

CHAPTER 1

THE SPEECH-LANGUAGE PATHOLOGIST IN AUDIOLOGY SERVICES: AN INTERPROFESSIONAL COLLABORATION

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KEY TERMS

Acquired hearing loss

Best practice

Deaf (Capital “D” emphasized)

deaf (Lower case “d” emphasized)

Evidence-based practice (EBP)

Hard of hearing

Interprofessional collaboration

OBJECTIVES

- Understand the requirements of the speech-language pathologist as they relate to audiologic services.
- Review the speech-language pathology scope of practice as it pertains to audiological services and service provision to those with hearing loss.
- Discuss the concept of collaboration and understand its importance.
- Become familiar with terminology related to persons with hearing loss.

Introduction

Speech-language pathology is an exciting profession. *U.S. News & World Report's* list of “Best Jobs” consistently ranks speech-language pathology amongst its top picks based on median salary, unemployment rate, 10-year growth volume (new jobs), 10-year growth percentage (expansion of the field/demand for workers), future job prospects (those seeking employment finding suitable employment), stress level, and work-life balance (U.S. News Staff, 2021). The field encompasses science, technology, and the humanities. It involves patient care from diagnosis to rehabilitation, working with all ages from infants to geriatrics. The speech-language pathologist (SLP) may find him- or herself working in a wide range of settings, including medical, educational, rehabilitative, and industry. Perhaps one of the most exciting aspects of a career in speech-language pathology is the flexibility to work in such a wide range of settings and with an even wider range of individuals and disabilities without ever having to change your field of practice. Throughout this rewarding career, it is quite likely that the SLP will eventually have the opportunity to work with an individual who is hard of hearing, Deaf (Capital “D” emphasized), or deaf (lowercase “d” emphasized). It is perhaps even more likely that the SLP will work with multiply impaired individuals with a wide variety of comorbidities, one of which may be hearing loss.

Working with such individuals requires that SLPs have a secure understanding of their own scope of practice as well as what it means to practice in an interprofessional, collaborative manner. Other elements critical to successful practice and interventions include best practice guidelines, evidence-based practice principles, and the measurement of outcomes to their intervention/s.

Interprofessional Education/Interprofessional Practices

The literature contains a variety of definitions related to **interprofessional collaboration**; some of which

can be extensive and complicated. However, at the heart of interprofessional education (IPE) and interprofessional practices (IPP) is the concept of collaboration, which “. . . conveys the idea of sharing and implies collective action oriented toward a common goal, in a spirit of harmony and trust, particularly in the context of health professionals” (D'Amour et al., 2005). The definition of IPE, as stated by the World Health Organization, “When two or more health professions learn about, from, and with each other to foster effective collaboration and improve the outcomes and quality of care” (World Health Organization, 2010), is not only becoming proficient in our own practices, but striving to learn and understand the professions that surround us. This IPE begins at the undergraduate level of preprofessional training, permeates through the graduate degree program(s), and continues through continuing education and the development of workplace relationships. The result of this interprofessional education directly benefits the patient/client. This expectation of better therapeutic outcomes then becomes IPP. The effects of this collaboration include comprehensive service provision, better outcomes, higher satisfaction on the part of the patient/client, increased job satisfaction on behalf of the professional involved in patient/client care, and time and cost efficiency. See **Table 1.1**.

IPE/IPP has three tenets as summarized by the Institute of Medicine (2013):

1. IPE/IPP is not a replacement for rigorous education specific to each healthcare profession. This indicates that interprofessional identity complements—but does not replace—professional identity.
2. IPE/IPP represents one solution—not all solutions—to the problems of the healthcare system.
3. Experiential and team-based learning are the hallmarks of IPE/IPP (Thibault, 2013).

Successful interaction among communication disorders service providers demonstrates the importance of having this collaborative relationship in the care of a client/patient, and devastating effects may result from its absence. If a child is referred for a

Table 1.1 Core Competencies for Interprofessional Collaborative Practice

Domain #	Domain name	General competency statement
Domain 1	Values/Ethics for IPP	“Work with individuals of other professions to maintain a climate of mutual respect and shared values” (p. 19).
Domain 2	Roles/Responsibilities	“Use the knowledge of one’s own role and those of other professions to appropriately assess and address the health care needs of patients and populations served” (p. 21).
Domain 3	Interprofessional Communication	“Communicate with patients, families, communities, and other health professionals in a responsible and responsible manner that supports a team approach to the maintenance of health and the treatment of disease” (p. 23).
Domain 4	Teams and Teamwork	“Apply relationship-building values and the principles of team dynamics to perform effectively in different roles to plan and deliver patient-/population-centered care that is safe, timely, efficient, effective, and equitable” (p. 25).

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speech-language evaluation because she or he is not speaking clearly and communication/collaboration between the speech-language pathologist and the audiologist is missing, a hearing loss may go undiagnosed. Unfortunately, this can and does happen. It is likely that many professionals who have worked in the field of communication disorders have encountered this scenario. The lack of interprofessional collaboration for this child can result in impaired speech-language development, academic progress, social interactions, vocational choices, and more.

The broader view of this interprofessional collaboration sheds light on the fact that it is not only speech-language pathologists and audiologists whose professional areas are interrelated, but also those of occupational therapists, physical therapists, and recreational therapists (De Vries, 2012). As described by De Vries (2012), the skills required for effective interprofessional teamwork include understanding one’s own and others’ professions, mutual respect, cooperation, communication, coordination, assertiveness, shared responsibility, and autonomy (Banfield & Lackie, 2009; Lidskog, 2007). Although successful collaboration is clearly a complex process, fully understanding one’s own scope of practice is an integral part of this professional partnership.

We emphasize again to the reader the importance of collaborating and working as a team, striving always to improve the quality of patient care. We also strongly encourage clinicians to be cognizant of their professional roles and responsibilities, not only in terms of their own scope of practice and the knowledge and skills acquisition (KASA) standards, but also in terms of their ethical obligations. Patient advocacy and recognizing one’s professional role and its importance for the continuum of patient/client care meets with a new outlook on the provision of 21st century therapeutic intervention services.

