermostats for Control of Direct Coupled HVAC Systems: When specified on the attachment (Section J), audiometric booths shall be provided with recessed junction box and conduit for use in providing thermostatic control of HVAC systems. The thermostat and connection to HVAC systems are the responsibility of the Government.

9. ELECTRICAL

9.1 Electrical Systems: All electrical components and conduits shall be recessed into the wall panels and shall be wired in accordance with NEC standards. All electrical components shall be UL (or equivalent laboratory approved) listed Hospital Grade components and shall operate on 110 V, 60 Hz, single phase power. Audiometric booths shall be supplied completely pre-wired, when assembled, to a single plug or electrical junction box for each booth. Power source and connection of power to booth are the responsibility of the Government.

9.2 Electrical Outlets: The following minimum number of recessed duplex 110V electrical outlets shall be provided:

9.2.1 Double Wall Examination Booths: 2 each recessed duplex outlets inside enclosure and 1 each 6 outlet plug strip (surface mounted on recessed box) on outside of enclosure.

9.2.2 Single Wall Control/Double Wall Examination and Double Wall Control/Examination Suites: 2 each recessed duplex outlets in the examination room and 1 each 6 outlet plug strip in each room. Additional plug-in power strips may be specified on the attachment (Section J).

9.3 Electrical Service: The Government will connect each audiometric booth to a 110 volt, 20 amp, electrical service. For shielded audiometric booths, the contractor is responsible for notifying VA regarding modifications necessary to achieve EM SA requirements.

9.4 Electrical Systems Grounding: All audiometric booth electrical systems shall be grounded in accordance with NEC standards.

9.5 Grounding of Booth: For shielded audiometric booths, suitable grounding shall be provided to achieve EM SA requirements. Connection to earth ground is the responsibility of the Government. Proper grounding arrangements must be available at the VA facility site. If not, the contractor is responsible for notifying the VA.

9.6 Additional Electrical Components: Additional outlets or other electrical components to be provided may be specified in the attachment (Section J).

10. LIGHTING

10.1 Lighting Systems: Audiometric booths shall be provided with pre-wired, recessed incandescent or fluorescent light fixtures. The ballast required for a fluorescent light fixture shall be external to the booth.

10.2 Standard Lighting Levels: A sufficient number of fixtures shall be employed so as to provide a minimum of 60 foot candles of light at 36" above the booth floor.

10.3 Supplemental Lighting: Track or bullet type lighting may be specified in order to provide supplemental or spot lighting. Specifications on light fixture type, make and model and number of fixtures to be employed shall be included in the attachment (Section J).

10.4 Light Switches: Lighting fixtures shall be provided with one wall mounted, recessed light switch to operate all lights in the enclosure. Additional light switches or individual switching for different types of lighting may be specified in the attachment (Section J).

10.5 Light Dimmers: Recessed light dimmers for incandescent fixtures shall be provided when specified in the attachment (Section J). All light dimmers shall be low noise type dimmers. Light dimmers shall be provided in control rooms of suites which specify the use of one-way glass windows.

11. JACK PANELS

11.1 Jack Panel System: Each audiometric booth shall be provided with a flush mounted, pre-wired jack panel system for connection of test equipment between control and examination rooms.

11.2 Jack Panel Connectors: Each jack panel system shall contain as a minimum the following connectors:

11.2.1 Ten each Switchcraft Type 12B 1/4" three conductor phone jacks with covers.

11.2.2 One each Cinch Jones Type S-304-AB four pin plug (male).

11.2.3 One each Cinch Jones Type S-303-AB three pin plug (male).

11.2.4 One each 1" diameter pass through hole with cover.

11.3 Additional Jack Panel Connectors: Additional or special jack panel connectors shall be provided as specified in the attachment (Section J).

11.4 Jack Panel Wiring: All jack panel connections shall be made with minimum 22 gauge shielded cable. All connections shall be soldered and tested at the factory. Each jack connection shall be independently grounded and isolated from the jack panel face plate.

11.5 Jack Panel Face Plates: For shielded audiometric booths, jack panel face plates shall preserve the acoustical and EM -shielding integrity of the booth. Jack panel face plate on each side of booth shall be marked and numbered so as to allow easy identification of individual circuits from either side.

11.6 Computer Interface Connections: When indicated in the attachment (Section J), 25 pin RS-232 interface and/or other interface connections shall be provided between control and examination rooms. Connectors shall be mounted in the cover plate for a recessed electrical box to be located under the patient viewing window. In addition, when specified in the attachment (Section J), a 2" x 4" electrical box with a blank cover plate and conduit to the enclosure roof, shall be provided in the control room for use in connecting computerized test equipment to facility computer network or data systems.

11.7 Cable Pass-Through Ports: When specified in the attachment (Section J), 2 1/2" diameter cable pass-through ports shall be provided from the control room to the examination room for use in passing connectors and cables that are not connected through the jack panel. Cable pass-through ports shall be constructed of minimum 2 1/2" diameter pipe, shall be capped on both sides and shall be supplied with acoustical putty to seal these ports when the cables are installed. These ports shall not compromise the acoustical and vibration isolation of all booths and the EM-shielding performance of shielded booths.

12. FINISHES

12.1 Finish Requirements: Unless specified otherwise in the attachment (Section J), audiometric booths shall be finished in accordance with the requirements listed in this section.

