STANDARD OF PRACTISE
FOR AUDIOLOGY
PROFESSION
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I. Preamble

This Standard of Practise for the Profession of Audiology document is established to enhance the quality of professional services and for the members. The Standard of Practise provide an informational base to promote quality patient care delivery in health care, education, industry, and other settings in which audiologists practice. They are sufficiently flexible to permit both innovation and acceptable practice variation yet sufficiently definitive to guide practitioners in decision making for appropriate clinical outcomes. They provide a focus for professional preparation, continuing education, and research activities.

These standards of practise pattern are organized by procedure and were developed to be consistent with the World Health Organization's (2001) International Classification of Functioning, Disability and Health, as well as the framework of the Scope of Practice in Audiology. For each procedure, the Standard of Practise for the Profession of Audiology specifies the expected outcome(s), clinical indications for the procedure, clinical process and others who may perform the procedures. These Standard of Practise document was adapted from various established documents by the Audiology Australia Professional Practice Standards (2013) and American Speech-Language-Hearing Association Preferred Practice Patterns for the Profession of Audiology (2006).

The Standard of Practise for the Profession of Audiology represent the consensus of the members of the profession after the consideration of available scientific evidence, existing and related policies, current practice patterns, expert opinions, and the collective judgment and experience of practitioners in the field.
II. Guiding Principles

The following guiding principles formed the basis of the Standard of Practise for the profession of Audiology:

1. Keep paramount the welfare of patients served in all practice decisions and actions.
2. Acknowledge that a primary purpose for addressing communication issues is to effect measurable and functional change(s) in an individual’s communication status so that he or she may participate as fully as possible in all aspects of life—social, educational, and vocational.
3. Recognize that communication is always an interactive process and that the focus of intervention may include training of communication partners (e.g., caregivers, family members, peers, educators).
4. Maintain sensitivity to and knowledge of cultural and linguistic differences and the individual preferences and needs of patients and their families and/or caregivers.
5. Acknowledge that the scope of practice for audiologists enables them to engage in activities that identify, assess, diagnose, manage, and interpret test results related to disorders of the auditory, balance, and other neural systems.
6. Identify appropriate support personnel who may perform certain procedures.
7. Address the clinical indications for performing any given procedure.
8. Define appropriate environmental factors related to procedures (e.g., ambient noise, setting, equipment, materials).
9. Address demographic factors pertinent to the individual (e.g., age, developmental level, education), as well as cultural, ethnic, linguistic, vocational, and social factors.
10. Consider risk as it relates to the health, safety, and welfare of patients and practitioners; severity of impairment, disability, or handicap; severity of auditory, balance, or other related disorder(s); premorbid health and cognitive status; related conditions and complications; effects of medications, surgery, and other interventions; special needs (e.g., glasses, hearing aid, wheelchair); social needs/support system; and other services needed.
11. Consider outcomes including prevention of auditory, vestibular, and other related disorders; improvement and/or maintenance of functional communication; and enhancement of the quality of life.
12. Consider intra- and interdisciplinary approaches to service delivery.
13. Recognize the dignity and privacy of individuals and consider patient rights, expectations, needs, and preferences.
14. Recognize the value and importance of obtaining fully informed consent for procedures that may present risk or are part of a research protocol and appropriate releases of information before sharing any information about patients with others.
15. Recognize a variety of appropriate service delivery models and procedures (e.g., collaborative consultation, participation in multi-, inter-, and transdisciplinary teams, use of support personnel, and new and advanced technologies).

16. Adhere to the specifications and intent of the current Code of Ethics.
III. Standard of Practise

A. IDENTIFICATION

Management, supervision and provision of advice on newborn hearing screening programmes, and coordination with long-term audiological services for children with hearing impairment and their families.

1. Audiological Screening

a) Expected Outcome(s)

Audiological screening serves to prevent further consequences from unidentified auditory impairment.

Audiological screening identifies those persons with auditory impairment or at risk for such impairment that may impact communication, health, education, and psychosocial function. Audiological screening may result in recommendations for rescreening, audiological assessment/evaluation, or referral for other assessment or treatment.

b) Clinical Indications

Individuals of all ages (from birth through adult years) are screened as needed, requested, or mandated or when they have conditions that place them at risk for hearing loss.

Screen all newborns for impairment at birth or within 3 months of age, at-risk toddlers and preschoolers, and school-age children.

Neonates should receive audiological screening before hospital discharge in accordance with the guidelines of the Joint Committee on Infant Hearing (2000). When resource limitations or other restrictions preclude screening all newborns, all infants who receive neonatal intensive care or special care and all infants who have conditions that place them at risk (with indicators) for hearing impairment should be screened. Infants who are not tested as newborns should be screened before 3 months of age. Infants at risk for progressive or late-onset hearing loss should be screened every 6 months until 3 years of age and at appropriate intervals thereafter.

Infants and toddlers should be screened for otologic disorder and auditory impairment as needed, requested, or mandated or when they have conditions that place them at risk. Screen of well-baby visits up through 60 months of age or if family/caregiver expresses concern.

Screen school-age children on initial entry to school and annually in kindergarten is highly recommended.

Adults should be screened at least every decade through age 50 and at 3-year intervals thereafter, or more frequently on exposure to noise, toxic medications, or other risk factors associated with hearing loss.

c) Clinical Process

Audiological screening includes

- concern on the part of an individual and/or caregiver
- consent of patient or family/caregiver
- case history
- note of problems with hearing, balance, tinnitus, and speech-language
- otoscopic examination.
Audiological screening procedures may include:
• for neonates and young infants, birth through 6 months, appropriate (electro)physiological measures in accordance with Joint Committee on Infant Hearing (2007) guidelines.
• for children and adults, developmentally appropriate assessment procedures and stimuli and response methods.
• for patients who fail the audiological screening, referral to an audiologist for further audiological assessment/evaluation.

d) Others Who May Perform the Procedure(s)
Support personnel may conduct selected procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals.

e) Setting/Equipment Specifications
Audiological screening is conducted in a clinical or natural environment conducive to obtain valid and reliable screening results, which may, of necessity, at times include non-traditional settings such as bedside, home, or hospice. Electroacoustic equipment meets American National Standards Institute (ANSI) and manufacturer’s specifications. Ambient noise levels may not always meet ANSI standards for pure-tone threshold testing but are sufficiently low to allow accurate and reliable screening.

f) Safety and Health Precautions
All procedures ensure the safety of the patient and clinician and adhere to standard health precautions (e.g., prevention of bodily injury and transmission of infectious disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer’s instructions.

g) Documentation
Documentation should include identifying information, a case history, screening results, and recommendations including the need for rescreening, audiological assessment, counseling, or referral.

B. ASSESSMENT AND DIAGNOSIS
The conduct and interpretation of behavioural, middle ear measurement, electroacoustic, and/or electrophysiological methods, vestibular and balance diagnostic assessment to assess peripheral and central auditory function, vestibular and balance, and related systems;
Measurement and interpretation of sensory and motor evoked potentials, electromyography, and other electrodagnostic tests for purposes of neurophysiological intraoperative monitoring and cranial nerve assessment;

1. Basic Audiological Evaluation
a) Expected Outcome(s)
Pure-tone and speech audiometry is conducted to determine the existence, type, and degree of hearing loss on the basis of behavioral responses to acoustic stimuli. Acoustic immittance procedures are conducted to assess middle ear function.

Results from the audiological assessment will be interpreted and may result in recommendations for dismissal or further audiological assessment/evaluation.
audiological (re)habilitative evaluation; speech-language evaluation; or medical, psychological, and/or educational referral.

a) Clinical Indications
Basic audiological assessment is prompted by self-referral, family/caregiver referral, failure of audiological screening, or referral from other professionals.

b) Clinical Process
Assessment includes the following:

- a case history
- external ear examination
- otoscopic examination
- acoustic immittance procedures (tympanometry, static immittance, and acoustic reflex measures)
- air conduction and bone conduction pure-tone threshold measures with appropriate masking
- speech reception thresholds or speech detection/awareness thresholds with appropriate masking
- word recognition measures with appropriate masking
- speech-language screening

Other procedures may be completed to supplement the basic audiological assessment:

- otoacoustic emissions screening
- communication inventories and needs assessment inventories
- screening for central auditory processing disorders or other auditory and vestibular disorders.

Interpretation of the assessment may indicate one or more of the following:

- hearing within normal limits
- identification and quantification of hearing loss
- hearing loss identified but further testing required
- patient could not be tested using procedures

Evaluation may result in one of the following:

- discharge and/or recommendations for routine follow-up
- referral for audiological rehabilitation evaluation
- referral for further audiological evaluation and/or other services

c) Others Who May Perform the Procedure(s)
Support personnel may conduct selected assessment procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals or recommendations.

d) Setting/Equipment Specifications
Assessments are conducted in a clinical environment with calibrated acoustic stimuli (e.g., pure tones, broadband noise, speech stimuli) conducive to obtaining reliable and valid results.

Electroacoustic and electrophysiological equipment and ambient noise meet American National Standards Institute and/or manufacturer's specification.

Testing environment should meet the permissible ambient noise levels for audiometric test rooms.
e) **Safety and Health Precautions**
   All procedures ensure the safety of the patient, audiologist, and others who participate in the clinical process and adhere to the standard precautions (e.g., prevention of bodily injury and transmission of infectious disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer’s instructions.

f) **Documentation**
   Documentation contains identifying information, case history, assessment results, interpretation, prognosis, and specific recommendations.

2. **Advanced Audiological Evaluation**
   a) **Expected Outcome(s)**
      Advanced audiological evaluations are conducted to determine the existence, type, and degree of hearing impairment on the basis of behavioral, physiological, or electrophysiological response to acoustic stimuli.

      Results from the advanced audiological diagnostic procedures will be interpreted and may result in recommendations for discharge or audiological (re)habilitative evaluation; speech-language evaluation; or medical, psychological, and/or educational referral.

   b) **Clinical Indications**
      Advanced audiological evaluations are prompted by inconclusive and/or inconsistent results on the basic audiological evaluation or referral from other professionals.

   c) **Clinical Process**
      Advanced audiological diagnostic measures should not be completed in the absence of results obtained from a basic audiological evaluation. Specific procedures will vary depending on practitioner judgment and patient need.