Scope of Practice for the Speech-Language Pathologist

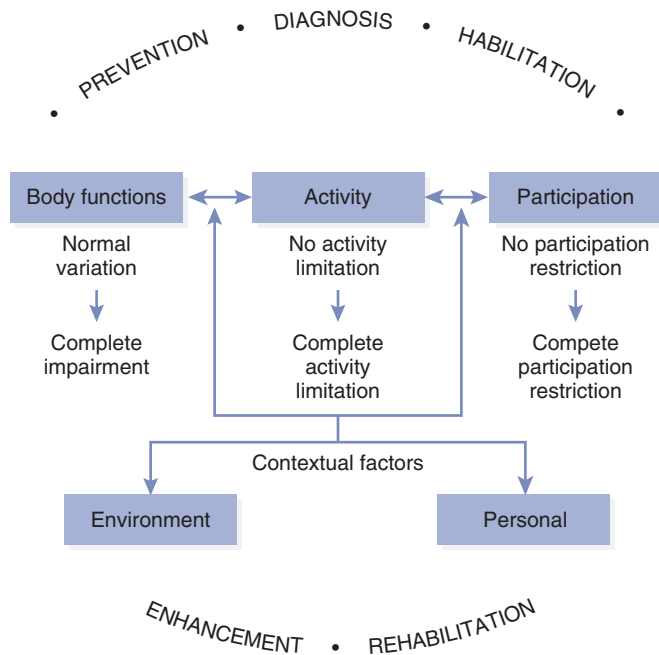
A sound understanding of how to perform a thorough hearing screening, as well as interpret audiometric data, will become an integral part of patient care for the speech-language pathologist. When the SLP’s job responsibilities include either interpreting or performing audiological procedures, the professional is cautioned to fully understand what is and what is not within their scope of practice. This is of paramount

importance when the SLP must manage the needs of a hard of hearing/deaf individual in their care.

In this section we will review the SLP’s scope of practice as it applies to audiology and hearing loss–related disorders. Your responsibilities lie beyond performing a mere air conduction screening. The American Speech-Language-Hearing Association (ASHA)’s SLP service delivery domains prove this. This is defined through the World Health Organization’s International Classification of Functioning, Disability and Health (ICF).

ASHA has embraced the ICF as a whole-person framework for evaluation and intervention when providing treatment. The main elements of the ICF framework are body functions and structures, activity and participation (i.e., engagement in personally relevant settings and circumstances), environmental factors (i.e., physical as well as attitudinal environment), and personal factors (i.e., gender, ethnicity, age). In summation, ASHA

encourages practitioners to no longer just assess and treat the impairment but rather to also examine the many other factors that will play a major role in effective treatment plans. The ICF has shifted the paradigm from just treating the impairment to improving quality of life. As an example, for a school-age child with a hearing impairment, are the parents on board with consistent usage of assistive hearing devices? Does the classroom environment have optimal acoustics and amplification devices? How is the attitude of the other children in the classroom? Do the child’s classmates need education on hearing impairment in order to improve the attitudinal environment? Is the child able to actively participate in sports and clubs, despite the hearing impairment? The most recent release of ASHA’s Scope of Practice in Speech-Language Pathology (2016) embraces these ICF impairment factors as well as contextual factors in quality care of people with hearing impairment.



The following list is a synopsis of the eight SLP service delivery domains from ASHA's Scope of Practice in Speech-Language Pathology (ASHA, 2016, pp. 5–18). These service domains complement the ICF (ASHA, 2016, p. 5).

(1) **Collaboration**

The SLP shares responsibility with other professionals for creating a collaborative culture. This includes joint communication and decision-making using a team approach to patient care. Members of the team include both the patient and his or her family members. The SLP must determine whether his or her knowledge and skill is adequate regarding the breath of needs for the patient or if collaboration is necessary with other professionals to provide comprehensive patient care. Clearly, the SLP should be collaborating with an audiologist on a patient care plan when working with an individual with hearing loss.

(2) **Counseling**

SLPs counsel by providing education, guidance, and support. Individuals, their families, and their caregivers are counseled regarding acceptance, adaptation, and decision-making. This section further defines counseling as the following:

- Empowering the individual to make informed decisions
- Educating the individual and their families
- Providing support
- Promoting self-advocacy
- Discussing and evaluating emotions
- Referring to other professionals for counseling needs outside of the SLP's scope of practice

Clearly, in cases involving individuals with hearing loss, the need for emotional support plays an important role in addressing the psychoemotional and psychosocial impact a hearing loss may have on an individual and his or her family. Counseling in such cases may also involve discussions regarding hearing loss remediation, hearing assistance technology, and educational/programmatic decision-making. These overarching issues only scratch the surface of services a patient and his or her family may need when navigating a newly identified hearing impairment.

(3) **Prevention and Wellness**

The SLP is involved in prevention and wellness activities that are geared toward reducing the incidence of a new disorder or disease, identifying disorders at an early stage, and decreasing the severity or impact disabilities associated with an existing disorder or disease.

The role early intervention plays in the overall clinical outcomes for a child with hearing loss is well documented (Ching, 2015). Considerations regarding the quality of life for an individual with hearing loss and his or her general well-being are addressed in this section of the SLP scope of practice. Prevention of hearing loss and the promotion of services available for the individual with hearing impairment, as well as the community at large, are also the responsibility of the SLP under this section. This includes educating the public at large in schools, workplaces, and communities. Always remember, “May Is Better Hearing and Speech Month” and can be an important conduit to raise public awareness.

(4) **Screening**

The SLP is the expert at screening individuals for possible communication, hearing, and/or feeding and swallowing disorders in a cost-effective manner. This includes planning and conducting hearing screening programs, selecting the appropriate screening instruments, developing the screening procedures, analyzing results, and making referrals.

Specifically mentioned in this section is the role that the SLP plays in the management of disorders, including hearing loss, in the educational realm.

(5) **Assessment**

The SLP has expertise in the differential diagnosis of disorders of communication and swallowing. Competent SLPs can diagnose communication and swallowing disorders but do not differentially diagnose medical conditions. The SLP may find that he or she is evaluating disorders that may include hearing loss as a primary etiology or a comorbid condition. However, this does not authorize an SLP to evaluate or diagnose a hearing impairment. While that evaluation and diagnosis is the role of the audiologist, do not think that you have no role identifying risk factors or interpreting said audiometric results.