12.2 Paint Finish: All interior and exterior exposed surfaces of the audiometric booth shall be factory pre-painted prior to installation. Steel panel surfaces shall be properly cleaned, prepared and primed with a nitrocellulose modified-phenolic coating to a dry film thickness of 0.6-mil. minimum so as to accept the finish paint coat. Unless otherwise specified in the attachment (Section J), panels shall be thoroughly coated with nitrocellulose alkyd modified lacquer, (or functionally equivalent coating) to produce a flat or textured finish in colors specified in the attachment (Section J).

12.3 Floor Carpet: Unless otherwise specified in the attachment (Section J); the contractor shall provide carpeting for all inner floors. Carpeting shall meet the requirements of Federal Specification DDD-C-95 and the fire rating requirements of the Federal Flammability Standard FF-I-70 in section 15.1.2. Carpeting shall be cemented to the floor and shall be provided with rubber molding: The color shall be specified in the attachment (Section J).

12.4 Closure Panels: The contractor shall provide closure panels that close off airspaces between booths as well as between the booth and the facility walls. Closure strips shall be finished similarly to the external finish of the booth and shall be installed in a manner so as to not compromise the acoustical and vibration isolation of the booths. Closures between the audiometric booth and the facility ceilings shall be provided by the Project General Contractor or VA Engineering Service, unless specified otherwise in the attachment (Section J).

13. ACOUSTICAL PERFORMANCE REQUIREMENTS

13.1 Acoustical Performance: Audiometric booths and the components utilized to construct them shall meet the minimum acoustical requirements detailed in this section. Acoustical performance enhancements shall be specified in the attachment (Section J).

13.2 Enclosure Noise Reduction: Audiometric booths shall meet the airborne noise reduction requirements specified in Table 2, when measured in accordance with ASTM E596-90:

Minimum Noise Reduction for Audiometric Booths/Rooms/Suites

Octave Band Frequency	Single Wall Control Room	Double Wall Booths/Rooms/Suites
Center Frequency	Noise Reduction (dB)	Noise Reduction (dB)
125	27	44
250	36	62
500	44	63

1000	53	90
2000	58	95
4000	60	95
8000	57	>91

Noise reduction measurements shall be made in 1/3 octave bands and converted to octave band results using a calculation method appropriate to the source spectrum (e.g. pink noise). Audiometric booth must meet at least the minimum specified octave band noise reduction in each octave band.

13.3 Transmission Loss of Door and Frame Assembly: The audiometric booth acoustical door and frame assembly shall have a minimum STC rating of 47 when tested in a laboratory environment in accordance with ASTM E90-90 and calculated in accordance with ASTM E413-87.

13.4 Panel Sound Absorption Coefficients: The sound absorption coefficients of the wall and ceiling panels (Reference ANSI S3.6-1989, revised to ANSI S3.6-2004) used to construct the audiometric booth shall have the minimum sound absorption coefficients specified in Table 3, when measured in a laboratory environment in accordance with ASTM C423-90a using a sample size of at least 72 square feet.

Table 3 Minimum Sound Absorption Coefficients for Audiometric Booth Panels

Octave Band Center Frequency	Sound Absorption Coefficient
125	0.40
250	0.70

Octave Band Center Frequency	Sound Absorption Coefficient
500	0.70
1000	0.70
2000	0.70
4000	0.70
8000	0.70

13.5 Testing Laboratories: All tests shall be conducted at either a nationally recognized independent test laboratory, in a laboratory accredited by NIST, NVIAP, or at a U.S. government laboratory.

13.6 Test Report Requirements: All laboratory test data shall have been obtained by conducting tests in accordance with the specified procedures and standards. All test data shall have been obtained within the past 5 years, and shall be certified by the bidder as indicative of current production methods. Test reports shall contain complete documentation of the sample's exterior features, salient characteristics and component weights in order to ensure that all test data are based on components of similar construction.

14. ELECTROMAGNETIC SHIELDING ATTENUATION REQUIREMENTS

14.1 EM SA (Electromagnetic Shielding Attenuation) General Requirements: All examination rooms shall be shielded. Control rooms shall be shielded if specified in the attachment (Section J).

14.2 Specific Requirements: At a minimum, shielded audiometric booths shall be constructed to meet the requirements for EM -shielding attenuation specified in Tables 4A and 4B. These requirements are applicable to shielded audiometric booths located to avoid potential interference from electromagnetic fields. Measurement methods shall be in accordance with paragraphs *d. (U) Acceptance Tests*, *e. (U) Electric and Magnetic Fields*, and *f (U) Reference Level of B16. (U) Quality Assurance Provisions of Specification NSA No. 65-6, 30 October 1964*, with the following exceptions, additions, and clarifications:

14.2.1 In addition to the requirements in the cited paragraphs of NSA 656, leakage checks must also be made at all windows, jack panels, computer interface interconnection panels, cable pass-through ports, penetrations for lighting and ventilation systems, and at representative accessible panel seams.

14.2.2 Measurements shall be made with the source (signal source and transmitting antenna) inside the booth and the receiver (receiving antenna, preamplifier, if used, and spectrum analyzer) outside.

14.2.3 Magnetic fields shall be measured with 12-inch diameter loop transmitting and receiving antennas (Section J, Figure 1). This and subsequent figures show a wall panel, but other panels, e.g., the ceiling, as well as doors and windows, shall also be examined. Transmitting and receiving antennas are separated by 24 inches plus the thickness of the shield panel(s).

14.2.4 Test antennas for the electric field measurements shall be 41-inch monopole rods, as shown in Section J, Figure 2. Transmitting and receiving antennas shall be separated by 24 inches plus the thickness of the shield panel(s).