      Assessment may include the following:
      - basic audiological evaluation
      - acoustic reflex patterns
      - acoustic reflex decay
      - auditory evoked potentials
      - performance intensity function with standardized speech materials
      - otoacoustic emissions
      - Stenger tests
      - central auditory processing disorder evaluation
      - tinnitus evaluation
      - dynamic range assessment
      - high-frequency audiometry

      Interpretation of the assessment may indicate one or more of the following:
      - normal hearing
      - nonorganic hearing loss
      - existence, type, and degree of hearing loss
      - site of lesion
      - hyperacusis
      - tinnitus
      - inconclusive test results

      Evaluation may result in one or more of the following:
• discharge and/or recommendations for routine follow-up
• referral for audiological rehabilitation evaluation
• referral to other professionals

d) Others Who May Perform the Procedure(s)
Support personnel may conduct selected assessment procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals or recommendations.

e) Setting/Equipment Specifications
Assessments are conducted in a clinical environment with calibrated acoustic stimuli (e.g., pure tones, broadband noise, speech stimuli) conducive to obtaining reliable and valid results.
Compact discs and disc players or high-quality tapes and tape players should be used.
Electroacoustic and electrophysiological equipment and ambient noise must meet American National Standards Institute and/or manufacturer's specification.
Testing environment should meet the permissible ambient noise levels for audiometric test rooms.

f) Safety and Health Precautions
All procedures ensure the safety of the patient, audiologist, and others who participate in the clinical process and adhere to the standard precautions (e.g., prevention of bodily injury and transmission of infectious disease).
Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer's instructions.

g) Documentation
Documentation contains identifying information, case history, assessment results, interpretation, prognosis, and specific recommendations.

3. Pediatric Audiological Evaluation
a) Expected Outcome(s)
Infants and toddlers at risk for hearing impairment that may affect communication, development, health, and education are identified.
Pediatric audiological assessment is conducted to determine the existence, type, and degree of hearing loss on the basis of behavioral, physiological, or electrophysiological responses to acoustic stimuli.
Acoustic immittance procedures are conducted to assess middle ear function, irrespective of hearing status.
Results from the audiological assessment will be interpreted and may result in recommendations for discharge or further audiological assessment/evaluation; audiological (re)habilitative evaluation; speech-language evaluation; or medical, psychological, and/or educational referral.

b) Clinical Indications
Assessment of infants, children, and those whose developmental levels preclude the use of a basic audiological evaluation is prompted by failure of an audiological hearing screening, presence of an at-risk indicator associated with hearing impairment, parental/caregiver concern, or referral. Children who are at risk for late onset or progressive hearing loss require periodic monitoring of their auditory status.
c) Clinical Process
Before evaluating a child, consent must be obtained from the parent or legal guardian. Government regulations or policies may supersede this recommendation. Assessment may include the following:

- a case history
- external ear examination
- otoscopic examination
- acoustic immittance procedures (tympanometry, static immittance, and acoustic reflex measures)
- otoacoustic emissions testing
- developmentally appropriate behavioral procedures (e.g., behavioral observation, visual reinforcement audiometry, conditioned play audiometry) to obtain frequency-specific and ear-specific information regarding auditory status
- developmentally appropriate behavioral procedures to obtain speech detection/awareness/reception thresholds with appropriate masking
- word recognition measures with appropriate masking
- auditory evoked potentials procedures to determine the status of the auditory system in individuals whose developmental levels preclude use of a basic audiological evaluation.

Other procedures may be completed to supplement the basic audiological assessment:

- a case history
- physiological tests of central auditory function
- communication inventories and needs assessment inventories.

Interpretation of the assessment may indicate one or more of the following:

- hearing within normal limits
- identification and quantification of hearing loss
- hearing loss identified but further testing required
- patient could not be tested using procedures

Evaluation may result in one or more of the following:

- discharge and/or recommendations for routine follow-up
- ongoing audiological evaluation and monitoring
- parental counseling
- audiological (re)habilitation evaluation
- referral to or collaboration with other professionals (e.g., physician, speech language pathologist, early intervention programme, genetic counselor, educator)

d) Others Who May Perform the Procedure(s)
Support personnel may conduct selected assessment procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals or recommendations.

e) Setting/Equipment Specifications
Assessments are conducted in a clinical environment with calibrated acoustic stimuli (e.g., pure tones, broadband noise, speech stimuli) conducive to obtaining reliable and valid results. Electroacoustic and electrophysiological equipment and ambient noise must meet American National Standards Institute and/or manufacturer's specification. Testing environment should meet the permissible ambient noise levels for audiometric test rooms.
f) **Safety and Health Precautions**

All procedures ensure the safety of the patient, audiologist, and others who participate in the clinical process and adhere to standard precautions (e.g., prevention of bodily injury and transmission of infectious disease). When sedation is necessary, proper administration is ensured, and all protocols regarding procedures and equipment are strictly followed. Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer’s instructions.

g) **Documentation**

Document contains identifying information, case history, assessment results, interpretation, prognosis, and specific recommendations.

4. **Auditory Evoked Response (AER) Evaluation**

a) **Expected Outcome(s)**

An AER evaluation determines the status of the peripheral and central auditory system. An AER evaluation provides one or more of the following:

- an estimation of auditory sensitivity
- a determination of auditory vestibular neural pathway integrity
- a determination of probable site of lesion

An AER evaluation may include a recommendation for a referral for specialized medical evaluation and/or audiological rehabilitative evaluation.

b) **Clinical Indications**

AER evaluations may be indicated for objective evaluation of auditory and vestibular sensitivity and neural pathway status. AER evaluations are conducted with patients who are difficult to test by conventional behavioral methods and/or to supplement behavioral information. AER evaluations are conducted to determine site of lesion or resolve conflicting information.

c) **Clinical Process**

AER evaluations should be completed in conjunction with an audiological evaluation. Specific tests will vary depending on practitioner judgment, referral request, and patient needs and ability.

Assessment may include the following:

- electrocochleography
- auditory brainstem response
- auditory steady state response
- auditory middle latency response
- auditory late (long latency) response
- P300 response
- mismatch negativity response

Interpretation of the assessment may indicate one or more of the following:

- normal auditory system function including status of the peripheral and ascending neural auditory pathways and hearing sensitivity
- identification and quantification of hearing loss
- abnormal sensory system function and/or abnormal neural pathway function
- determination of site of lesion
- inconclusive test results
Evaluation may result in one or more of the following:
• discharge and/or recommendations for routine follow-up
• recommendation for further testing
• referral for audiological rehabilitation evaluation
• referral to other professionals

d) Others Who May Perform the Procedure(s)
Support personnel may conduct selected assessment procedures under the supervision
of a certified audiologist but may not interpret the clinical results or provide referrals or
recommendations.

e) Setting/Equipment Specifications
Procedures are conducted in a clinical environment with calibrated acoustic stimuli (e.g.,
pure tones, broadband noise, speech stimuli) conducive to obtaining reliable and valid
results. Electroacoustic and electrophysiological equipment and ambient noise meet
American National Standards Institute (ANSI) and/or manufacturer's specification.
AER testing is conducted in an environment that is satisfactorily free of electrical
interference. Ambient noise levels meet ANSI specifications, and calibrated acoustic
stimuli are used as appropriate.

f) Safety and Health Precautions
All procedures ensure the safety of the patient and clinician and adhere to standard
health precautions (e.g., prevention of bodily injury and transmission of infectious
disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use
equipment before reuse are carried out according to facility-specific infection control
policies and procedures and according to manufacturer's instructions.
The audiologist performing AER evaluations is familiar with facility-specific emergency
medical protocols and adheres to all hospital, state, and federal regulations.
When sedation is necessary, proper administration is ensured, and all protocols
regarding procedures and equipment are strictly followed.

g) Documentation
Documentation contains identifying information, case history, pertinent procedural
details (e.g., electrodiagnostic equipment, electrode types and sites, electrical
stimulation probes, acoustic transducers, and stimulating and recording parameters)
and documentation of clinical events (e.g., patient sleep status, sedation, procedural
problems, patient comments).
Documentation also includes assessment results, interpretation, prognosis, and specific
recommendations.

5. Intraoperative Monitoring (IOM)

a) Expected Outcomes
IOM reduces the morbidity associated with operative procedures (e.g., neurosurgical,
otorhinolaryngological, and orthopedic).
IOM assists the surgeon in recognizing the status of cranial nerves and other
neurological structures and the potential for damage during an operative procedure.
IOM assesses the functional status of the neurological structures, thus increasing the
likelihood of a successful operative procedure.

b) Clinical Indications
IOM is indicated when an operative procedure presents a significant risk for damage to a
neurological structure, as determined by the surgeon.
IOM is indicated when monitoring of the functional status of a neurological structure is required. Clinical Process IOM preoperative considerations include but are not limited to the following:

- thorough review of the patient's medical records including results of a baseline evoked response assessment
- case history directly from the patient and all other available sources
- explanation to patient regarding the role of the monitoring team during the operative procedure
- discussion with the surgeon regarding the extent of the monitoring
- discussion with the anesthesiologist regarding the use of anesthetic agents and drugs for generalized paralysis.

IOM during the operative procedure includes but is not limited to the following:

- electrocochleography
- auditory brainstem evoked responses
- auditory evoked middle or late potentials
- visual evoked potentials
- electroencephalography
- recording of neural activity with direct, near field recording techniques
- recording of electromyography from a variety of muscles
- electrical stimulations and/or recording through a variety of surface and/or subdural needle electrode arrays
- simultaneous recording of spontaneous and sensory provoked activity
- recording of response to direct electrical stimulation

Interpretation of the recorded activity during and after the procedure may indicate the following:

- status of the function of monitored structure
- no impending or endured damage
- status of monitored structure just before awakening of the patient
- monitoring of the status of a structure for spontaneous and/or evoked responses was successful

c) Others Who May Perform the Procedure(s)

Support personnel may conduct selected assessment procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals or recommendations.

d) Setting/Equipment Specifications

The setting for IOM will be either an operating room within the operative suite area of a hospital or a minor procedures room of an outpatient clinic. Equipment will be of a type used for neurophysiological recordings with real-time display and archived for offline analysis and with the capability of the following:

- presenting ongoing spontaneous activity
- performing averaged responses
- providing for sensory stimulation via auditory, visual, or electrical stimuli

e) Safety and Health Precautions

All procedures ensure the safety of the patient, audiologist, and others who participate in the clinical process and adhere to the standard precautions (e.g., prevention of bodily injury and transmission of infectious disease).
Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer's instructions. The audiologist performing IOM must be familiar with facility-specific emergency medical protocols and adhere to all hospital, state, and federal regulations.

f) Documentation
Documentation contains pertinent background information; tests performed; test parameters; assessment results; patient condition before, during, and after the operative procedure during the interval of IOM (including any patient adverse reactions to the use of the monitoring electrodes or electrical stimulations); interpretation; communications with the surgeon and anesthesiologist during the procedures; vital parameters during the procedure; and specific recommendations.