(6) **Treatment**

Speech-language services are designed to optimize individuals' ability to communicate and swallow, thereby improving quality of life. SLPs design their treatment according to evidence-based research and best available practice standards. Treatment plans that are designed for individuals with hearing loss are either habilitative or rehabilitative,

depending of the nature of the individual case. Service provision must be both culturally and linguistically appropriate and also sensitive to the communication needs of the individual and his or her family. Again, the collaboration aspect of this portion of the SLP scope of practice holds in high regard the skill set held by an audiologist.

(7) **Modalities, Technology, and Instrumentation**

SLPs use advanced instrumentation and technologies in the evaluation, management, and care of individuals. Specifically expanding on the range of technology and instrumentation listed in this section of the scope of practice, “Some examples. . . not limited to. . .” most certainly should include technology for both evaluation of and remediation for hearing impairment. State-of-the-art hearing screening instruments, hearing aids, hearing assistance technology, and the like are all covered in this section as well. While the selection and fitting of hearing aids is most certainly outside the scope of practice for the SLP, maintenance of hearing aid devices, assistive listening devices, and auditory training systems, as well as a vast array of other hearing assistance technology, does fall within the SLP’s scope of practice.

(8) **Population and Systems**

SLPs have a role in managing populations to improve the overall health, education, and experience of the individuals served. SLPs also have a role in cost containment, including efficient and effective intervention. When working with an individual with hearing loss and his or her family, the SLP must assure that the intervention strategies and therapeutic goals are in alignment with the whole patient, taking into consideration his or her lifestyle and financial circumstances. The SLP must also consider the types of support provided in the classroom for teachers to ensure that the child with hearing loss has full access to the curriculum. Supporting families receiving early intervention services in making educated communication choices for their children with hearing loss is also covered in this section of the scope of practice.

American Speech-Language-Hearing Association. (2016). Scope of practice in speech-language pathology [Scope of Practice]. Available from www.asha.org/policy/.

Speech-Language Pathology Service Delivery Areas

A comprehensive list of areas of practice for the speech-language pathologist is covered in this section. Fluency, speech production, language, cognition, voice, and resonance may all apply when servicing the individual with hearing loss. In as much as these areas are addressed, the scope of practice specifically addresses auditory habilitation and rehabilitation; speech, language, communication, and listening skills impacted by hearing loss and deafness; as well as therapeutic practices for auditory processing.

Domains of Professional Practice

In reviewing the scope of practice for the SLP as it relates to audiology practices, it should now be evident that the knowledge and skills set necessary for the SLP working with individuals with hearing loss is far greater than just knowing how to conduct a hearing screening. Moreover, the responsibility does not end there. This text also elaborates on the responsibilities related to advocacy and outreach,

education, administration, and research; each of these areas requires a solid understanding of the normal and abnormal auditory system, and the role each plays in communication development and abilities. The complete document can be found by going to www.asha.org/policy/SP2016-00343/.

Scope of Practice for the Audiologist

As with the SLP, ASHA maintains the scope of practice for the audiologist. It is wholly important for the SLP to understand the commonalities of these practices as well as their differences. While the audiologist may be viewed as a professional dedicated to the diagnosis of hearing loss, the scope of practice describes a vocation that encompasses many similar practices to those of the SLP.

The “Audiology Service Delivery Areas” section of the scope of practice in audiology delineates those practices for which the audiologist is responsible (ASHA, 2018). Audiologists serve a diverse population and may function in one or more of a variety of activities. The practice of audiology includes the following:

(A) Diagnostics for Hearing, Balance, and Other Related Disorders

Audiologists are responsible for the assessment of hearing, balance, and other related disorders, including tinnitus and auditory processing, across the lifespan that includes the following:

- Administration and interpretation of clinical case history
- Administration and interpretation of behavioral, electroacoustic, and electrophysiologic measures of the peripheral and central auditory, balance, and other related systems
- Administration and interpretation of diagnostic screening that includes measures to detect the presence of hearing, balance, and other related disorders

Additional screening measures of mental health and cognitive impairment should be used to assess, treat, and refer (American Academy of Audiology, 2013; Beck & Clark, 2009; Liet et al., 2014; Shen et al., 2016; Sweetow, 2015; Weinstein, 2017, 2018). This assessment includes measurement and professional interpretation of sensory and motor evoked potentials, electromyography, and other electrodiagnostic tests for purposes of neurophysiologic intraoperative monitoring and cranial nerve assessment. Diagnostic measures should be modified based on patient age and on cognitive and physical abilities of the individuals being assessed. Case findings of dementia, memory, vision, and balance (falling risk) should be used when difficulty in communication or change of behavior is evident (Beck & Clark, 2009; Liet et al., 2014; Shen et al., 2016; Sweetow, 2015; Weinstein, 2017, 2018). Assessment extends beyond diagnostic evaluation and includes informational counseling, interpretation of results, and intervention. Assessment is accomplished using quantitative and qualitative measurements—including standardized testing, observations, and procedures and appropriately calibrated instrumentation—and leads to the diagnosis of abnormal audiologic and/or balance function. Interpretation of test results includes diagnostic statements as to the probable locus of impairment and functional ability within the hearing, balance, and other related systems under assessment. Audiologists collaborate with other professionals and serve on care teams to help reduce the perceived burden of hearing, balance, and other related disorders and maximize quality of life for individuals.

(B) Treatment for Hearing, Balance, and Other Related Disorders

Audiologists provide comprehensive audiologic (re)habilitation services for individuals and their families across the lifespan who are experiencing hearing, balance, or other related disorders (e.g., tinnitus and auditory processing disorder). Intervention encompasses the following:

- Auditory training for sound identification and discrimination
- Cerumen management
- Communication strategies (e.g., environmental manipulation, mode of communication)
- Counseling
- Manual communication
- (Re)habilitation related to auditory disorders
- Self-advocacy for personal needs or systems change
- Speechreading
- Strategies to address other related disorders (tinnitus, misophonia)
- Technology interventions
- Vestibular rehabilitation to include management of benign paroxysmal positional vertigo as well as peripheral and/or central vestibular disorders

In this role, audiologists

- design, implement, and document delivery of service in accordance with best available practice;
- screen for possible cognitive disorders;
- case-finding for dementia;
- provide culturally and linguistically appropriate services;
- integrate the highest quality available research evidence with practitioner expertise as well as with individual preference and values in establishing treatment goals;
- utilize treatment data to determine effectiveness of services and guide decisions;
- deliver the appropriate frequency and intensity of treatment utilizing best available practice;
- engage in treatment activities that are within the scope of the professional's competence;

(continues)

- collaborate with other professionals in the delivery of services to ensure the highest quality of interventions.