14.2.5 For the plane wave measurements, biconical rod antennas shall be used (Section J, Figure 3) at the frequencies 50 MHz, 100 MHz, and 200 MHz, and log periodic antennas (Section J, Figure 4) at the frequencies 400 MHz and 1000 MHz. The transmitting antenna shall be placed at a distance of 72 inches from the inner shield surface, and the receiving antenna shall be kept at a minimum distance of 2 inches, and a maximum distance of 6 inches, from the outer shield surface.

14.2.6 Each test report shall include measured attenuation values at all specified test locations, frequencies, and field types, and a diagram of the enclosure showing all doors, windows, jack panels, penetrations including computer interface connections and cable pass-through ports, filters, electrical service, lighting, ground connections, air vents for self-contained HVAC or connections for building HVAC. This diagram does not have to be to scale.

14.3 Testing Laboratories: Same as section 13.5.

14.4 Test Report Requirements: Same as section 13.6.

Table 4A
Minimum values of Electromagnetic Shielding
Attenuation (SA), in dB, at Doors, Windows,
Jack Panels, Computer Interface Connection Panels,
Cable Pass-Through Ports, and Penetrations
for Lighting and Ventilation Systems

Type of Field	Frequency	SE
Magnetic	1 kHz	3
	10 kHz	5
	100 kHz	9
	500 kHz	20
	1 MHz	15
Electric	1 kHz*	45
	10 kHz*	50
	100 kHz*	50
	500 kHz	50
	1 MHz	50
	10 MHz	50
	18 MHz	32
Plane Wave	50 MHz	45
	100 MHz	7
	200 MHz	15
	400 MHz	5
	1000 MHz	6

*For the quality assurance inspection testing of section 17.5, electric field measurements of SA are not required at frequencies 1 kHz, 10 kHz, and 100 kHz; measurements at the remaining frequencies for electric field measurement, and measurements at all indicated frequencies for other field types, are required. For the test report requirements of sections 13.6 and 14.2.6, measurements shall be performed for all field types at all indicated frequencies.

Table 4B
Minimum Values of Electromagnetic
Shielding Attenuation (SA), in dB,
At All Positions Other Than
Those of Table 4A.

Type of Field	Frequency	SE
Magnetic	1 kHz	10
	10 kHz	20
	100 kHz	30
	500 kHz	37
	1 MHz	40
Electric	1 kHz*	45
	10 kHz*	50
	100 kHz*	50
	500 kHz	50
	1 MHz	50
	10 MHz	50
	18 MHz	42
Plane Wave	50 MHz	45
	100 MHz	7
	200 MHz	25
	400 MHz	5
	1000 MHz	10

*For the quality assurance inspection testing of section 17.5, electric field measurements of SA are not required at frequencies 1 kHz, and 10 kHz, and 100 kHz; measurements at the remaining frequencies for electric field measurement, and measurements at all indicated frequencies for other field types, are required. For the test report requirements of sections 13.6 and 14.2.6, measurements shall be performed for all field types at all indicated frequencies.

15. FIRE RATING REQUIREMENTS

15.1 Fire Protection Requirements: As a minimum, audiometric booths shall be constructed of fire rated components, as specified below, to obviate the need for a fire sprinkler system and the associated roof panel penetration necessary for installation.

15.1.1 Wall and ceiling panels and liner materials used in ventilation system, silencers and fan housings, tested in accordance with ASTM E84-87, shall not exceed a rating of 25 for Flame Spread and 50 Smoke Developed.

15.1.2 Carpeting shall meet the requirements of the Federal Flammability Standard FF-I-70, Standard for the Surface Flammability of Concepts and Rugs (Pill Test).

15.1.3 Wall and ceiling panels, tested in accordance with ASTM E119-88 (or equivalent industry standard test method), shall be rated for a minimum of 60 minutes. Test data for both solid and perforated surfaces exposed to fire shall be provided.

15.1.4 Door assemblies, tested in accordance with ASTM E152-81 (or equivalent industry standard test method) shall be rated for a minimum of 45 minutes.

15.1.5 Windows installed in fire-rated wall assemblies, tested in accordance with NFPA 257, Standard for Fire Tests of Window Assemblies (or equivalent industry test method), shall be rated for a minimum of 45 minutes.

15.1.6 For double wall examination booths (not suites), windows installed in fire-rated wall assemblies shall be of wired safely glass or shall be glazed with a material that has been tested in accordance with NFPA 257, Standard for Fire Test of Window Assemblies (or equivalent industry test method). Glazing material shall be installed in a metal frame in accordance with manufacturer's standard window framing details.

15.1.7 Testing Laboratories: Same as section 13.5.

15.1.8 Test Report Requirements: Same as section 13.6.

16.1 Installation Requirements: The contractor shall be factory trained on proper booth installation techniques and shall install audiometric booths and all specified components in VA facility.

16.2 Installation Scope: Contractor shall completely assemble audiometric booths and all associated components which are provided by the manufacturer. Outlets, plug strips, light fixtures, and all other electrical components internal to the booth shall be installed and booth wiring shall be connected to the main junction box connection point. HVAC silencers shall be installed on the audiometric booth walls or roof. Final connection of HVAC services, main electrical power, thermostats, and any other building services is the responsibility of the Government.

16.3 Equipment Manual:

16.3.1 The contractor shall furnish, with each booth, two copies of the equipment manual containing installation, operation, and maintenance instructions; a block diagram showing wiring between related pieces of equipment which make up the complete system; and a parts data section.