6. Vestibular and Balance System Evaluation
a) Expected Outcome(s)
Balance system evaluation is conducted to detect abnormal functioning within the vestibular or balance system. Results of the balance system assessment are interpreted, and the evaluation may assist in making recommendations for vestibular and balance rehabilitation therapy, reduction in falls risk, and possible referral for medical evaluation.

b) Clinical Indications
Vestibular or balance system evaluation is indicated when a patient presents with nystagmus, complaints of vertigo, balance dysfunction, or gait abnormalities, or when peripheral or central vestibulopathy is suspected. The evaluation can also be prompted by medical referral or by results of an audiological assessment.

c) Clinical Process
A case history is taken, including the characteristics of dizziness, the associated signs and symptoms, and perceived hearing loss. The patient is given instructions regarding restrictions of medications and food/liquid intake before testing. Assessment may include one or more of the following:
• assessment for gaze stabilization, smooth pursuit, saccades, and head thrust may be made before clinical vestibular and balance studies
• electronystagmography (ENG)/videonystagmography (VNG)
  - ENG/VNG subtests may include the following:
    0 oculomotor tests, such as gaze fixation, saccades, smooth pursuit, and optokinetics
    0 spontaneous nystagmus test with fixation removed
    0 hyperventilation nystagmus test
    0 post-head-shake nystagmus test
    0 dynamic positioning (Dix-Hallpike maneuver)
    0 static positional tests
    0 bithermal or monothermal caloric irrigations
    0 ice caloric irrigations
    0 failure of fixation suppression
• dynamic visual acuity
• computerized rotatory chair
  0 step test sinusoidal
  0 harmonic acceleration
• computerized dynamic posturography
sensory organization test
motor control test
postural evoked responses
otolith function testing
vestibular evoked myogenic potentials
subjective visual vertical
Falls risk assessment that may include, but not be limited to, the above assessment procedures in addition to screening measures of gait, blood pressure, mentation, depression, vision, and reaction time.
The above evaluation may be modified for pediatric population.

Interpretation of the assessment may indicate one or more of the following:
- normal balance system function
- abnormal balance system function reflecting the aging process—functional impact of the aging process
- abnormal balance system function reflecting a pathological process with a suggestion of probable site of lesion
- functional impact of the pathological process
- disequilibrium of multisensory system deficit origin, nonvestibular disequilibrium

Evaluation may result in one or more of the following:
- discharge and/or recommendations for routine follow-up
- referral for vestibular and balance rehabilitation
- referral to other professionals

d) Others Who May Perform the Procedure(s)
Support personnel may conduct selected assessment procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals or recommendations.

e) Setting/Equipment Specifications
Power-line-operated instruments must conform to minimum American National Standards Institute (ANSI) safety requirements. The ENG/VNG system should conform to current ANSI standards. Balance system testing must be conducted in an environment that is satisfactorily free of electrical interference. Test environment must have appropriate control of lighting and ventilation.

f) Safety and Health Precautions
All procedures ensure the safety of the patient, audiologist, and others who participate in the clinical process and adhere to the standard precautions (e.g., prevention of bodily injury and transmission of infectious disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer’s instructions.

g) Documentation
Documentation contains pertinent background information; tests performed; test parameters; assessment results; patient condition before, during, and after the test (including any patient adverse reactions such as vomiting or falling); interpretation; and specific recommendations.
7. (Central) Auditory Processing Disorders Evaluation

a) Expected Outcome(s)

(Central) auditory processing disorders [(C)APD] assessment helps define the functional status of the central auditory nervous system and central auditory processes. Results of the (C)APD assessment will be interpreted and may assist in making recommendations for dismissal, further assessment, rehabilitation and communication planning, and referral for medical and/or educational assessment.

b) Clinical Indications

(C)APD evaluation is indicated for individuals of all ages who demonstrate one or more of the following:
- symptoms and/or complaints of hearing difficulty with documented normal peripheral auditory function
- central nervous system disorder potentially affecting the central auditory system
- learning problems possibly related to auditory difficulties

(c) Clinical Process

(C)APD evaluation is conducted as part of an interdisciplinary process. (C)APD and other audiological findings are integrated with reports from other professionals (e.g., speech-language pathology, neuropsychology, or neurology) to provide an evaluation of the following:
- overall cognitive status
- communication behavior, including spoken language processing and production
- educational achievement

Assessment includes the following:
- case history
- basic audiological evaluation
- advanced audiological evaluation

Central auditory electrophysiological tests may include the following:
- auditory brainstem response
- middle latency evoked response
- N1 and P2 (late potentials) responses
- P300
- mismatched negativity

Central auditory electroacoustic tests may include the following:
- acoustic reflex
- crossed suppression of otoacoustic emissions

Central auditory behavioral tests may include the following:
- tests of temporal processes (e.g., pattern perception tests, gap detection)
- tests of dichotic listening (e.g., dichotic digits, dichotic Spondaic Word Test)
- low-redundancy monaural speech tests (e.g., filtered speech)
- tests of binaural interaction (e.g., masking level differences)

Interpretations are derived from multiple tests based on age-appropriate norms, inrasubject comparisons (e.g., interaural, interelectrode comparisons) and knowledge of the central auditory nervous system in normal and disordered states.
Evaluation may result in one of the following:
• discharge
• monitoring
• further assessment
• rehabilitation and communication planning
• (C)APD treatment
• referral for medical and/or educational assessment

d) Others Who May Perform the Procedure(s)
Support personnel may conduct selected assessment procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals or recommendations.

e) Setting/Equipment Specifications
Assessments are conducted in a clinical environment with calibrated acoustic stimuli (e.g., pure tones, broadband noise, speech stimuli) conducive to obtaining reliable and valid results.
Test equipment should deliver the highest quality test signals. Electroacoustic and electrophysiological equipment must meet American National Standards Institute and/or manufacturer's specification.
Testing environment should meet the permissible ambient noise levels for audiometric test rooms.

f) Safety and Health Precautions
All procedures must ensure the safety of the patient, audiologist, and others who participate in the clinical process and adhere to standard precautions (e.g., prevention of bodily injury and transmission of infectious disease).
Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer's instructions.

g) Documentation
Documentation must contain identifying information, case history, assessment results, interpretation, prognosis, and specific recommendations.

8. Tinnitus Assessment

a) Expected Outcome(s)
Tinnitus assessment is conducted to determine the existence of tinnitus including location, progression, type of sound and associated symptom. The results from the assessment could guide clinician to help the patients to manage the symptom and reduce the distress related to tinnitus.

b) Clinical Indications
Tinnitus assessment is indicated for individuals who have complaints of any type of tinnitus.

c) Clinical Process
Comprehensive case history including, questions regarding time of onset, course of progression, description, location, perceived cause, extent to which the patient is bothered, exacerbating factors (such as food, stress, lack of sleep, etc.), history of noise exposure, medications, familial history of hearing loss or tinnitus, effect on sleep, and effect on personal/social/occupational relationships
Tinnitus assessment may also include one or more of the following but not limited to:

- Loudness discomfort levels;
- Tinnitus pitch matching;
- Tinnitus loudness matching;
- Minimal masking level;
- Residual inhibition
- Subjective questionnaires
- Basic audiological assessments
- Auditory brainstem response
- Acoustic reflex

d) Others Who May Perform the Procedure(s)
Only certified audiologist may conduct selected assessment procedures.

e) Setting/Equipment Specifications
Tinnitus assessment is conducted in a setting that includes the equipment and surroundings for audiological evaluation, patient and family/caregiver counselling.

f) Safety and Health Precautions
All procedures ensure the safety of the patient and clinician and adhere to standard precautions (e.g., prevention of bodily injury and transmission of infectious disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer’s instructions.

g) Documentation
Documentation contains pertinent background information, devices used, treatment goals, results, prognosis, and specific recommendations. Recommendations may address the need for further assessment, follow-up, or referral. When additional treatment is recommended, information should be provided concerning the frequency, estimated duration, and type of service.

C. REHABILITATION / HABILITATION
Provision of the full range of habilitative and rehabilitative services to clients; this includes the design, management and evaluation of needs' assessments and individual audiological plans.

1. Audiological (Re)habilitation Evaluation
a) Expected Outcome(s)
Audiological (re)habilitation (AR) assessment identifies the impact of a hearing loss on communication skills and capabilities.
AR assessment identifies the psychosocial impact of the loss on the individual/family/caregiver.
Results of the assessment are interpreted and may result in recommendations for AR and/or referral to other professionals.
b) Clinical Indications
AR evaluation for individuals of all ages is prompted by the identification of hearing impairment.
AR evaluation is conducted to identify rehabilitative needs and to monitor progress and assess outcome of treatment programmes.

c) Clinical Process
AR evaluation is an ongoing process requiring frequent monitoring and adjusting of services provided to patients. Evaluations can be repeated.
Assessment may include one or more of the following:
• a case history
• basic audiological evaluation or pediatric evaluation as appropriate
• speech-language screening
• determination of rehabilitative needs
• evaluation of current amplification
• hearing aid selection and evaluation
• procedures to determine cochlear implant candidacy
• self-report measures of communication problems, coping skills, and adjustment issues by the individual and/or family/caregiver
• ongoing monitoring of treatment progress and benefit (outcome measures)
• hearing assistive technology system selection

Interpretation may indicate one or more of the following:
• need for AR services
• no changes in AR management
• need for services from other professionals

Evaluation may result in one or more of the following:
• dismissal with recommendation for periodic reassessment of rehabilitative needs
• ongoing evaluation and monitoring
• additional AR services
• fitting with amplification, hearing assistive technology systems
• referral to a cochlear implant team
• referral to other professionals (e.g., speech-language pathologist, early intervention programme, special education)

d) Others Who May Perform the Procedure(s)
Support personnel may conduct selected assessment procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals or recommendations.

e) Setting/Equipment Specifications
AR assessment is conducted in clinical or natural settings with consideration of the physical and acoustic environment as well as the physical capabilities of the patient.

f) Safety and Health Precautions
All procedures ensure the safety of the patient and clinician and adhere to standard precautions (e.g., prevention of bodily injury and transmission of infectious disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer’s instructions.
g) Documentation
Documentation contains identifying information, case history, assessment results, interpretation, prognosis, and specific recommendations.