As part of the comprehensive audiologic (re)habilitation program, audiologists evaluate, select, fit, verify, validate, and monitor the performance of a variety of technologies interventions for hearing, balance, and other related disorders. Audiologists provide individual counseling and public education about the benefits and/or limitations of various different classes of devices. Treatment utilizing technology interventions include but are not limited to other emerging technologies:

- Auditory brainstem implants (ABIs)
- Assistive listening devices
- Balance-related devices
- Classroom audio distribution systems
- Cochlear implants
- Custom ear impressions and molds for hearing devices, hearing protection, in-ear monitors, swim plugs, communication devices, stenosis stents, and so forth
- Hearing aids
- Hearing assistive technology
- Hearing protection
- Large-area amplification systems
- Middle ear implants
- Over-the-counter (OTC) hearing aids
- Osseointegrated devices (OIDs), bone-anchored devices, and bone conduction devices
- Personal sound amplification products (PSAPs)
- Remote microphone systems
- Tinnitus devices (both stand-alone and integrated with hearing aids)

Treatment for children also includes developmental and educational interventions such as the following:

- Participation in the development and implementation of an IEP/IFSP for school-age children or implementation of an IFSP for children birth to 36 months of age
- Participation in the development and implementation of a 504 plan
- Measurement of noise levels in educational institutions and recommendations for noise reduction modification

(C) Early Hearing Detection and Intervention (EHDI)

Audiologists provide screening, assessment, and treatment services for infants and young children with hearing-related disorders and their families. Services include the following:

- Apply Joint Committee on Infant Hearing (JCIH) protocols for early detection and intervention of infants and children with hearing loss (American Academy of Pediatrics, Joint Committee on Infant Hearing, 2007).
- Establish, manage, and/or review programs following the EHDI protocol.
- Provide training and supervision to support personnel.
- Monitor the program's outcome measures for quality assurance.
- Perform audiological diagnostics to confirm or rule out the presence of a hearing loss.
- Provide early intervention treatment for hearing loss to enhance communication and to improve cognitive and social skills.
- Upon diagnosis of hearing loss, ensure that the child and family are enrolled in an appropriate early intervention program.
- Provide comprehensive information about family support, training, and communication options.
- Provide education to community/hospital personnel.
- Collaborate with other professionals and with parent groups.

(D) Educational Audiology

Audiologists in educational settings provide a full spectrum of hearing services to support academic and social achievement for school-age children, adolescents, young adults, and their families with hearing and related difficulties. Services include the following:

- Perform assessments and interpret the educational implications of the student's auditory needs. This also includes assessing and making appropriate recommendations as an advocate on behalf of students, ensuring least restrictive environments.
- Collect data from classroom assessments and from observations of students in various environments, and assess the impact of audiologic interventions on academic and social performance.
- Collect data on classroom acoustics, and assess the impact on auditory perception.
- Ensure IPP with members of the school multidisciplinary team who facilitate listening, learning, and communication.
- Collaborate with private sector/community-based audiologists and other professionals relative to the student's educational needs.
- Provide instructional training for educators and staff for the development of skills needed in servicing students with hearing difficulties, which includes providing evidence and recommending support services and resources.
- Provide (re)habilitative activities in collaboration with classroom teachers and other support personnel.
- Monitor personal hearing instruments.
- Recommend, fit, and manage hearing assistance technology.
- Counsel children to promote personal responsibility, self-advocacy, and social awareness.
- Counsel parents on management options, and provide resource information.
- Assist with transitions between academic and vocational settings.
- Manage school programs for the preservation of hearing and the prevention of hearing loss.
- Manage and implement hearing screening programs.

(E) Hearing Conservation and Preservation

The terms *hearing conservation* and *hearing preservation* are often used interchangeably. Both terms focus on preventing noise-induced hearing loss, whether from occupational or recreational sources. Hearing conservation programs are most often, although not exclusively, associated with occupational noise exposure and with U.S. Occupational Safety and Health Administration (OSHA) regulations (OSHA, 2002). In addition, hearing conservation programs have additional elements not found in hearing preservation programs: engineering controls for reducing environmental noise levels, administrative controls for monitoring hearing sensitivity levels, mandated use of hearing protection devices when needed, employee training about noise, the potential synergistic effects of chemical exposure combined with hazardous noise, and requirements for communication about hazards (e.g., warning signs, posting of signs in required hearing protection environments). Hearing preservation programs focus on nonoccupational settings and are most often intended to prevent hearing loss from occurring in individuals who enter the program with normal hearing sensitivity. Examples of hearing preservation programs may include (a) monitoring of auditory function for patients receiving chemotherapy or radiation therapy of the head or neck (University Health Network, 2018) or (b) providing education to students and young adults on the effects of recreational noise and methods to prevent hearing loss (see the Save Your Hearing Foundation at www.earpeacefoundation.org). Audiologists are uniquely qualified through education and training to design, establish, implement, and supervise hearing conservation programs for individuals of all ages in schools, in industry, and for the general public (Lipscomb, 1988). Audiologists who engage in occupational hearing conservation must monitor current OSHA regulations (OSHA, 2002) regarding the impact of noise levels on hearing sensitivity. This extends to the distribution of, and instructions related to the use of, hearing protection devices. Audiologists test hearing levels, determine functional hearing ability, measure noise levels, and assess the risk of incurring hearing loss from noise exposure from any source, including nonoccupational and recreational noise (Franks et al., 1996a, 1996b, 1996c). Audiologists implement and manage all aspects of hearing conservation activities—including education, testing, and the determination of program effectiveness—and serve as the supervisor for OSHA and other U.S. government-mandated hearing conservation programs (Suter, 2003). Audiologists educate the public and other professionals on how to recognize hazardous noise, ways of preventing noise-induced hearing loss, and the risks associated with reduced audibility when exposed to high-level sound.