16.3.2 The parts data section shall include a list of parts and an illustration of all replaceable parts with replacement instructions. "Replacement part" is defined as a part or component thereof that can be removed or exchanged for a like item and restored to its original position without breaking welds or requiring a special operation.

16.3.3 The parts list shall identify the contractor's part number. The parts illustrated shall have an identifying number or name for cross reference to parts list.

16.3.4 The manual shall include a wiring diagram including ground connections with all major components identified by name.

17. QUALITY ASSURANCE

17.1 Quality Assurance Inspection: Upon delivery of materials, VA may conduct the following pre-installation and post-installation inspections. Should the audiometric booth fail to meet any of the requirements of this specification, contractor shall replace or repair the defective components.

17.2 Inspection of Material Prior to Installation: Upon delivery of the audiometric booths, VA may inspect the panels and materials to be used to construct the booths. Individual panels and enclosure components may be visually inspected to ensure that they are identical to the physical description provided on the test reports submitted by the contractor. In the event that there are substantial deviations between the actual construction of the materials utilized to construct the enclosure and the physical description of the components on the contractor's test reports, the non-complying materials may be rejected. Individual panels may be weighed and panels that weigh more than 10% less than the panel weights indicated on contractor's test report may be rejected.

17.3 Inspection After Completion of Installation: Upon completion of installation, VA shall conduct inspections to ensure that:

17.3.1 Audiometric booths are installed such that the floors are level and the walls are plumb.

17.3.2 The audiometric booth finish has proper paint coverage and no dents or scratches. Any finish defects shall be repaired by the contractor.

17.3.3 Audiometric booth doors are properly aligned and swing freely without binding other than as necessary for proper sealing.

17.3.4 All electrical components and jack panels operate properly.

17.4 Compliance with Ambient Noise Level and Noise Reduction Requirements: Prior to acceptance and upon completion of installation, connection of building services, and with all

electrical, lighting, and HVAC systems in operation, VA will conduct ambient noise level measurements at the typical patient location in the completed enclosure to ensure compliance with the maximum ambient sound pressure levels permitted by ANSI S3.1-1991 (revised to ANSI S3.1-1999 [R2008]). Measurements of enclosure noise reduction will be made in accordance with ASTM E336-90 to ensure compliance with requirements of section 13.2. Results of these noise reduction measurements made in completed enclosures shall be within 6 dB of the specified laboratory noise reduction figures in section 13.2.

17.5 Compliance with Electromagnetic Shielding Attenuation Requirements: Prior to acceptance and upon completion of installation, connection of building services, and with all electrical, lighting, and HVAC systems in operation (but without audiometric equipment connected), VA will perform measurements of EM-shielding attenuation in accordance with the acceptance test procedures of NSA 65-6, 1964, with additions, exceptions, and clarifications described in section 14.2, to the extent permitted by clearances around the booth and the ambient EM noise level.

17.6 If the audiometric booth fails to meet the requirements of section

17.4 and 17.5 (or special requirements specified in the attachment), the contractor shall correct the deficiencies in the audiometric booth and retest the booth until it meets all requirements of this specification. All costs associated with testing and repair of the audiometric booth shall be borne by the contractor.

Section J

REFERENCE DOCUMENTS

The following documents, of the issues in effect on the date of this solicitation, form a part of this specification to the extent applicable and to the extent specified herein:

- a. American Society for Testing and Materials standards numbered:
- b. ASTM E596-90 Laboratory Measurement of the Noise Reduction of Sound-Isolating Enclosures.
- c. ASTM C423-90a Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
- d. ASTM E90-90 Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
- e. ASTM E413-87 Determination of Sound Transmission Class (also NIC)
- f. ASTM E84-87 Test Method for Surface Burning Characteristics of Building Materials (or equivalent UL or NITA test standards).

- g. ASTM E119-88 Fire Tests of Building Construction and Materials (or equivalent UL or NFPA test standards)
- h. ASTM E152-81 Fire Tests of Door Assemblies (or equivalent UL or NFPA test standards)
- i. ASTM E336-90 Standard Test Method for Measurement of Airborne Sound Insulation in Buildings.
- j. American National Standards Institute standards numbered:
- k. ANSI S3.1-1991 Criteria for Permissible Ambient Noise during Audiometric Testing. Revised to ANSI S3.1-1999 [R2008].
- l. ANSI S3.6-1989 Specifications for Audiometers. Revised to ANSI S3.6-2004.
- m. Federal Specification DDD-C-95, Carpets and rugs, wool, nylon, acrylic, modacrylic.
- n. Federal Flammability Standard FF-1-70, Standard for the Surface Flammability of Carpets and Rugs (Pill Test).
- o. National Electric Code (NEC) Article 545 on Manufactured Buildings.
- p. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Guide Data Book, 1982, Chapter 3, Systems and Equipment Duct Manual.
- q. American Concrete Institute Standard Tolerances for Concrete Construction and Materials, Standard, ACI 117-81.
- r. IEEE Std. 299-1991, IEEE Standard for Measuring the Effectiveness of Electromagnetic Shielding Enclosures.
- s. Specification NSA No. 65-6, 30 October 1964, National Security Agency Specification for RF Shielded for Communications Equipment: General Specification.
- t. NFPA 257, 1990, Standard for Fire Tests of Window Assemblies (or equivalent industry test method).

**ATTACHMENT ADDITIONAL SPECIFICATION REQUIREMENTS FOR
AUDIOMETRIC BOOTHS**

Booth Number _

This form is to be utilized to provide project specific requirements in the procurement of AUDIOMETRIC BOOTHS and should be used in conjunction with VA Specification X1438b.