2. Audiological Rehabilitation for Adults

a) Expected Outcome(s)
Audiological rehabilitation (AR) enhances the communication performance of individuals with hearing impairment. AR facilitates adjustment to and enhances benefits from the use of hearing aids, cochlear implants, and assistive technologies. AR enhances the interpersonal, psychosocial, educational, and vocational functioning of individuals with hearing impairment. AR enhances the well-being and quality of life of individuals with hearing impairment, their family members, and caregivers.

b) Clinical Indications
AR is indicated for individuals with hearing impairment who experience, or are at risk for, communication problems that impose activity limitations and participation restrictions. Audiological rehabilitation is a facilitative process that provides intervention to address the impairments, activity limitations, participation restrictions, and possible environmental and personal factors that may affect the communication, functional health, and well-being of persons with hearing impairment or by others who participate with them in those activities.

c) Clinical Process
The AR process actively engages individuals with hearing impairment in the identification and implementation of a treatment plan to enhance compliance with the treatment regimen, to improve treatment benefits, and to ensure satisfaction with treatment outcome. AR for adults may consist of one or more of the following:
- counseling regarding the nature of the hearing impairment and the effects of the hearing impairment on communication and well-being
- counseling to address the specific interpersonal, psychosocial, educational, and vocational implications of hearing impairment for the patient, family members, and/or caregivers
- counseling regarding the use of effective coping and compensatory skills appropriate for the individual to minimize the effects of his or her hearing impairment on communication, well-being, and interpersonal, psychosocial, educational, and vocational functioning
- selection and fitting of amplification devices and assistive technologies and education regarding the use of, benefits from, and adjustment to these systems
- training in selected modalities to maximize receptive communication skills and performance in environments relevant to the patient
- periodic review of short- and long-term treatment goals and specific objectives determined from self-assessments and interactive decision making, to determine appropriateness and relevance
- regularly scheduled outcome measures to identify need for modifications to the treatment plan
- follow-up to monitor treatment benefit and outcome
- involvement of family members and/or caregivers in the rehabilitation process
- referrals to speech-language pathologists for individuals whose speech and/or voice production may be affected by their hearing impairment
- referrals to other professionals as necessary
d) Others Who May Perform the Procedure(s)
Support personnel may conduct selected assessment procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals or recommendations.

e) Setting/Equipment Specifications
AR is conducted in planned physical, acoustic, and visual environments, as well as in natural environments. Functioning of hearing aids, cochlear implants, and/or assistive listening devices is evaluated before treatment and at appropriate intervals thereafter.

f) Safety and Health Precautions
All procedures ensure the safety of the patient and clinician and adhere to standard health precautions (e.g., prevention of bodily injury and transmission of infectious disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer's instructions.

g) Documentation
Documentation contains pertinent background information, types of amplification and assistive listening systems used with specific settings, treatment goals, results, prognosis, and specific recommendations. Recommendations may address the need for further assessment, follow-up, or referral. When additional treatment is recommended, information should be provided concerning the frequency, estimated duration, and type of service.

3. Audiological (Re)habilitation for Children

a) Expected Outcome(s)
Audiological (re)habilitation (AR) facilitates the speech-language, cognitive, and social-emotional development and functioning of children with hearing impairment. Audiological rehabilitation is a facilitative process that provides intervention to address the impairments, activity limitations, participation restrictions, and possible environmental and personal factors that may affect the communication, functional health, and well-being of persons with hearing impairment or by others who participate with them in those activities. AR enhances the educational and vocational potential of children with hearing impairment. AR enhances well-being and quality of life for children with hearing impairment and their families/caregivers. AR facilitates parents' adjustment to and management of their children's hearing impairment.

b) Clinical Indications
AR is indicated for infants, toddlers, and children with hearing impairment who experience, or are at risk for, communication problems that impose activity limitations and participation restrictions.

c) Clinical Process
Initiation of AR for children takes place as soon as possible following identification of hearing loss. Parental involvement is an integral component of all aspects of AR for children. AR for children may consist of one or more of the following:
• ongoing, developmentally appropriate audiological evaluations to verify/validate results and monitor for changes in hearing levels
• counseling parents regarding their child’s hearing impairment and the potential effects on speech-language, cognitive, and social–emotional development and functioning
• selection of age-appropriate amplification devices and hearing assistive technology systems (HATS) to minimize auditory deprivation and maximize auditory stimulation
• counseling parents and/or the child regarding the use, care, and maintenance of amplification devices and HATS
• counseling parents regarding optional and optimal modes of communication
• determination of optimal training and education settings
• evaluating acoustics of classroom settings and providing recommendations for modifications
• consultation and/or team management with speech-language pathologists, educators, and other professionals
• referral for evaluation of concomitant developmental and/or medical conditions
• counseling the child with hearing impairment regarding peer pressure, stigma, and other issues related to psychosocial adjustment
• counseling the child regarding behavioral coping strategies
• follow-up to monitor treatment benefit and outcome

d) Others Who May Perform the Procedure(s)
Support personnel may conduct selected assessment procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals or recommendations.

e) Setting/Equipment Specifications
AR is conducted in planned physical, acoustic, and visual environments, as well as in natural environments. Functioning of hearing aids, cochlear implants, and/or assistive listening devices is evaluated before treatment and at appropriate intervals thereafter.

f) Safety and Health Precautions
All procedures ensure the safety of the patient/client and clinician and adhere to universal health precautions (e.g., prevention of bodily injury and transmission of infectious disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer’s instructions.

g) Documentation
Documentation contains pertinent background information, types of amplification and assistive listening systems used with specific settings, treatment goals, results, prognosis, progress statements, and specific recommendations. Recommendations may address the need for further assessment, follow-up, or referral. When additional treatment is recommended, information should be provided concerning the frequency, estimated duration, and type of service.

4. Hearing Aid Selection and Fitting
a) Expected Outcomes
Hearing aid selection and fitting are conducted to determine whether (a) a patient is a candidate for amplification or (b) the patient’s amplification system is effective. Hearing aid selection and fitting help individuals to achieve maximum understanding of, and performance with, their hearing aid(s). Fitting may result in recommendation for further audiological rehabilitation assessment or treatment. Hearing aid selection and fitting should improve the patient’s ability both
to hear sounds in the environment including warning/danger signals and to improve the audibility of speech, as the interpretation of the speech signal is basic to communication. Hearing aid selection and fitting may result in follow-up and/or referral for assistive listening system/device selection, alerting systems/device selection, product dispensing, sensory aids assessment, and/or further audiological rehabilitation assessment. Counseling is provided about personal adjustment to and the effects of hearing loss, the potential benefits to be gained from participating in a total audiological rehabilitation programme, and sensory aids including hearing and tactile aids, hearing assistive devices, cochlear implants, captioning devices, and signal/warning devices.

b) Clinical Indications
Individuals throughout the life span identified with hearing loss are referred as a result of audiological assessment and personal communication needs or preferences.

c) Clinical Process
The process of fitting hearing aids is composed of six stages: assessment, treatment planning, selection, verification, orientation, and validation. Hearing aid fitting is one component of an audiological rehabilitation plan. Assessment may include one or more of the following:
- external auditory canal examination and cerumen management
- basic or advanced audiological evaluation
- determination of the needs for medical clearance
- administration of communication inventories or questionnaires
- discussion of benefits and limitations of hearing aids given the patient’s audiological assessment and psychosocial and communication needs

Treatment planning includes the following:
- recommendation of hearing aids based on the patient’s audiological and communicative needs
- joint decisions made among the audiologist, the patient, and the family/caregivers
- ongoing counseling of the patient and family/caregivers about the potential benefits and limitations of hearing aids

Hearing aid selection
- determines appropriate physical and electroacoustic characteristics of the hearing aid(s)
- defines electroacoustic characteristics based on frequency-gain characteristics, maximum output sound pressure level, and input-output characteristics. The electroacoustic characteristics should be adjustable according to patient’s needs and objective measurement.
- defines non-electroacoustic characteristics in the audiological rehabilitation plan and results from ongoing interaction among the audiologist, patient, and family/caregiver. Non-electroacoustic characteristics include choices made about style, earmould/shell configuration, user control options, telecoil, direct audio input, and colour/shape.
- Selection must be made based on diagnostic assessments which includes air and bone conduction masking, UCL and speech discrimination scores whenever necessary.

Hearing aid verification
- confirms that the hearing aid(s) meet(s) a set of standards for quality control
- includes electroacoustic measurements performed according to the American National Standards Institute (ANSI) standard ANSI-S3.22 (ANSI-S3.22-2003 or current standard)
- rule out excessive circuit noise, intermittency, and/or poor sound quality
• assesses physical fit through examination of cosmetic appeal, physical comfort/security, absence of feedback, ease of insertion and removal, ease of control, and placement of microphone port
• uses real-ear measurements to establish audibility, comfort, and tolerance of speech and sounds in the environment and to verify compression, directionality, and automatic noise management performance
• incorporates sound field functional gain testing when fitting bone-anchored hearing aids

Hearing aid orientation
• includes appropriate training, counselling, and referrals. Key topics include instrument insertion and removal, battery safety/management, use and routine maintenance, assistive listening device coupling, telephone use, and use patterns/adjustment. Individuals can receive hearing aid training in a variety of formats, including group or individual sessions.
• includes counseling to establish realistic expectations for amplification (e.g., communication, freedom from feedback, minimization of the occlusion effect, and greater auditory benefit in quiet than in noise)

Hearing aid validation
• documents that the disability has been reduced and audiological treatment goals have been addressed
• includes self-assessment tools that measure benefit and satisfaction
• measures speech perception using either objective or subjective techniques. The effects of stimulus selection, presentation levels, noise type, signal-to-noise ratio, and the number of test items on the reliability and validity of speech perception measures should be indicated.

d) Others Who May Perform the Procedure(s)
Support personnel may conduct selected assessment procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals or recommendations.

e) Setting/Equipment Specifications
Specifications for electroacoustic equipment and environmental ambient noise must meet ANSI standards, where applicable. Instrumentation and test environments are available for sound field testing, electroacoustic evaluation of hearing aids, and real-ear measurements. Hardware and software required for fitting and assessment of programmable hearing aids are available.

f) Safety and Health Precautions
All procedures ensure the safety of the patient and clinician and adhere to universal health precautions (e.g., prevention of bodily injury and transmission of infectious disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control procedures and manufacturer’s instructions.

g) Documentation
Documentation must contain pertinent patient information, hearing aid fitting results, prognosis, and specific referrals and recommendations. The audiologist should provide written instructions on battery safety and management and document the provision of this information and the client’s acknowledgment of receiving this information. Recommendations may address the need for further assessment, follow-up, or referral.
When treatment is recommended, information must be provided concerning the frequency, estimated duration, and type of service (e.g., individual, group, home programme) required. Documentation must include a record of compliance with federal and state laws and regulations for hearing aid fitting and/or dispensing. Documentation should include the decisions regarding the hearing aid(s) made by consensus among the audiologist, patient, and family/caregivers. Decisions that were not made by consensus should also be documented. Documentation should include providing information to the patient regarding the benefits and limitations from telecoil use and the potential interference problems found with telecoils and wireless phones.