(F) Telehealth

Telehealth for audiology is an alternative method of service delivery that encompasses both diagnostics and intervention services. Diagnostic services are provided using either synchronous or asynchronous protocols (i.e., store and forward, whereby data are collected, stored within a computer, and forwarded at a later time). Audiologists provide services using an evidence-based standard of care (American Telemedicine Association, 2017). When practicing via telehealth, audiologists provide care consistent with jurisdictional regulatory, licensing, credentialing and privileging, malpractice and insurance laws, and rules for their profession in both the jurisdiction in which they are practicing as well as the jurisdiction in which the patient is receiving care. The audiologists providing the service shall ensure compliance as

required by appropriate regulatory and accrediting agencies (American Telemedicine Association, 2017). Areas in which telehealth is a viable option include the following:

- Aural/auditory(re)habilitation
- Auditory evoked potentials
- Hearing aid and cochlear implant fitting/programming
- Hearing screening
- Otoacoustic emissions
- Otoscopy
- Pure-tone audiometry and speech recognition in noise
- Supervision of electrophysiology services (e.g., intraoperative monitoring and diagnostic examinations)
- Supervision of vestibular services (e.g., vestibular diagnostic examinations)
- Tympanometry
- Vestibular rehabilitation

(G) Counseling

Audiologists counsel by providing information, education, guidance, and support to individuals and their families. Counseling includes discussion of assessment results and treatment options. Counseling facilitates decision-making regarding intervention, management, educational environment, and mode of communication. The role of the audiologist in the counseling process includes interactions related to emotions, thoughts, feelings, and behaviors that result from living with hearing, balance, and other related disorders. Audiologists engage in the following activities when counseling individuals and their families:

- Providing informational counseling regarding interpretation of assessment outcomes and treatment options
- Empowering individuals and their families to make informed decisions related to their plan of care
- Educating the individual, the family, and relevant community members
- Providing support and/or access to peer-to-peer groups for individuals and their families
- Providing individuals and their families with skills that enable them to become self-advocates
- Providing adjustment counseling related to the psychosocial impact on the individual
- Referring individuals to other professionals when counseling needs fall outside those related to auditory, balance, and other related disorders.

American Speech-Language-Hearing Association. (2018). *Scope of Practice in Audiology* [Scope of Practice]. Available from www.asha.org/policy

Aural (Re)habilitation

After reviewing the scope of practice in both fields, the largest overlap with our sister professions lies in providing services to those individuals with hearing loss. The term *aural rehabilitation* should be used with caution because it actually refers to the service provision to two distinctly different people groups. Correctly defined, aural habilitation refers to the delivery of services to newborns, infants, and children born with hearing loss. Congenital hearing loss—that with which a child is born—requires intensive therapeutic services by the SLP and a close relationship with the audiologist providing listening

technology. Establishing speech and language skills becomes the primary focal point of collaborative service provision.

Conversely, aural rehabilitation refers to the delivery of services to those individuals with acquired hearing loss. **Acquired hearing loss** occurs in individuals who are born with normal hearing sensitivity and through illness, injury, or genetics develop a hearing impairment after speech and language skills are established. In this scenario, the collaboration between the SLP and the audiologist likewise should not be ignored as a primary relationship for the success of therapeutic outcomes (Montano, 2014).

Practice Models

Interprofessional collaboration, not only between the SLP and audiologist, but other medical professionals, allied health colleagues, school personnel and the like, are the key to successful patient outcomes. Whether working in an acute hospital care facility, long-term care facility, school or privately, the practice of speech-language pathology will be guided by federal laws, state licensure laws, as well as local regulations and clinic/school policies and procedures. At the root are two distinctly different practice models: the medical model and the educational model. Each follows its own set of procedures and guidelines for the care of a patient/client/student, and while each is intended to serve the best interest of the individual’s needs, these models vary significantly, and many times SLPs may find themselves caught in the middle between the two. For example, a primary care physician may make recommendations for services within the school setting, or school personnel may recommend

specific medical evaluation(s) aimed at a diagnosis to drive the provision of special education when a “Referral to Specialist” from a primary care provider is required by the patient/client’s insurance company for services to be rendered. The following chart provides an overview of how these two models differ. While these differences may appear subtle, in word or content, rest assured that conflict exist, and that conflict has the potential to delay or even worse, derail the appropriate provision of therapeutic intervention.

Medical versus Educational Model of Service Provision

Collaboration is the key that unlocks services to children who may have medical needs that may also manifest themselves in the educational realm. However, it may seem that physicians and the school-based professionals are speaking two different languages, both with the interest of the individual in their care.

Table 1.2 Educational versus Medical Model of Service provision

Component of Service Provision	Medical Model	Educational Model (For Special Education and Related Services)
Identification of Difficulty	Medical “ Diagnosis ” based on standard of medical diagnoses known as ICD-10 set forth by the World Health Organization (https://www.cdc.gov/nchs/icd/icd10cm.htm)	1 of 13 “ Classifications ” based on IDEA 34 C.F.R.. § 300 (2004) (http://idea.ed.gov)
Testing Terminology and Timelines	Testing of disease or disorder and the process thereof is managed by the Primary Care Physician (PCP) or managing medical provider. Re-evaluation/ revision of diagnosis is only done if and when symptoms change.	Testing for a “ suspected disabling condition ” is accomplished at the time of the initial referral for special education and related services and then revisited once every 3 years at a “Re-evaluation planning meeting” (https://www2.ed.gov/policy/speced/guid/idea/modelform-safeguards.pdf)
Testing May Include (but is not limited to)	A battery of examinations and evaluations to arrive at the medical diagnosis. What testing and how many tests are done is a decision made solely at the discretion of the PCP, managing medical provider, or specialist.	Social assessment, psychoeducational assessment, learning evaluation, speech and language evaluation, audiological evaluation, occupation and/or physical therapy evaluation, behavioral evaluation, pediatric neurological evaluation, teacher evaluations. Which evaluations are chosen are based upon a procedural meeting held by the school-based child study team.