- 1. Enclosure size (Spec. Ref. 2)

- a. Configuration (Provide sketch of project site area and audiometric booth)
Double Wall Examination Room Single Wall Control/Double Wall Exam Suite Double Wall Control/Double Wall Exam Suite
- b. Exam Room Dimensions: Inside (WxLxHt): ____ Wx ____ Lx ____ H Outside (WxLxHt): ____ Wx ____ Lx ____ H
- c. Control Room Dimensions (if applicable): Inside (WxLxHt): ____ Wx ____ Lx ____ H Outside (WxLxHt): ____ Wx ____ Lx ____ H
- d. If this booth is in a common outer shell, specify which other Booth Numbers are in this shell:

- e. If booths are to be installed in a pit, please specify its overall size: ____ Width X ____ Length X ____ Depth

2. Pits.(Spec. Ref. 4)

- a. Standard pit depth? ____ (Y or N); If no, specify depth required:
- b. If pits are not feasible, specify: raised floors ____ ramps ____

3. Vibration Isolation System (Spec. Ref. 4)

- a. Standard system required? ____ (Y or N); If no, specify additional requirements:

4. Doors (Spec. Ref. 6)

- a. Configuration: (indicate swing and location on your attached sketch) For Double Wall Booths: Inswing/Outswing ____ Piggyback ____ Tandem Outswing ____ Pass Thru Door ____
- b. Standard Size? ____ (Y or N); If no, please provide the following information: For All Booths (CO= clear opening): Exam CO ____ W x ____ H; Control CO ____ W x ____ H

Pass Thru CO (if applicable) ____ W x ____ H

- c. Indicate any optional hardware requirements:
- d. For any additional doors or special door requirements, please specify:
5. Windows (Spec. Ref. 7)
- a. Standard number and size? ____ (Y or N); If no, please provide the following additional information:

Width	Height	Location	Type or Features
-------	--------	----------	------------------

____	____	Standard Exam Room Viewing Window	_____
------	------	-----------------------------------	-------

_____	_____	Additional Window #1	_____
_____	_____	Additional Window #2	_____
_____	_____	Exam Door(s)	_____
_____	_____	Control Door(s)	_____

b. For additional windows or for special window construction or performance requirements, please specify (Spec. Ref. 1):

6. Ventilation Type (Spec. Ref. 8) Fan forced self-contained? _____ -OR- Direct Coupled to Building Systems? _____; if so, thermostat in booth?

7. Electrical (Spec. Ref. 9)

a. Standard electrical outlet/components? _____ (Y or N) If no, please specify any additional electrical outlet/components desired or other electrical requirements:

b. Electrical grounding arrangements adequate? _____ (Y or N) Please specify grounding requirements, in particular, ground connection(s) for booth(s) to meet EM Shielding requirements:

8. Lighting (Spec. Ref. 10)

a. Standard Incandescent Lighting required? _____ (Y or N)

b. Standard Fluorescent Lighting required? _____ (Y or N) If additional lighting levels, fixtures, switches, dimmers, etc. are required, please specify:

9. Jack Panels (Spec. Ref. 11)

a. Standard jack panel connectors required? _____ (Y or N) If no, specify additional or special panel connectors including computer interface connectors:

b. If computer interface connector is specified. is a means to connect computerized test equipment to facility computer network required in control room? _____ (Y or N)

c. Cable pass-through port from control to examination room required? _____ (Y or N)

10. Finish (Spec. Ref. 12)

a. Standard Paint Finishes required? _____ (Y or N) If yes, specify paint color: Outside _____ Inside _____ If no, please specify other finish requirements such as vinyl covering:

b. Standard carpeting required for inner floors? _____ (Y or N) If yes, specify color: _____ If no, specify other floor covering: _____

c. Closure panels between booth and facility ceilings required? ____ (Y or N) If yes, specify type of material: _____

11. Acoustical performance (Ref. 13)

Standard performance required? __ (Y or N) If no, specify additional requirements based upon expected ambient noise levels at site and usage of booth:

12. EM SA (Ref. 14) Standard EM SA required? ____ (Y or N) If no, specify additional requirements based upon potential sources of EMI and usage of booth:

Shielded control rooms required? ____ (Y or N) If yes, specify number of control rooms:

**TEST SET-UP AND EQUIPMENT FOR EM SHIELDING ATTENUATION
MEASUREMENTS**

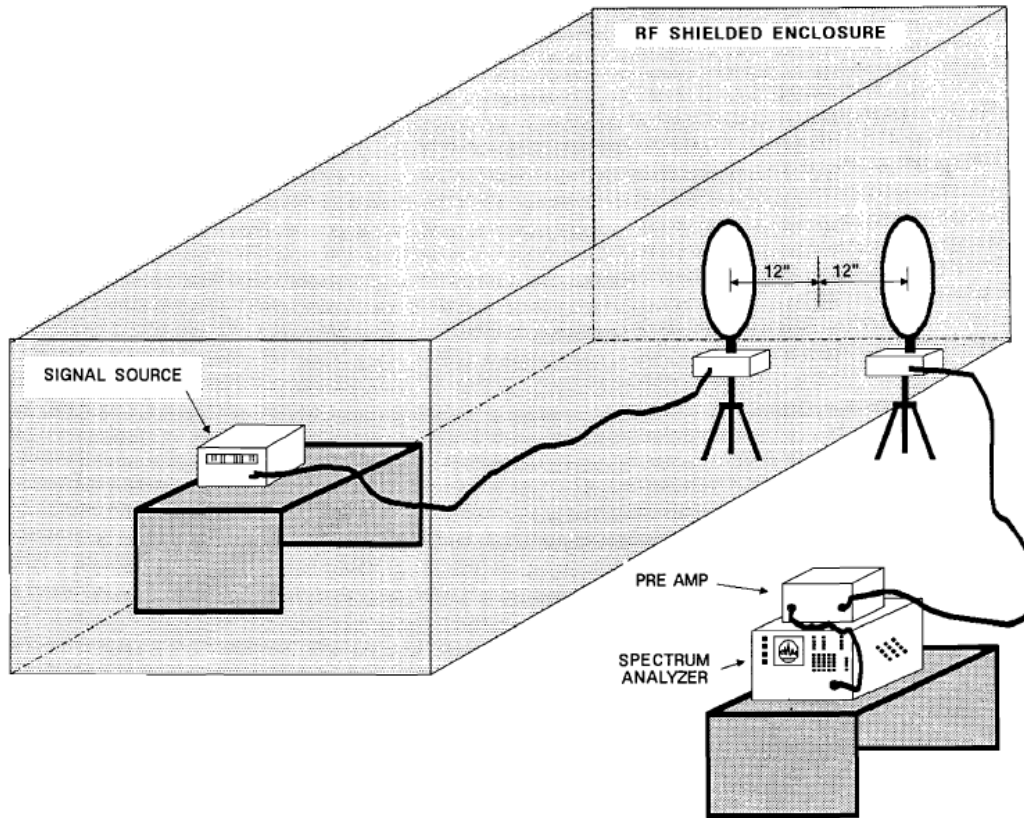


FIGURE 1: TEST SET UP FOR COAXIAL MAGNETIC FIELD MEASUREMENTS