5. Audiological Management of the Cochlear Implant Patient

a) Expected Outcome(s)
Presurgical diagnostic audiological services and counseling assist the surgeon and patient in determining the potential benefit from a cochlear implant. Psychophysical and/or electrophysiological testing and monitoring optimize the speech processor mapping. The cochlear implant improves the ability to understand speech.

b) Clinical Indications
Individuals for whom conventional amplification is not sufficient or appropriate for function in daily activities. Determination of candidacy for a cochlear implant is based on current Standard Operating Policy of Cochlear Implant Ministry of Health and/or other institutional policies.

c) Clinical Process
Determination of candidacy includes the following:
• a multidisciplinary team of professionals
• advanced audiological assessment
• electrophysiological and vestibular tests, if necessary
• assessment of benefit from conventional amplification
• administration of communications inventories or questionnaires
• counseling of the patient and family/caregivers regarding the benefits and limitations of a cochlear implant
• medical evaluation
• referral to other professionals as indicated

Procedures after surgery include the following:
• fitting of equipment (speech processor, headset, and appropriate cables)
• speech processor mapping using age-appropriate methods
• electrophysiological testing to aid in speech processor mapping (e.g., neural response telemetry, neural response imaging, electrical auditory brainstem response)
• evaluation of the patient's ability to detect speech-related sounds and/or understand speech
• counseling for patient and family/caregivers regarding the speech processor and its accessories and review of expectations for performance based on patient's age, auditory skill level, and additional factors that may influence outcome
• subsequent, regularly scheduled follow-up visits to ensure appropriateness of speech processor map(s) and integrity of the cochlear implant
• referral to implant surgeon if concerns arise regarding the patient's medical status or if integrity testing reveals failure of the internal device
• referral to and consultation with other professionals, as needed
d) Others Who May Perform the Procedure(s)
Only certified audiologist may conduct selected assessment procedures.

e) Setting/Equipment Specifications
Instrumentation and test environments are available for sound field testing. Hardware and software required for fitting and assessment of cochlear implants are available. All procedures ensure the safety of the patient, audiologist, and others who participate in the clinical process and adhere to the standard precautions (e.g., prevention of bodily injury and transmission of infectious disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer’s instructions.

f) Documentation
Documentation must contain pertinent background information; cochlear implant candidacy assessment results; decisions made regarding device to be implanted, ear to be implanted, and make and model of the speech processor; summary of mapping sessions; documentation that device warranty information has been provided to the patient; and information regarding referrals and recommendations.

6. Treatment and Management of (Central) Auditory Processing Disorders
a) Expected Outcome(s)
Comprehensive treatment and management plans are implemented to improve auditory processing, listening, spoken language processing, and the overall communication process. Improvements in auditory processing and listening may enhance communication, learning, and participation in daily activities.

b) Clinical Indications
Individuals of all ages whose auditory processing abilities are documented to be impaired or compromised on the basis of the results of a central auditory processing evaluation are candidates for treatment and management. Treatment is recommended when there is a reasonable likelihood of improving auditory processing.

c) Clinical Process
Intervention is based on the patient’s complaints, symptoms, history, central auditory processing evaluation, and functional performance deficits. Treatment may be conducted in an intradisciplinary (audiology and speech-language pathology) and interdisciplinary (e.g., neuropsychology, neurology, education) manner.

Treatment should include one or more of the following:
- auditory training and stimulation with appropriate duration and frequency:
  - formal procedures are conducted in a clinical setting
  - informal approaches do not require sophisticated equipment or settings
- communication and/or educational strategies
- metalinguistic and metacognitive skills and strategies
- hearing assistive technology systems
- acoustics enhancement and environmental modification of the listening environment
- outcome measurements obtained and reviewed periodically to help direct the course of treatment and ascertain efficacy of treatment
- criteria for discharge and a description of outcome goals
- training tasks to maintain motivation and provide for success
- counseling families regarding treatment and their role in this process
d) **Others Who May Perform the Procedure(s)**
Support personnel may assist selected assessment procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals or recommendations.

e) **Setting/Equipment Specifications**
Treatment must be conducted in an appropriate environment. This can be a home or school environment for certain activities, whereas the audiology clinic may be necessary for more technical therapies. Auditory training requires appropriate instrumentation and materials (e.g., computer software).

f) **Safety and Health Precautions**
All procedures ensure the safety of the patient and clinician and adhere to standard precautions (e.g., prevention of bodily injury and transmission of infectious disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer’s instructions.

g) **Documentation**
Documentation includes pertinent background information, treatment goals, frequency and estimated duration of treatment, delineation of specific treatment approaches, contributions of professionals and family members collaborating in treatment programme, outcome measurements, prognosis, and specific recommendations, which may include the need for follow-up or referral to address related deficits.

7. **Treatment and Management of Vestibular and Balance**
Management of balance and vestibular disorders is often a multidisciplinary endeavour. Management may include medical, surgical, rehabilitative, or a combination of these approaches. Depending on the etiology of the patient’s vestibular disorder and/or underlying cause(s) of balance symptoms, a variety of medical and surgical options may be recommended by appropriate medical professional(s). Medications may be provided to suppress the vestibular symptoms or to treat the underlying pathology (e.g., migraine, multiple sclerosis). Dietary and/or lifestyle changes may be recommended. Surgical intervention may be considered in specific cases (e.g., excision of vestibular schwannoma, repair of superior semicircular canal dehiscence or perilymph fistula).

a) **Expected Outcome(s)**
Results of the balance system assessment are interpreted, and the evaluation may assist in making recommendations for vestibular and balance rehabilitation therapy, reduction in falls risk, and possible referral for medical evaluation.

b) **Clinical Indications**
Vestibular or balance system treatment is indicated when a patient presents with nystagmus, complaints of vertigo, balance dysfunction, or gait abnormalities, or when peripheral or central vestibulopathy is suspected.

c) **Clinical Process**
Intervention is based on the patient’s complaints, symptoms, history, central auditory processing evaluation, and functional performance deficits. Treatment may be conducted in an interdisciplinary manner (occupational therapist, physiotherapist, neurologist).
Goals of vestibular rehabilitation include
- promoting the compensation process of the central vestibular system,
- reducing the patient's sensitivity to symptom-provoking movements or visual motion,
- reducing fall risk by improving static/dynamic balance and gait, and
- maintaining the compensation process.

Treatment should include one or more of the following
- Adaptation/Gaze Stabilization Exercises
- Habituation Exercises
- Substitution Exercises
- Balance, Strength, And Conditioning Exercises
- Functional Activities
- Canalith Repositioning Procedures (CRP)
- Posterior Semicircular Canal BPPV Management Maneuvers
- Lateral Semicircular Canal BPPV Management Maneuvers
- Anterior Semicircular Canal BPPV Management Maneuvers
- Counseling and Patient Education

d) Others Who May Perform the Procedure(s)
Support personnel may assist selected assessment procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals or recommendations.

e) Setting/Equipment Specifications
Treatment must be conducted in an appropriate environment. This can be a home or school environment for certain activities, whereas the audiology clinic may be necessary for more technical therapies.

f) Safety and Health Precautions
All procedures ensure the safety of the patient and clinician and adhere to standard precautions (e.g., prevention of bodily injury and transmission of infectious disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer's instructions.

g) Documentation
Documentation includes pertinent background information, treatment goals, frequency and estimated duration of treatment, delineation of specific treatment approaches, contributions of professionals and family members collaborating in treatment programme, outcome measurements, prognosis, and specific recommendations, which may include the need for follow-up or referral to address related deficits.

8. Tinnitus Management and Rehabilitation
a) Expected Outcome(s)
Tinnitus management most likely to succeed when multidisciplinary approach is employed. At this time there is no cure for most cases of tinnitus, but it is not true that "there is nothing that can be done about it". There are number of treatment approaches that can be performed by audiologists have been described with various degrees of reported success.
b) **Clinical Indications**

Tinnitus management is indicated for individuals who have complaints of tinnitus with or without psychological distress, and whose tinnitus cannot be resolved through medical intervention. This is to guide the patients in managing negative cognitive perception, and physical reactions to tinnitus in order to improve patient's well-being and quality of life.

c) **Clinical Process**

The management is based on the patient’s complaints, background history, audiologic evaluation, and self-assessment. Involvement of family/caregivers is necessary. The goal of treatment is to facilitate in tinnitus habituation and perception.

Treatment may be conducted in an interdisciplinary manner (clinical psychologist, counsellor).

Tinnitus management may include one or more of the following:

- **Counseling** - should be considered both as a primary approach, when appropriate, and as an adjunctive approach, to all treatment strategies. Counseling consists of gathering data through careful listening, making adjustments in one's strategies based on that knowledge, and conveying information.

- **Hearing Aids & Tinnitus Instruments** - For individuals with hearing loss, environmental sounds may be inadequate in themselves to afford relief. However, amplifying them with the assistance of hearing aids may provide enough background stimuli to give tinnitus relief, while simultaneously enhancing the individual's listening and communication abilities. If hearing aids alone are inadequate, tinnitus instruments may be of help.

- **Maskers & Home Masking Devices** - Maskers are used to cover-up the tinnitus perception with a competitive signal that either partially or completely competes with or conceals the tinnitus. This can be achieved by a number of methods, ranging from environmental masking to ear-level worn sound generators. Also, there are commercially available recordings of a wide range of sounds that can provide complete or partial masking. In addition to their masking effect, these sounds may assist in relaxation.

- **Self-help and Support/Education Groups** - Some people find help, stay informed on the latest information, and share treatment experiences by talking to others with similar problems. These groups should be facilitated, or at least attended, by an audiologist or a psychologist (to prevent misinformation from being conveyed) and may include lectures from a variety of related disciplines.

- **Cognitive Behavioral Therapy** - One type of counseling that may be successful in helping people cope with tinnitus is cognitive behavioral modification therapy. This approach can help persons identify the way they react to their tinnitus and learn new responses, thereby minimizing the negative thoughts and behavior patterns that are associated with tinnitus.

- **Habituation & Tinnitus Retraining Therapy** - Tinnitus Retraining Therapy is a method developed to facilitate habituation to tinnitus. It combines sound enrichment therapy with directive counseling. Sound is employed to reduce the contrast between silence or ambient noise and the perception of the tinnitus. It may be in the form of environmental sounds, amplification, or broadband sound generating devices. A reduction of the perception of the tinnitus (but not complete obliteration of it) is considered essential to the process of habituation.
Counseling and education serve to demystify tinnitus, providing the patient with an intellectual and emotional framework in which habituation can occur.

- Outcome measurements obtained and reviewed periodically to help direct the course of treatment and ascertain efficacy of treatment
- Counseling families regarding treatment and their role in this process
- Referral to other professionals

d) Others Who May Perform the Procedure(s)
Only certified audiologist may conduct selected assessment procedures.

e) Setting/Equipment Specifications
Tinnitus management is conducted in a setting that includes the equipment and surroundings for audiologic evaluation, patient and family/caregiver counseling, and fitting of tinnitus maskers, sound generators, and/or hearing aids.

f) Safety and Health Precautions
All procedures ensure the safety of the patient and clinician and adhere to standard precautions (e.g., prevention of bodily injury and transmission of infectious disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer’s instructions.

g) Documentation
Documentation contains pertinent background information, devices used, treatment goals, results, prognosis, and specific recommendations. Recommendations may address the need for further assessment, follow-up, or referral. When additional treatment is recommended, information should be provided concerning the frequency, estimated duration, and type of service.

D. HEARING CONSERVATION
Prevention of hearing loss and conservation of normal hearing function by designing, implementing and coordinating occupational, school, and community hearing loss prevention and hazardous sound awareness programmes.