(Continues)

Table 1.2 (Continued)

Component of Service Provision	Medical Model	Educational Model (For Special Education and Related Services)
Outside Assessments	Completed at the discretion of the PCP or managing medical provider based on the suspected diagnosis.	May be introduced to the child study team, but the team is not obligated to accept an assessment or its recommendations. This includes information provided to the school by the child's managing medical provider.
Services provided through	A treatment plan managed by the PCP, managing medical provider, or medical specialist	The development of an individual education program (IEP) by a team of educational specialists, classroom staff, and the parent
Guidance for service provision provided by:	American Medical Association, specialty medical practice associations, physician references, and standards/guidelines of practice	U.S. Department of Education and individual state education law
Eligibility for school-based services	A medical diagnosis does not automatically make a child eligible for service provision in the educational setting.	A child is found "eligible for special education and related services" based on the results of the evaluations completed by the school-based child study team using the terminology of 1 of the 13 classifying conditions (http://idea.ed.gov/).
For school-based services to be provided	Contact needs to be made with a school-based student support team (SST) who is then charged to prove: "A physical or mental impairment which substantially limits 1 or more major life activities" (https://www.ada.gov/)	IEP team must determine: "Manifestation of the disability in the educational setting" (http://idea.ed.gov/)
Focus of Related Services	Occupational and physical therapies may have a broader focus on the individual's whole environment.	Some services, such as occupational and physical therapies, may be limited to skills that are educationally relevant and relate to a child's learning activities only.
Fees	Cost of procedures either paid for through health insurance provider or "out of pocket" by the family based on current procedural terminology (CPT) Codes (http://cptcodelist.com/).	No cost incurred by the family, based on the educational premise of "Free and Appropriate Public Education" (<i>Pub.L. 93-112, 87 Stat. 355, enacted September 26, 1973</i>).

The following is an analysis of the major differences between these two models. Gaining and understanding of how each part of the process varies will enable professionals to request the *appropriate* service from the *appropriate* specialist using the *appropriate* procedural language. The result is more efficient and effective service provision see **Table 4.1**.

Telepractices

Both the SLP and the audiologist's scope of practice discuss telepractice as an option for service provision. In an interprofessional practice model of managing both diagnostic and therapeutic appointments, this can be a very innovative, efficient, and cost effective

way of managing one's caseload. Assuring the proper function of hearing aids, cochlear implants, and other hearing assistance technology is among the most prevalent uses of virtual collaborative therapy. Acoustically controlled aural (re)habilitation in early intervention is certainly another. The asynchronous interpretation of automated screening and diagnostic assessments of hearing is yet a third. In a day-and-age where technology is far reaching, the therapeutic benefits of collaborative telepractice can be seemingly endless. Of paramount consideration when entertaining the possibility of telepractice, the SLP must consider how these sessions will conform to confidentiality laws during each session and the level

of encryption the virtual platform provides. Equally important, will your patient/client's technology and Internet connection support adequate streaming for an uninterrupted therapy or diagnostic session? Will yours? In addition, the regulations surrounding telepractice as well as reimbursement guidelines vary from state-to-state. Prudent clinicians will check with their state to make sure they are following telepractice guidelines based on their state's specific guidelines and regulations. As a newer platform for service delivery, while telepractice is endorsed by ASHA, it is not yet regulated nationally (ASHA 1997–2021/ASHA 2016).

Standard Precautions

“Standard precautions,” previously referred to as “universal precautions,” are a set of procedures and practices set forth by the Center for Disease Control and Prevention (CDC) and are designed to help protect healthcare workers and patients alike from a wide range of pathogens. The American Speech, Language, Hearing Association aligns its resources with the CDC to protect those is the practice of both speech-language pathology and audiology. Whether working in a hospital, clinic, school, or private practice, it is imperative that standard precautions be followed without fail.

All human blood and certain human body fluids are to be treated as if those fluids are already known to be infectious for human immunodeficiency virus (HIV), hepatitis B virus (HBV), SARS-CoV-2 and its mutations, and other airborne and blood-borne pathogens. Instrumentation that comes into physical contact with the patient must be cleaned and disinfected after each use. According to OSHA 29 CRF standard 1910.1030, in order to protect both practitioner and patient/client/student, the following procedures are recommended.

Hand Hygiene: According to the World Health Organization guidelines, following physical contact with a patient/client, the practitioner must perform personal hand hygiene using either alcohol-based (hand) rub, antimicrobial (medicated) soap, antiseptic agent, detergent (surfactant), “plain” soap (one that contained no added antimicrobial agents),

waterless antiseptic agent, or antiseptic hand wipes. These agents may also be offered to the patient, client, or student if there are no medical contraindications (World Health Organization, 2009).

Isolation Precautions: Any individual who comes into contact with a patient/client with “isolation orders” must create a tangible barrier between the practitioner and the individual. This includes healthcare workers, allied health professionals, and family members. Typically, the medical facility provides personal protective equipment necessary depending on the individual's diagnosis.

Personal Protective Equipment (PPE): PPE includes gloves, face masks, gowns, protective glasses, and other equipment used to provide a barrier of safety between the practitioner and the patient. Attention to the degradation of the acoustic signal must be considered during the use of masks, shields, and other face coverings when working with patients/clients with hearing loss or those using assistive listening technology. A reduction in the overall acoustic access during the use of a mask or other face covering can be significant enough to degrade the auditory signal and render some auditory therapies ineffective. Always check with the patient's audiologist regarding the acoustic ramification of the use of face coverings during evaluations and therapy, as each are specific and unique to each patient.

Needle Safety and Sharps Procedures/Disposal

While it is outside the scope of practice for an SLP or audiologist to work with hypodermic supplies, secondary contact with such may occur in a health-care environment. Therefore, specific facility procedures should be followed and those guidelines may be found in a center's policy and procedure manual.

Patient-Care Items and Environmental Surfaces

The CDC also publishes guidelines for the sterilization and cleaning of items used in the care of

a patient and the cleaning of surfaces used during the care, treatment, and therapies of said patient. A continuum of cleaning from sterilization to high-level disinfection can be found on their website at <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a4.htm>. Specifically, equipment and supplies used for audiometric testing and screening may include, but certainly not limited to the use of disposable, acoustically transparent earphone covers or disposable insert earphone tips, otoscopy specula, and probe tips used in tympanometry and otoacoustic emission testing.

Disclosure of Cleaning Materials

In many facilities, staff members are required to complete a Disclosure of Cleaning Materials document, sometimes known as GreenClean. The purpose of such disclosure is for the facility to manage and monitor the use of toxic chemical compounds within the confines of the agency. The SLP is advised to become familiar with the policies of his or her place of employment regarding the completion of such forms. Liquid cleaning solutions for ultrasonic cleaners, as well as wipes and sprays used on therapy tables and equipment, may all fall under the guidelines of disclosure.

A Word on Terminology

As a service provider to the patient diagnosed with hearing loss, it is important not only to understand the “technical” implications of certain terms, but also to be sensitive to the fact that some of these terms might carry unpleasant connotations and may also be considered offensive to some individuals.