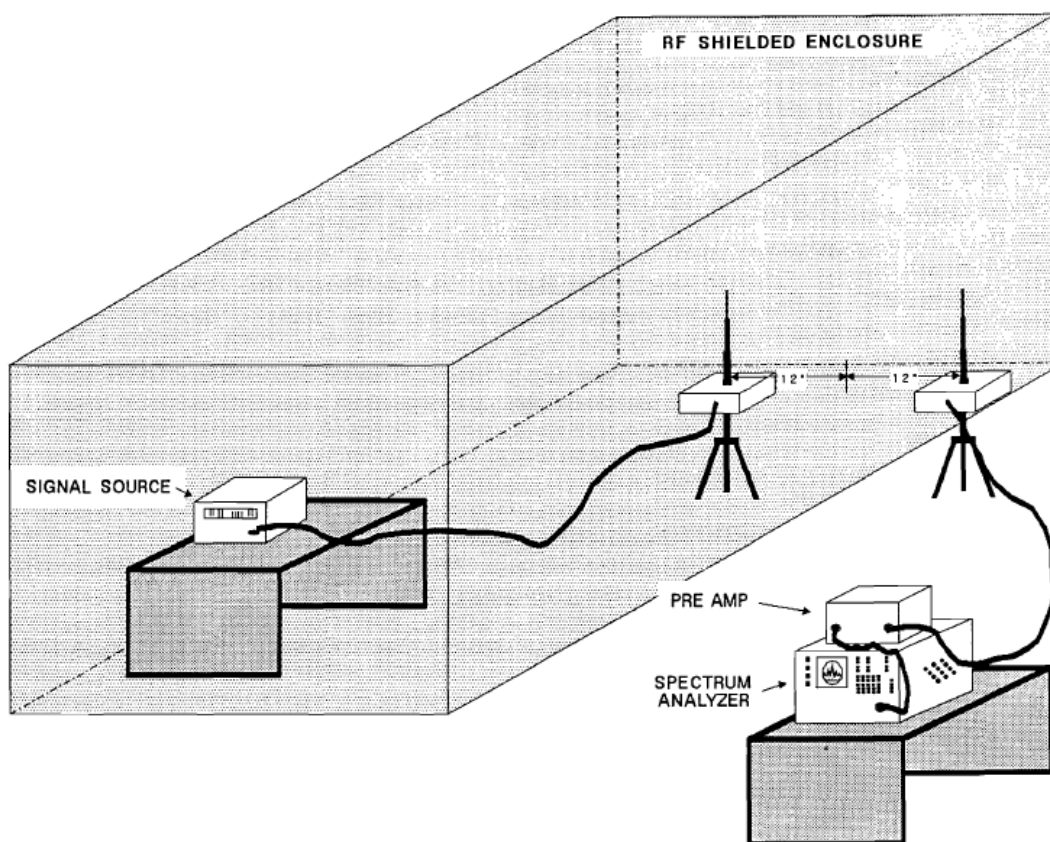


FIGURE 2: TEST SET UP FOR ELECTRIC FIELD

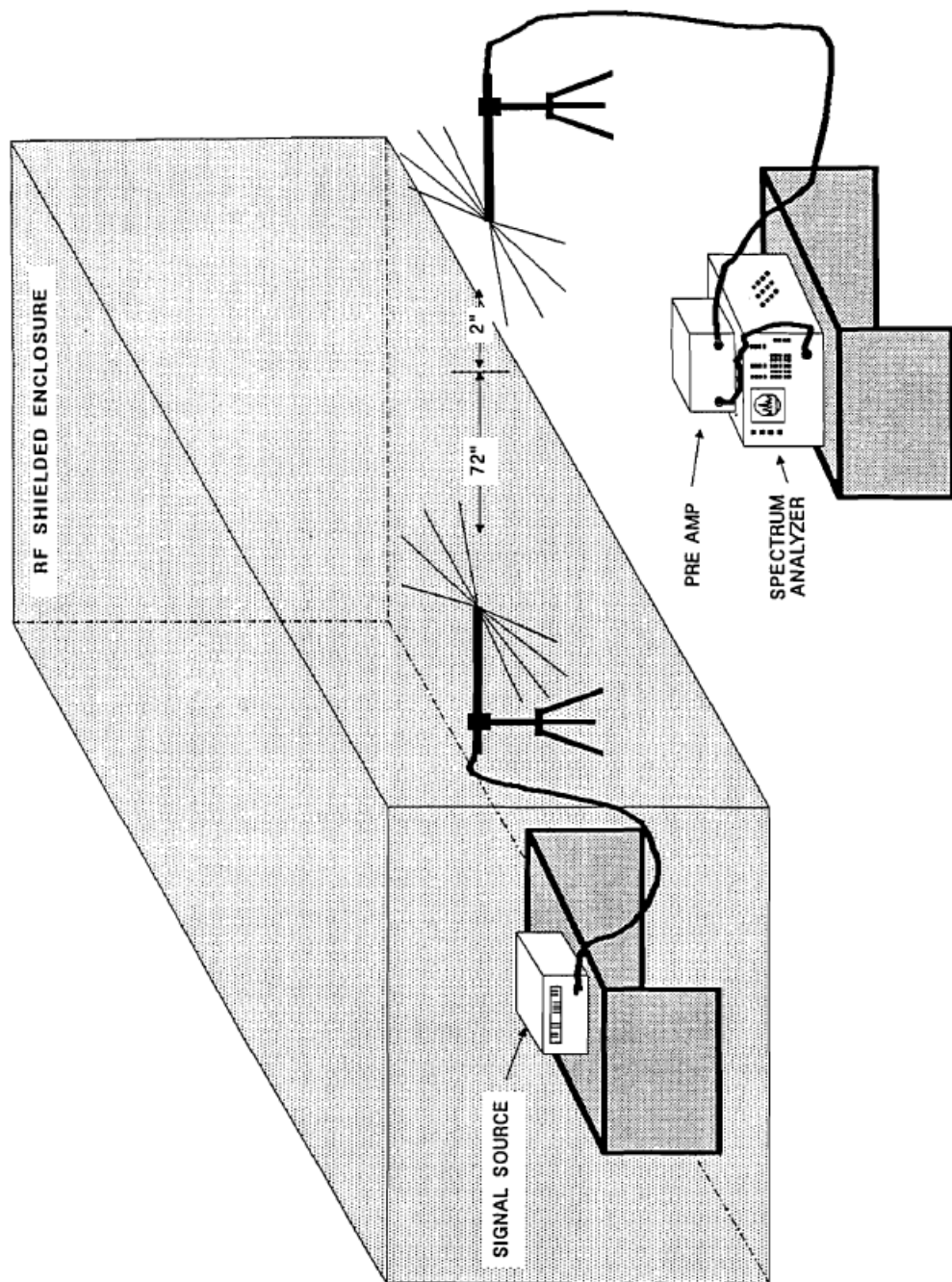


FIGURE 3 : TEST SET UP FOR PLANEWAVE (50 MHz-200 MHz)