1. Occupational Hearing Loss Prevention and Conservation

a) Expected Outcome(s)
Hearing conservation programmes (HCPs) are designed to reduce or prevent occupational noise-induced hearing loss.

b) Clinical Indications
HCPs are indicated when employees are considered at risk for occupational noise induced hearing loss. Individuals who are not included in hearing conservation programmes but are exposed to noise in their occupation or place of work (e.g., farmers or contractors) may require an individualized programme. Individuals who are at increased risk due to exposure to potentially toxic agents, illness, or other comorbid factors may require an individualized programme. Implementation of HCPs may be mandated by government regulations.

c) Clinical Process
Prevention of hearing loss and conservation of hearing function are accomplished through planning and implementing HCPs.
As HCP programme managers or consultants, audiologists may provide services in the following areas:

- noise exposure assessment and monitoring
- applying principles of noise control
- hazardous noise identification
- engineering and administrative controls of noise exposure
- audiometric testing, audiogram review, determination of standard threshold shift, and referral
- Recommended test frequencies are from 250 Hz to 18,000 Hz including inter-octave frequencies.
- Diagnostic OAE with extended frequencies
- fitting, dispensing, and verification of attenuation of personal hearing protection devices appropriate for a worker's noise exposure as well as training in their use
- employee and manager hearing health education and motivation
- record keeping and documentation of noise exposure measurement and hearing evaluations
- training and supervision of occupational hearing conservation technicians
- development of criteria for disposition and referral of employees for whom follow-up is required

**d) Others Who May Perform the Procedure(s)**
Support personnel may assist selected assessment procedures under the supervision of a certified audiologist but may not interpret the clinical results or provide referrals or recommendations.

**e) Setting/Equipment Specifications**
Equipment specifications and test setting must meet government regulations (Factory & Machinery Act (Noise Regulations), 1989). Assessments are conducted in a clinical environment with calibrated acoustic stimuli (e.g., pure tones, broadband noise, speech stimuli) conducive to obtaining reliable and valid results. Testing environment should meet the standards for permissible ambient noise levels.

**f) Safety and Health Precautions**
All procedures ensure the safety of the patient and clinician and adhere to standard health precautions (e.g., prevention of bodily injury and transmission of infectious disease). Decontamination, cleaning, disinfection, and sterilization of multiple-use equipment before reuse are carried out according to facility-specific infection control policies and procedures and according to manufacturer’s instructions.

**g) Documentation**
Documentation includes written plans, reports of services rendered, findings, and recommendations. Records are maintained in accordance with the clinical process and federal and state regulations.
### IV. Specialisation

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<th>Specialisation</th>
<th>Description</th>
<th>Additional Requirements</th>
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| **Paediatric Audiology**     | - Assessment and management of infants and paediatric population. This covers the special needs population as well as complex paediatric cases. In-depth and evidence based assessment, treatment and (re)habilitation methods which covers best practices in the provision of paediatric care.  
- This covers:  
  1. Laws and regulation  
  2. General knowledge about hearing and hearing loss.  
  3. Child development.  
  4. Screening and assessment procedures.  
  5. Counseling  
  6. Communication enhancement techniques.  
  7. (Re)habilitation strategies  
  8. Educational support  
  - Co-manage/liase with respective experts:  
  Pediatrics with hearing and balance disorders  
  Pediatrics with Auditory Processing Disorder  
  - Assessment for candidacy of hearing devices or implants.  
  - (Re)habilitation  
  - Managing hearing loss which accompanies multiple disabilities. For example syndromic population, multiple handicapped/disabled, Attention Deficit Disorder (ADD), autism spectrum disorders, Global Developmental Delay (GDD)  
  - Provide individualised treatment for children with hearing and/or balance disorder. This covers parent education and information pertaining to hearing devices and implants.  
  - Aural (re)habilitation for children with hearing disorders.  
  - To support the network of ORL specialist, pediatrician and other health care professionals  
  - Responsible for running occasional education sessions on pediatric audiology treatments for both public and health care professionals, | 1. Master research interest in Paediatric Audiology  
OR  
PhD research interest in Paediatric Audiology  
AND  
2. Attending short course/attachment (local/oversea) in Paediatric Audiology  
OR  
Attending certification training at any local accredited universities  
OR  
Clinical attachment under relevant professionals (overseas or local) at accredited hospitals or universities  
3. Professionals must maintain the certification if indicated by the institute (subject to periodic renewal if necessary) |
- To contribute to the field in pediatric audiology and other related hearing disorders through outcome reporting, participation in studies and showing initiative in treatment development.
- Evidence of an ability to interpret and explain contemporary tinnitus research to lay and professional audiences.
- Developing and using outcome measures, as appropriate, to measure the efficacy of any intervention provided.
- Providing training to audiologists in the specialty area of paediatric audiology services.

<table>
<thead>
<tr>
<th>Geriatric Audiology</th>
<th>Assessment and management of hearing in the elderly population, usually aged 60 and above</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Has substantial knowledge on the aging process and the complex interactions of multiple coexisting conditions on the hearing and balance system of the elderly individual.</td>
</tr>
<tr>
<td></td>
<td>The areas of knowledge that must be covered includes:-</td>
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<tr>
<td></td>
<td>Biological aspects of aging</td>
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<td></td>
<td>Medical concerns with aging</td>
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<td></td>
<td>Psychology of aging</td>
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<tr>
<td></td>
<td>Social and cultural aspect of aging</td>
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<tr>
<td></td>
<td>Current issues in aging</td>
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<td></td>
<td>Communication and counselling with family members / caretakers to enhance outcomes</td>
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<tr>
<td></td>
<td>Is able to conduct advance tests to accurately assess the hearing levels of the elderly patient who may have difficulty in understanding/ communicating; other cognitive deficits like dementia, Parkinson’s etc.</td>
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<td></td>
<td>Is able to suggest appropriate rehabilitative management including suitable hearing aids or other communication devices which specifically fits the elderly patients needs, taking into account limitations that may be present physically or cognitively</td>
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<tr>
<td></td>
<td>Has the needed resources to holistically manage the elderly patient with a multi-disciplinary team</td>
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<tr>
<td></td>
<td>Co-manage/liase with respective experts</td>
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<tr>
<td></td>
<td>Geriatrics with hearing and balance disorders</td>
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<tr>
<td></td>
<td>Geriatrics with Auditory Processing Disorder</td>
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<td></td>
<td>Geriatrics with Tinnitus</td>
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<tr>
<td></td>
<td>To support the network of ORL specialist, geriatrician and other health care professionals</td>
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<tr>
<td></td>
<td>Responsible for running occasional education sessions on geriatric audiology treatments for both public and health care professionals,</td>
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<tr>
<td></td>
<td>To contribute to the field in geriatric audiology and other related hearing disorders through outcome</td>
</tr>
</tbody>
</table>

1. AuD with Specialization in Geriatric Audiology OR Master research interest in Geriatric Audiology OR PhD research interest in Geriatric Audiology

2. Attending short course/attachment (local/oversea) in Geriatric Audiology OR Attending certification training at any local accredited universities OR Clinical attachment under relevant professionals (overseas or local) at
reporting, participation in studies and showing initiative in treatment development.

- Evidence of an ability to interpret and explain contemporary geriatric research research to lay and professional audiences
- Developing and using outcome measures, as appropriate, to measure the efficacy of any intervention provided.
- Providing training to audiologists in the specialty area of geriatric audiology services

Tinnitus assessment and management

- Utilizing various patient-report tools to determine functional impact of tinnitus and/or hyperacusis
- Responsible for all technical work within the caseload which will include hearing assessments, middle ear function tests and hearing aid services to all adult patients,
- To deliver treatments including tinnitus retraining therapy, sound therapy, cognitive behavioural therapy, other related psychological treatment and other medical devices and treatments in line with best practise guidelines,
- Counseling patients and families/caregivers to enhance their understanding, acceptance and adjustment to tinnitus and/or hyperacusis,
- Consulting on the design of an individualized tinnitus management programme
- Co-manage/liase with respective experts;
  - Patients with hearing and balance disorders
  - Patients with Auditory Processing Disorder
- Making referrals as appropriate.
- To support the network of ORL specialist, Mental health professional and other health care professionals
- Developing and using outcome measures, as appropriate, to measure the efficacy of any intervention provided.
- Advocating for individuals with tinnitus and/or hyperacusis at the local, state, and national levels
- Remaining informed of research in the areas of tinnitus and hyperacusis as related to the audiologist's contribution to patient management,
- Educating other professionals about the role of audiologists in tinnitus and/or hyperacusis management,
- Responsible for running occasional education sessions on tinnitus and adult audiology treatments for both public and health care professionals,
- To contribute to the field in tinnitus, hyperacusis and other related hearing disorders through outcome reporting, participation in studies and showing initiative in treatment development.
- Evidence of an ability to interpret and explain contemporary tinnitus research to lay and professional audiences

3. Professionals must maintain the certification if indicated by the institute (subject to periodic renewal if necessary)

1. Master research interest in tinnitus or hyperacusis
   - OR
   - PhD research interest in tinnitus or hyperacusis
   - AND
2. Attending short course/attachment (local/oversea) in tinnitus assessment and management but not limited to:
   - Cognitive Behaviour Therapy (minimum 50 hours supervision)
   - Tinnitus retraining therapy
   - Advanced counselling skills certificate or equivalent / higher
   - OR
3. Attending certification training at any local accredited universities
<table>
<thead>
<tr>
<th>Neuroaudiology</th>
<th>OR</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Getting sufficient information on the patients’ condition by means of</td>
<td>Clinical attachment under relevant</td>
<td></td>
</tr>
<tr>
<td>thorough history taking and specific auditory processing disorder (APD)</td>
<td>professionals (overseas or local) at</td>
<td></td>
</tr>
<tr>
<td>questionnaires</td>
<td>accredited hospitals or universities</td>
<td></td>
</tr>
<tr>
<td>• Assessing children and adults with APD using the current advanced</td>
<td>2. Professionals must maintain</td>
<td></td>
</tr>
<tr>
<td>behavioural and auditory electrophysiological tests</td>
<td>the certification if indicated by the institute (subject to periodic</td>
<td></td>
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<tr>
<td>• Achieving accurate diagnoses in the site of lesion testing by utilizing</td>
<td>renewal if necessary)</td>
<td></td>
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<tr>
<td>specific neuroaudiological tests</td>
<td></td>
<td></td>
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<tr>
<td>• Managing children and adults with APD using specialized auditory</td>
<td></td>
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<tr>
<td>interventions (e.g. auditory training, the use of FM system etc.) and</td>
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<tr>
<td>non-auditory management (e.g. environmental modifications,</td>
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<td>compensatory techniques etc.)</td>
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<tr>
<td>• Involved in the intra-operative procedure for auditory related cases</td>
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<tr>
<td>using auditory electrophysiological tests (e.g. electrocochleography and</td>
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<tr>
<td>auditory brainstem response) (for auditory nerve monitoring) and</td>
<td></td>
<td></td>
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<tr>
<td>electroneuronography (for facial nerve monitoring)</td>
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<td></td>
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<tr>
<td>• Working collaboratively with other clinical professionals including</td>
<td></td>
<td></td>
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<tr>
<td>Neurologists, Neurosurgeons, Otorhinolaryngologists, Pediatricians,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupational Therapists and Speech Therapists in managing</td>
<td></td>
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<tr>
<td>neuroaudiological cases</td>
<td></td>
<td></td>
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<tr>
<td>• Working collaboratively with other professionals (e.g. researchers) in</td>
<td></td>
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<tr>
<td>expanding the neuroaudiological field</td>
<td></td>
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<tr>
<td>• Updating knowledge and clinical skills from time to time to improve the</td>
<td></td>
<td></td>
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<tr>
<td>quality of service</td>
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<tr>
<td>• To support the network of ORL specialist and other health care</td>
<td></td>
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<tr>
<td>professionals</td>
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<tr>
<td>• Responsible for running occasional education sessions on neuroaudiology</td>
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<tr>
<td>for both public and health care professionals,</td>
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<tr>
<td>• To contribute to the field in neuroaudiology and other related hearing</td>
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<tr>
<td>disorders through outcome reporting, participation in studies and</td>
<td></td>
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<tr>
<td>showing initiative in treatment development.</td>
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<tr>
<td>• Evidence of an ability to interpret and explain contemporary neuroaudiology</td>
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<tr>
<td>research to lay and professional audiences</td>
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</tr>
</tbody>
</table>