Putting the Person First

Twenty-first-century cultural sensitivity supports the view of “people first language (PFL)” when referring to an impairment or disability. While first appearing in print circa 1988 in *Business Week* magazine, professionals in the field of speech-language pathology were among leaders in the staunch advocacy of what

was initially referred to as “person first language.” With a desire to refocus an individual’s identity away from their client/patient’s speech and language difficulties addressed through therapeutic intervention. According to *The Language Used to Describe Individuals with Disabilities*, disabilities are not persons and do not define the person, so do not replace person-nouns with disability-nouns (Folkins, 1992). Emphasis should be on the individual; this means that referring to someone as “hearing impaired,” and similarly, “aphasic” or “autistic,” should be avoided.

Conversely, certain people groups prefer “Identity First Language” (Crocker & Smith 2019). A primary example, and one specifically applicable to this text, are those members of the Deaf Community, a greater definition of which follows below. Similarly, in the autism community, there are those who prefer the term *Autistic* to *person on the autism spectrum* as these individuals understand autism to be a fundamental part of themselves and inseparable (Brown, 2021).

Cultural sensitivity should be at the forefront of our professional decorum and many times begins with a sensitive conversation to establish an individual’s preference when discussing a client/patient’s special and unique needs. Our civilization has come so far in our ability to view disabilities as differences and impairments as exceptionalities. When in doubt, it should not be outside your comfort zone to ask personal preference in how a person identifies himself/herself/themselves. Furthermore, the reader is encouraged to evaluate your own use of the following terms as each applies to the servicing of future clients/patients.

“Deaf and Dumb”

The archaic 18th/19th century phrase *deaf and dumb* is considered offensive. In fact, in many European languages the phrase meant, as it did in English, not only “deaf and mute” but “deaf and stupid”—incapable of speech and, hence, incapable of being educated (Cooper, 2012; Power, 2006). Deaf individuals who choose not to use spoken language are technically considered mute. Unfortunately,

a common definition of mute is dumb: silent and without voice. However, in standard English, the more common definition of dumb implies decreased mental aptitude, which is not the case for most deaf individuals. Today, deaf people find it insulting to be called “deaf and dumb” (Power, 2006).

deaf (Lower case “d” emphasized)

The term **deaf** typically is the audiological term that refers to individuals whose hearing loss is so severe that using the sense of audition as a primary means of daily communication cannot be accomplished. This does not mean to infer that someone who is deaf (lowercase “d”) cannot use any residual hearing sensitivity as a secondary or tertiary communication modality. Many have acquired their loss of hearing later in life post-lingually. These individuals will more than likely use some type of amplification, whether hearing aids or cochlear implants, to maximally enhance their hearing and in many cases are quite adept in further supporting their hearing loss with some other type hearing assistance and/or SMART technology. Many may be capable of communicating orally, some to a greater and others to a lesser extent, use speechreading techniques, and may communicate with or without the supplemental use of manual communication. Likewise, their lives may be lived completely within a “hearing world” or the individual may choose to participate in the Deaf (capital “D”) culture and community.

Deaf

Deaf with a capital “D” refers to adults and children who share the use of American Sign Language and Deaf culture: common values, rules for behavior, traditions, and views of the individual and others (Pad-den & Humphries, 1988). Many within this people group are born deaf, and in some cases born to Deaf parents. Manual communication and speechreading are the primary means of communication for these individuals. Many prefer not to use amplification of any type or to only use amplification on a limited basis depending on circumstance. These individuals

are rooted in a community of other Deaf individuals maintaining their own social activities and network. Deaf communities can be found throughout the country and are frequently located in areas where there are large schools for the deaf, where these individuals were educated and chose to maintain residency as adults. People who identify with Deaf culture/community are in many instances Deaf individuals, their spouses, and their families. People in the Deaf community can have a wide range in their physical degree of hearing loss (Cooper, 2012).

D/deaf

D/deaf is often used to refer to both groups concurrently, while simultaneously understanding the unique differences between each other. This term is frequently used within the educational realm, elementary, secondary and postsecondary institutions, to indicate not only that both people groups are being welcomed, but that the specific institution recognizes and caters to their individual differences.

Hard of Hearing

Hard of hearing is the preferred terminology for a person presenting with a hearing loss who can derive benefit from hearing aids and uses aural/oral speech for communication as their primary means of communication—for example, someone who can use a standard telephone (Zak, 1996). The older, and less-used term, hearing impaired is felt to draw attention away from the person as an individual and focus directly on the disability itself.

Resources for Best Practice and Evidence-Based Practice

The practicing SLP is held to high ethical standards by ASHA to provide the best quality service possible to his or her patients. Although a job description or a policies and procedures manual will provide guidance for the SLP in specific practice settings and situations, several overlying concepts will provide

guidance in the quality of your services. Whether it is in the form of a hearing screening using state-of-the-art technology or evaluating the articulation of a child with developmental disabilities, holding yourself accountable for quality service should be at the forefront of your clinical practice.

Best Practice

Considered by many to be a buzzword, the term **best practice** describes the development of a standard of practice or process that can be used as a benchmark across a profession; best practices provide a clear expression of professional roles and responsibilities (English, 1991). Best practice refers to a clinical process or testing technique that is judged to be scientifically sound and that consistently yields results of better quality than those achieved with other procedures. Best practices are never static but are ever-changing as improvements in therapeutic intervention and technology are discovered. Best practices are not mandated legislative regulations, but rather they are guidelines used as effective measures for a standard of practice.

To this end, ASHA's practice policy documents, along with other cardinal documents of the association, are written for and by ASHA members and approved by its governance to promulgate best practices and standards in the professions of audiology and speech-language pathology (ASHA, n.d.). As current or future members of ASHA, the vast association resources that are available and at your disposal through the ASHA website (see www.asha.org/policy/about/) include documents in the following categories:

- Preferred Practice Patterns—the informational base for providing quality patient/client care and a focus for professional preparation, continuing education, and research
- Scope of Practice—an outline of the parameters of each of the professions
- Guidelines—current best practice procedures based on available evidence
- Position Statements—public statements of ASHA's official stand on various issues

- Knowledge and Skills—the knowledge and set of skills required for a particular area of practice
- Technical Reports—supporting documentation and research for an ASHA position statement
- Relevant Papers—supporting and related professional documents
- Standards/Quality Indicators—documents related to certification accreditation, and professional standards
- Ethics—includes the Code of Ethics (by which all members and certificate holders are bound) and supporting documents
- Bylaws—the bylaws of ASHA, the ASH Foundation, and the ASHA PAC

Evidence-Based Practice

Entire textbooks and courses are devoted to the study of **evidence-based practice (EBP)**. As such, this section is not intended—in any way—to provide thorough coverage of the topic or what it entails. It is important, however, to highlight the importance of employing EBP principles to the clinician's practice. Therefore, the purpose of this section is merely to define and describe EBP, and to provide resources for you to further investigate this topic on your own.