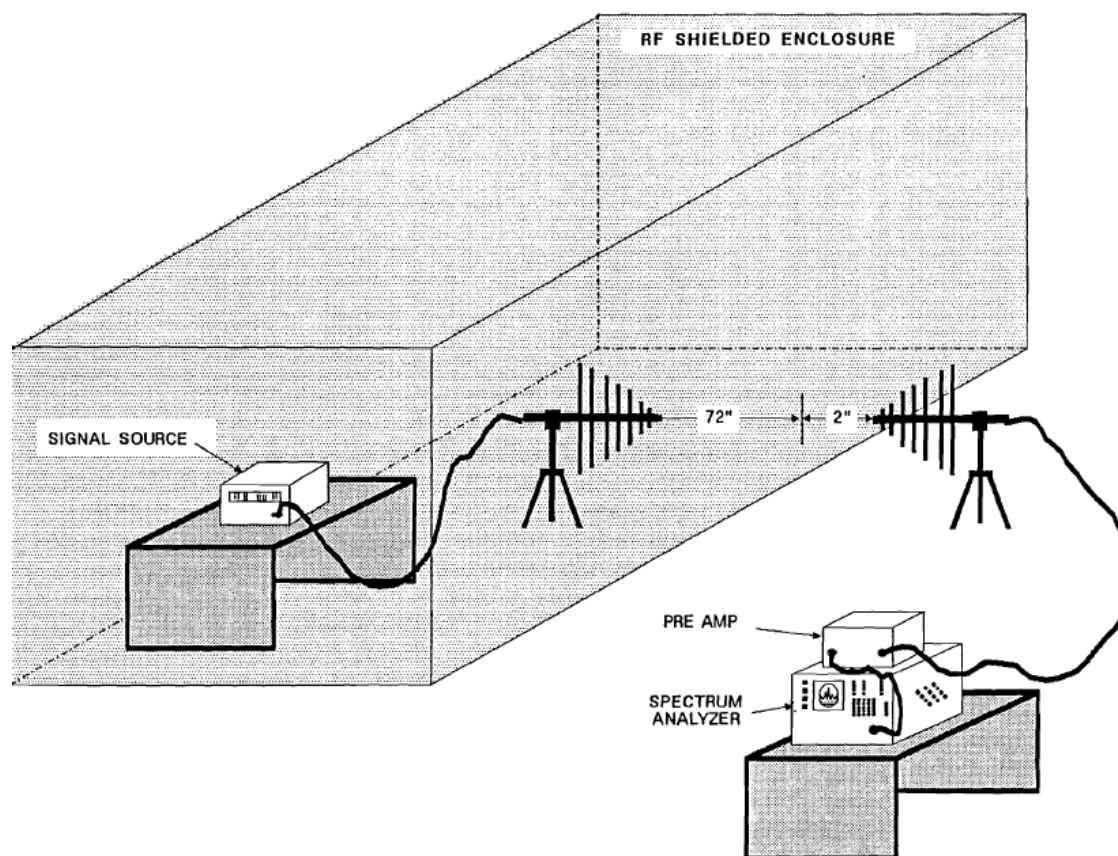


FIGURE 4: TEST SET UP FOR PLANEWAVE (400 MHz-1000 MHz)

EQUIPMENT USED FOR TESTING SHALL CONSIST OF THE FOLLOWING. OR OTHER EQUIVALENT:*

FIELD	FREQUENCY RANGE	MANUFACTURER & DESCRIPTION	MODEL
ANTENNAS: (X) for Transmitter. (R) for Receiver			
Magnetic passive loop	1 kHz-1 MHz	(X) Electro-Mechanics Co.	6509
Magnetic active loop	1 kHz-1 MHz	(R) Electro-Mechanics Co.	6507
Electric	1 kHz	(X) Accel coil whip	140001
Electric 41" passive whip	10 kHz-18 MHz	(X) Electro-Mechanics Co.	3303
Electric 41" active whip	1 kHz-18 MHz	(R) Electro-Mechanics Co.	3301B
Plane Wave biconical	50 MHz-200 MHz	(X,R) Electro-Mechanics Co.	3104
Plane Wave	400 MHz-1000 MHz	(X,R) AH Systems	SAS200510

log periodic

RECEIVERS

All	1 kHz-1000 MHz	Hewlett Packard spectrum analyzer	8562A
-----	----------------	-----------------------------------	-------

SIGNAL SOURCES

Electric, magnetic	1 kHz	Wavetek signal generator	188
-----------------------	-------	--------------------------	-----

All	10 kHz-1000 MHz	Marconi single generator	2022
-----	-----------------	--------------------------	------

SIGNAL MODIFIERS

Plane Wave	50 MHz-1000 MHz	Electro-Metrics preamplifier	BPA-1000
------------	-----------------	------------------------------	----------

*Instruments are identified only in order to specify adequately apparatus and procedures. The presence of an instrument on this list should not be interpreted to imply that this instrument is the best or the only device available and suitable for its intended purpose.

Section L

1. The bidder shall submit to the contracting officer, with the bid, the following certified test reports and data:

1.1 Laboratory Noise Reduction test data measured in accordance with ASTM E596-90 which meet or exceed the requirements of Section C13.2. Test data shall be no more than five years old as of the date of the bid. Noise reduction test report shall include complete documentation of the enclosure components and their weights.

1.2 Laboratory Sound Absorption test data measured in accordance with ASTM C423-90a which meet or exceed the requirement of Section C13.4. Test data shall be no more than five years old as of the date of the bid. Sound absorption test report shall indicate that the weight per square foot of the sample tested equals that of the panels used in the noise reduction tests' in this section.

1.3 Laboratory Sound Transmission Loss test data, measured in accordance with ASTM E90-90, on the audiometric booth door and frame assembly, which meet or exceed the door acoustical requirements of Section C13.3.

1.4 EM (Electromagnetic field) shielding test data, measured as described in Section C14.2 on the audiometric booth that meets or exceeds the requirements of Section C14.

1.5 Fire test data measured in accordance ASTM E84-87 which meet or exceed the requirements of Section C15.

1.6 Fire test data on enclosure panels measured in accordance with ASTM E119-88 that meet or exceed the requirements of Section C.15.1.3.

1.7 Fire test data on enclosure doors measured in accordance with ASTM E152-81 that meet or exceed the requirements of Section C.15.1.4.

1.8 Laboratory test data on all electrical components such as switches, jack panels, light fixtures, receptacles, conduit junction boxes, etc. indicating all are UL or equivalent laboratory approved.

1.9 Written certification that all enclosure components will be constructed in accordance with the construction methods utilized in each of the above tests.

1.10 Test Report Requirements: All laboratory test data shall have been obtained by conducting tests in accordance with the specified procedures and standards. All test data shall have been obtained within the past 5 years, and shall be certified by the bidder as indicative of current production methods. Test reports shall contain complete documentation of the sample's exterior features, salient characteristics and component weights in order to ensure that all test data are based on components of similar construction.

1.11 Written certification that the bidder has had experience with the installation of audiometric booths in clinical settings and that at least 10 such enclosures have been installed during the three years previous to the issuance of this project specification.

1.12 Plan drawings for all audiometric booths to be installed.

2. All test data and reports shall be from either a nationally recognized independent test laboratory, from a laboratory accredited by the NIST, NVLAP (National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program), or from a U.S. government laboratory or consultant. Such consultant shall not be an officer or employee of the contractor.

3. Standards: All standards referenced in this document are listed in the Appendix, Section J.