1. Postgraduate Diploma in Neuroaudiology OR Masters research interest in Neuroaudiology OR PhD research interest in Neuroaudiology AND
2. Attending short course/attachment (local/oversea) in Neuroaudiology OR Attending certification training at any local accredited universities OR Clinical attachment under relevant
| Vestibular and Balance | Developing and using outcome measures, as appropriate, to measure the efficacy of any intervention provided.  
Providing training to audiologists in the specialty area of neuroaudiology services | Administering and appropriately altering vestibular test protocols for diagnostic and rehabilitative assessment of dizziness and/or balance disorders (e.g., videonystagmography [VNG]/electronystagmography [ENG] test batteries, rotary chair testing, posturography, video head impulse testing [vHIT], and vestibular-evoked myogenic potentials [VEMPs]).  
Utilizing various patient-report tools to determine functional impact of dizziness and/or balance disorders.  
Supervising support personnel conducting vestibular and balance assessment procedures.  
Maintaining knowledge of procedures necessary to distinguish among posterior, lateral, and anterior semicircular canal BPPV and to distinguish between canalithiasis and cupulolithiasis.  
Maintaining familiarity with and understanding of specific and advance management options for dizziness and balance disorders (e.g., medical, surgical).  
Determining patient candidacy for vestibular and balance rehabilitation based on integration of information from patient history, test results, functional assessment, and collaboration with other professionals.  
Maintaining knowledge of and familiarity with general medical conditions in order to assess their impact on or contraindication of the assessment and management of balance disorders.  
Performing canalith repositioning procedures (CRP) on patients with BPPV of posterior, lateral, or anterior semicircular canal origin.  
Ensure patient comfort and safety during all aspects of balance assessment and management.  
Making referrals as appropriate.  
Consulting on the design of an individualized vestibular rehabilitation programme.  
Participating in multidisciplinary team consultation for assessment and management of patients with dizziness and/or balance disorders.  
Able to tailor specific assessment and rehabilitation for paediatric and adult population.  
Developing and using outcome measures to determine efficacy of vestibular rehabilitation provided (e.g., CRP). |
|---|---|---|
| | 1. Master research interest in vestibular and balance  
OR  
PhD research interest in vestibular and balance  
AND  
2. Attending short course/attachment (local/oversea) in vestibular and balance  
OR  
Attending certification training at any local accredited universities  
OR  
Clinical attachment under relevant professionals (overseas or local) at accredited hospitals or universities  
3. Professionals must maintain the certification if indicated by the institute (subject to periodic renewal if necessary) |
- To support the network of ORL specialist and other health care professionals
- Responsible for running occasional education sessions on vestibular and balance treatments for both public and health care professionals,
- To contribute to the field in vestibular and balance and other related hearing disorders through outcome reporting, participation in studies and showing initiative in treatment development.
- Evidence of an ability to interpret and explain contemporary vestibular and balance research to lay and professional audiences
- Developing and using outcome measures, as appropriate, to measure the efficacy of any intervention provided.
- Providing training to audiologists in the specialty area of vestibular and balance services

**Occupational & Preventive Audiology**

- Conservation of hearing, such as (i) environmental noise control, and (ii) identification audiometry (school, military, industry); and instrumentation, such as (i) electronics, (ii) calibration techniques, and (iii) characteristics of amplifying systems.
- Training on auditory and non-auditory effects of noise on humans, including damage risk criteria and effects on communication and job performance.
- Noise measurement instrumentation and techniques for conducting noise surveys
- Assesses the regulatory compliance and effectiveness of the HCP through on-site audits of programme activities and statistical analyses of audiometric databases.
- Expert witness testimony and forensic consultation, analysis of programme effectiveness
- Audiologists may provide occupational and environmental hearing conservation services in collaboration with other professionals (e.g., industrial hygienists, occupational nurses, physicians, and environmental, safety, and acoustical engineers).
- To support the network of ORL specialist and other health care professionals
- Responsible for running occasional education sessions on occupational and preventive audiology treatments for both public and health care professionals,
- To contribute to the field in occupational and preventive audiology and other related hearing disorders through outcome reporting, participation in studies and showing initiative in treatment development.
- Evidence of an ability to interpret and explain contemporary occupational and preventive audiology research to lay and professional audiences
- Developing and using outcome measures, as appropriate, to measure the efficacy of any intervention provided.
- Providing training to audiologists in the specialty area of occupational and preventive audiology

1. Certified Hearing Conservation Audiologist
   - OR
   Master research interest in prevention of noise induced hearing loss
   - OR
   PhD research interest in prevention of noise induced hearing loss

Which includes:
- Attend course (hours?)
- Pass exam
- Noise project
- Pass interview

AND
| Services                                                                 | 2. Attending short course/attachment (local/oversea) in prevention of noise induced hearing loss  
<table>
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<tbody>
<tr>
<td>------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 2. Attending short course/attachment (local/oversea) in prevention of noise induced hearing loss  
OR  
Attending certification training at any local accredited universities  
OR  
Clinical attachment under relevant professionals (overseas or local) at accredited hospitals or universities  
3. Professionals must maintain the certification if indicated by the institute (subject to periodic renewal if necessary) | 1. Master research interest in rehabilitative audiology  
OR  
PhD research interest in rehabilitative audiology  
AND  
2. Attending short course/attachment (local/oversea) in rehabilitative audiology  
OR  
Attending certification training at any local accredited universities  
OR  
Clinical attachment under relevant professionals (overseas or local) at accredited hospitals or universities  
3. Professionals must maintain the certification if indicated by the institute (subject to periodic renewal if necessary) |

### Rehabilitative Audiology

- **Assessment of communication needs**
- **Applying amplification strategies** – hearing aids, ALDs, implants
- **Outcome measures and evaluation** - auditory-verbal communication sufficient to participate effectively in most mainstream environments.
- **Multidisciplinary management** - collaboration with psychologist, speech-language therapist, counsellors, education personnel and medical professionals.
- **To support the network of ORL specialist and other health care professionals**
- **Responsible for running occasional education sessions on rehabilitative audiology for both public and health care professionals,**
- **To contribute to the field in rehabilitative audiology and other related hearing disorders through outcome reporting, participation in studies and showing initiative in treatment development.**
- **Evidence of an ability to interpret and explain contemporary rehabilitative audiology research to lay and professional audiences**
- **Developing and using outcome measures, as appropriate, to measure the efficacy of any intervention**
| Hearing Implant | Provided.  
|-----------------|---------------------------------|---------------------------------|
|                 | • Providing training to audiologists in the specialty area of rehabilitative audiology services | Attending certification training at any local accredited universities OR Clinical attachment under relevant professionals (overseas or local) at accredited hospitals or universities  
|                 | • Attending certification training at any local accredited universities OR Clinical attachment under relevant professionals (overseas or local) at accredited hospitals or universities  
|                 | 3. Professionals must maintain the certification if indicated by the institute (subject to periodic renewal if necessary) |  
|                 | 1. Cochlear Implant Specialty Certification (CISC) by American Board of Audiology OR Master research interest in hearing implant OR PhD research interest in hearing implant AND  
|                 | 2. Attending short course/attachment (local/oversea) in hearing implant OR Attending certification training at |  
|                 |  
|                 | • Specialising in management of hearing implant cases from candidacy to (re)habilitation process. |  
|                 | • As part of a team to determine candidacy for hearing implant  
|                 | • Have in-depth knowledge in different implants from different technologies  
|                 | • Specialised assessment of pre-surgical audiological assessment such as transtympanic eABR  
|                 | • Counselling to assist the surgeon and patient in determining the potential benefit from a specific types of hearing implant. |  
|                 | • Intra-operative hearing implant assessment and assisting surgeon in-regards to audiological aspect of implant |  
|                 | • Psychophysical and/or electrophysiological testing and monitoring to optimise the fine-tuning/mapping to achieve maximum performance with the hearing implant. |  
|                 | • Post-surgical switch-on/loading/fitting and fine-tuning/mapping of external device using age-appropriate methods |  
|                 | • Specialised post-surgical evaluation of the patient's ability to detect speech-related sounds and/or understand speech as well as objective audiological assessment to monitor outcome and aid in fine-tuning/mapping |  
|                 | • Continuous consultation with Neuro Audiologist, Pediatric Audiologist, Rehabilitation Audiologists and Speech-Language Pathologists or related professionals to improves the ability of implantees to understand speech and facilitate expressive speech-language learning (especially for paediatrics patient) as well as basic ability to hear sounds in the environment including warning/danger signals. |  
|                 | • Suggestions for assistive listening system/device selection, alerting systems/device selection, product dispensing and/or sensory aids assessment as and when necessary. |  
|                 | | |
| **Educational Audiology** | **Masters in Special Education (major in Deaf Studies)**  
**OR**  
**Masters in Human Communication Disorder**  
**OR**  
**PhD research interest in special education (deaf studies)**  
**AND**  
2. **Attending short course/attachment (local/oversea) in special education (deaf studies)**  
**OR**  
**Attending certification training at any local accredited universities** |
|-------------------------------------------------|-------------------------------------------------------------|
| • Educational Audiologists are professionals who work with students with hearing impairments. Below are the description of their roles:  
• Identify children with hearing loss. Conduct audiological evaluations for students with hearing problems.  
• Recommend and institute programmes for students for auditory rehabilitation.  
• Develop methods of treatment and apply those treatments with the goal of facilitating the student’s ability to learn.  
• Determination of children’s needs for group and/or individual amplification, and selecting and fitting appropriate amplification. Fit hearing aids for students and offering counseling to the student and his family.  
• Provision of habilitative activities, such as language habilitation, auditory training, speechreading, hearing evaluation and speech conservation.  
• Teach the student and family members methods of communication and listening skills like sign language and lip reading.  
• A key member of a multi-professional team offering support service for deaf children.  
• Conduct educational assessment, advice to schools, access of a student to learning and inclusion.  
• Work with health services in the process of identifying the needs of deaf children. Provide a critical link within the Early Hearing Detection and Intervention (EHDI) process.  
• Provide advice on classroom management, amplification systems, acoustics and Radio Aid systems. Give advice on the appropriate use of Radio Aid systems and Soundfield systems to enhance the access to learning experience for deaf children and young people.  
• Provide in-service training for educational and health service staff relating to the implications of |
deafness in children.