EBP is the foundational component of research from Dr. David Sackett, considered a pioneer in the area. EBP can be defined as the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of the individual patient. It means integrating individual clinical expertise with the best available external clinical evidence from systematic research (Sackett & Rosenberg, 1996).

For the SLP, EBP is the integration of clinical knowledge, the value a patient places on his or her therapy session, and research evidence into the decision-making process for patient care. You might think of this similarly to that of a three-legged stool: This process will collapse if any of its legs are missing. Knowledge of clinical practice is based on the clinician's collective

experiences, education, and clinical skills. However, an integral part of EBP is also the patient. The nature of the disability, concern regarding therapeutic outcome, expectations, and values of the therapy session all play a large role in EBP. Best practices, as discussed in the previous section, are included as well because data regarding patient outcomes is usually found in clinically relevant research that has been conducted using sound methodology (Sackett, 2000).

The evidence of therapeutic progress by itself does not determine the level of therapeutic effectiveness, but it can help support the patient care process. The full integration of all three areas into clinical decisions increases the opportunity for effective clinical outcomes and quality of life. EBP requires the clinician to constantly develop new skills and to keep abreast of and critically evaluate clinical literature, a process that will serve to hone clinical practices.

A plethora of resources for EBP are available through the ASHA website at <http://www.asha.org/members/ebp/>. A guide to the steps in the EBP process, EBP tutorials, and a list of evidence-based systematic reviews on a broad range of topics are only a few of the many educational tools available through the website. Students and practicing clinicians alike are encouraged to explore the information available.

Getting Started

With a greater understanding of the daily scope of practice of the audiologist, the SLP must follow several other guidelines when using audiometric equipment. Regardless of how this equipment will be used (diagnostically versus screening), one must adhere to the following OSHA regulations as well as the ASHA guidelines.

As an SLP, the maintenance of audiometric equipment may or may not be your responsibility. However, as a professional routinely using audiometric tools, you must be aware of the maintenance requirements of the equipment in your possession. Maintaining up-to-date calibration (electroacoustic as well as daily functional) of the equipment to be used for the screening is mandatory.

Electroacoustic Calibration

ASHA requires that the routine electroacoustic calibration of the test equipment be completed annually by an agency or a business specifically contracted by the individual facility to do so. This agency or business typically both sells and provides services of calibration and maintenance of audiological equipment. Calibration is necessary to ensure the validity and accuracy of the results obtained and includes measurement of the background noise levels in the sound booth or other environment used for audiometric testing and calibration of the audiometric equipment itself. To ensure that proper electroacoustic calibration has been completed on the equipment in use, search for a sticker with a calibration date and agency name on each piece of equipment; the SLP merely needs to verify that the date of the last calibration is within one calendar year of the date of the screening.

Daily Biological Calibration/ Listening Checks

In addition to annual electroacoustic calibration, daily functional (visual) inspections, performance checks, and bio-acoustic (listening) measurements must be conducted to verify the equipment performance before use (ASHA, 2005). The functional inspection, performed each day prior to use, is quickly and easily accomplished by plugging in the machine, making sure it turns on, putting on the standard earphones (or inserting the insert earphones), and performing a listening check on oneself to make certain that the equipment is subjectively functioning appropriately. A daily biometric calibration sheet should be available to record the date and initials of the staff member completing this daily responsibility.

Accurate results require equipment that is functioning appropriately. If the equipment's electroacoustic calibration sticker is out of date or if any mechanical or functional problem is suspected as a result of the daily biological/listening check, misdiagnosis of hearing loss can occur. Equipment problems should be reported to the supervisor in charge so that repair or

replacement of equipment is done in a timely manner. Any equipment suspected of malfunction should be removed from clinical use immediately.

Accessing Your Friendly Neighborhood Audiologist

As sister fields, speech-language pathology and audiology both fall under the umbrella of ASHA; no matter where you find yourself practicing, you have a network of colleagues you can use as resources on a routine, daily basis. These individuals should never be hard to find in acute care medical facilities because those settings often have speech and hearing departments or otolaryngology departments where the audiologists are located. Subacute and nursing home facility

employees may have a more difficult time locating the audiologist employed by the facility, possibly the result of limited hours of consultation. Yet even fewer professionals are employed within school systems as educational audiologists, but they can usually be accessed through local, county, regional, or state departments of education. The Educational Audiology Association (EAA) is a network of professionals working within the educational system; EAA is an invaluable repository of materials for working within the educational realm. National and state speech-language-hearing association conventions are an excellent venue for networking opportunities, as are continuing education workshops and national/international symposiums. Regardless, it is professionally beneficial that you always be able to network with an audiologist when working with an individual with hearing loss.

SUMMARY

The role of the SLP in servicing patients with hearing loss is clearly defined in the ASHA Scope of Practice in Speech-Language Pathology. Through the effective measures of hearing screening, application of best practice methods, and being proactive in interprofessional collaboration, this process can and will serve the deaf or hard-of-hearing individual in the most

effective therapeutic ways possible. This can only be done when SLPs are clear about their role as a professional, have a strong understanding of the premise behind the screening measure used to identify potential hearing loss, and keep their professional practices current based on research and trends within the field of speech-language pathology.

DISCUSSION QUESTIONS

1. List three ways the roles of the SLP and the audiologist would be similar based on the ASHA scopes of practice for both fields.
2. You are asked to interpret audiological test results for a patient on your caseload. How would you access an audiologist to assist you?
3. Why are universal precautions so important?

4. What are the two types of calibration? How are they the same? How are they different?
5. Describe the differences between Deaf and deaf.
6. What are the three components to evidence-based practice (EBP)? How does the patient's investment in their therapy play an important role in EBP?

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