- Provide advice and training to schools on the implications of deafness, effective habilitation management for inclusion and general deaf awareness issues within the school environment.
- Make recommendations for improving the acoustics of the listening environment in schools, including acoustic treatment to enhance the access to learning experience for deaf children and young people.
- Professional contribution to the multi-professional team. Working as part of a team within a school, deaf, hearing-impaired or sensory support service.
- Liaise with health services to assist the processes that deaf children are appropriately and speedily provided with audiological and educational support.
- Assess, evaluate and monitor deaf children within the clinic setting using a full range of tests.
- Assess and evaluate deaf children's functional use of hearing within the school environment and provide information and advice to schools and Teachers of the Deaf with regard to assessment results.
- To give recommendations for the management of the child’s educational provision to enhance optimum access for learning.
- The selection, verification and evaluation of digital hearing aid/hearing instrument provision for deaf children.
- To support the network of ORL specialist and other health care professionals.
- Responsible for running occasional education sessions on educational audiology for both public and health care professionals.
- To contribute to the field in educational audiology and other related hearing disorders through outcome reporting, participation in studies and showing initiative in treatment development.
- Evidence of an ability to interpret and explain contemporary educational audiology research to lay and professional audiences.
- Developing and using outcome measures, as appropriate, to measure the efficacy of any intervention provided.
- Providing training to audiologists in the specialty area of educational audiology services.

OR

Clinical attachment under relevant professionals (overseas or local) at accredited hospitals or universities

3. Professionals must maintain the certification if indicated by the institute (subject to periodic renewal if necessary)

4. Recommended areas of training in:
   - Complex cases (children with other special needs)
   - Auditory Processing Disorders
   - Cochlear Implants and Amplification Options
   - Related Laws and Regulations for OKU/Special Needs
   - Assistive Listening Devices and Room Acoustics
   - Individualized Education Programme for Deaf Children / Individual Family Service Plan
V. Standard Curriculum

Audiology is the branch of science that studies hearing, vestibular, balance and related disorders. The study of audiology incorporates anatomy, physiology, acoustics, linguistics, speech and language development, counselling, communication disorders, assessments, intervention and management for these disorders.

Audiologists employ various testing strategies such as hearing assessments, balance tests and electrophysiological tests with aims to determine whether someone can hear within the normal range, and if not, to describe the type of hearing loss, to what degree and also to detect any related disorders. This includes patients of all ages from newborns to the elderly. If an audiologist determines that a hearing loss or vestibular abnormality is present, he or she will provide recommendations to the patient as to what measures can be taken to assist them. An audiologist also counsels on the prescription of hearing aids, cochlear implants, rehabilitation tools and also appropriate medical referrals. Audiologists are also responsible in managing hearing screening programmes, hearing conservation programmes and hearing awareness campaigns.

This document describes the different levels of standards leading to the award of individual qualifications, namely diploma (MQF Level 4), Bachelors (MQF Level 6), Masters (MQF Level 7) and Doctorate (MQF Level 8). These standards are designed to encourage diversity of approach within a framework that is compatible with the national and global human resource requirements and the socio-economic needs. They cannot be seen as a syllabus and no form of prescription is intended in the amount of time devoted to each component or the order in which the material is presented. Higher education providers (HEPs) are expected to combine, teach and assess the subject matter creatively. The Programme Standards provides an inventory of content; delivery and assessment of programmes, thus enabling identification of vital components of qualifications from diploma to doctoral awards.

As the Programme Standards should be viewed as benchmark statements, HEPs are encouraged to go beyond the basic minimum. This document is also intended to be valuable to potential students, their parents and guardians, employers, professional and regulatory bodies, universities, colleges and schools.

The development and implementation of this Programme Standards is to ensure that the graduates produced would meet the professional requirements and expectations in their respective fields. Graduates may enter employment in the following areas:

1. hospitals and healthcare facilities
2. community and health services
3. health protection agencies
4. diagnostic, clinical and research laboratories
5. commerce (sales and marketing) related to healthcare and diagnostic products
6. educational institutions
7. industrial sectors
8. self-employment
9. research institutions
It should also be emphasized that medical and health sciences play a pivotal and essential role in healthcare. Most of the component subjects are at the forefront of science and therefore attract leading-edge research activities. HEPs must take cognizance of the rapidly evolving fields and introduce effective and sustainable programme improvement.

As the purpose of this Programme Standards is to provide guidelines in relation to the development and conduct of programmes in the identified fields, it is paramount that this document be read with other quality assurance documents and policies by the Malaysian Qualifications Agency and related agencies. These include but are not limited to the Malaysian Qualifications Framework, The Code of Practice for Programme Accreditation, The Code of Practice for Institutional Audit and guidelines to good practices.

**Learning Outcomes**

At the end of the programme, graduates should be able to:

1. demonstrate fundamental and advanced knowledge in audiological sciences;
2. integrate their theoretical knowledge and clinical practice in assessment, interpretation, management, and rehabilitation aspects of hearing, vestibular, balance and related disorders;
3. conduct accurate, organised and problem focused intervention plans using appropriate techniques and judgments;
4. perform appropriate and accurate audiological examination and evaluations using evidence based practice;
5. integrate case history, clinical observation and audiological evaluation to arrive to a diagnosis;
6. formulate a management plan in concert with the patient and caregivers and execute appropriately;
7. practice in a manner that promotes well-being and safety;
8. display good problem solving, decision making, clinical reasoning and reflection skills;
9. demonstrate sensitivities and responsibilities towards the community, culture, religion and environment;
10. adhere to the legal, ethical principles and the professional code of conduct in audiology;
11. organise hearing awareness, screening, and conservation programmes;
12. conduct research related to audiology under supervision;
13. recognise the health care delivery system, their economic and legislative foundations;
14. demonstrate leadership, interpersonal and social skills;
15. collaborate with other healthcare professionals;
16. utilise ICT and information management system to enhance their audiology practice; and
17. apply broad business and real world perspectives in workplace and everyday activities and demonstrate entrepreneurial skills.
a) Curriculum Structure (Curriculum Design and Delivery)

Minimum Graduating Credits are given in the respective tables below and it ranges between 129 and 145 credits.
Practical training – throughout the course, as required.

Audiology and Speech Sciences

<table>
<thead>
<tr>
<th>Field</th>
<th>Audiology</th>
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<tbody>
<tr>
<td>Minimum graduating credit</td>
<td>143</td>
</tr>
<tr>
<td>Compulsory Modules</td>
<td>Percentage</td>
</tr>
<tr>
<td>Total: Core + Concentration / Specialization</td>
<td>10 - 15</td>
</tr>
<tr>
<td>1. Fundamental Modules include Basic Sciences</td>
<td>10 – 20</td>
</tr>
<tr>
<td>2. Professional Modules</td>
<td>40 – 50</td>
</tr>
<tr>
<td>3. Industrial Training*</td>
<td>15 – 25</td>
</tr>
<tr>
<td>Optional Modules</td>
<td>5 – 10</td>
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</tbody>
</table>

* Includes Clinical or Professional Placement or Supervised Professional Placement

Audiology
Hours spent in obtaining or giving assessment and management information (including taking a case history, interviewing the clients and the client's family, discussing diagnosis and recommendations with the clients or the client's family).

Hours spent in speech screening clinic either on campus or off campus.
Preparation time does not count as direct student-client contact hours (including time for calibrating and preparing equipment, writing reports and developing therapy plans).

b) Academic Staff Qualification and Ratio

“The quality of the academic staff is one of the most important components in assuring the quality of higher education and thus every effort must be made to establish proper and effective recruitment, service, development and appraisal policies that are conducive to staff productivity. It is important that every programme has appropriately qualified and sufficient number of academic staff, in an environment that is conducive and encourages recruitment and retention.

Teaching, research, consultancy services and community engagement are the core interrelated academic activities. Nevertheless, it must be acknowledged that the degree of involvement in these areas varies between academic staff and between academic institutions.

Work and its equitable distribution is one of the ways the HEP recognizes meritorious contribution for the purpose of promotion, salary determination or other incentives. It is crucial for the HEP to provide training for its academic staff. The equitable distribution of work helps ensure that such training can be done systematically and fairly,” (COPPA, pp. 21).
It is a requirement of this Programme Standards that all academic staff members are required to undergo continuous professional development, including pedagogical training, for a minimum of 7 days in a year.

**BACHELORS DEGREE**

- Minimum qualification of Academic staff:
  - Theory:
    - Master's Degree in related field; OR
    - Bachelors Degree with 5 years working experience in related fields where such skills are required or that lack master degree holders.
  - Practical (professional subjects): Bachelors Degree with 5 years experience in related field.
  - Preceptors: bachelor with 3 years of experience OR diploma with 5 years experience in related field.
- Staff-student ratio is 1:20
- Clinical training with suitably qualified clinical preceptor:
  - Institution own preceptor – 1:8
  - Clinical preceptor in service – 1:6
- The ratio between full time and part time teaching faculty is 3:2.

**MASTERS DEGREE**

- Minimum qualification of academic staff:
  - Doctoral Degree; or
  - Masters with minimum 5 years working experience and had supervised undergraduates in related area; or
  - Clinical Masters with minimum 3 years of experience and had supervised undergraduates in related area.
- Academic staff-student ratio is 1:10.
- The ratio between full time and part time teaching faculty is 1:1.

**DOCTORAL DEGREE**

- Minimum qualification of academic staff:
  - Doctoral Degree with 3 years working experience including supervision at Masters Degree level.
- The staff-student ratio is 1:4.
- The ratio between full time and part time teaching faculty is 1:1.
c) **Fundamental Modules**

**PROGRAMME STRUCTURE**

The proposed structures are merely samples provided as guide in the delivery of medical and health sciences programmes. They contain breakdown of core subjects, divided into basic sciences and professional modules. The matrices also contain suggested breakdown in relation to the weightage between theoretical and practical teaching.

Theoretical teaching is classroom based delivery of theory whilst practical teaching includes lab based teaching, demonstration, site visits/field trips, simulated clinical training, but does not include postings, industrial attachments and professional development training.

**BACHELOR OF AUDIOLOGY**

<table>
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<tr>
<th>Components</th>
<th>Audiology Modules</th>
<th>Credit Value (Notional)</th>
<th>Theory Credits</th>
<th>Practical Credits</th>
<th>Clinical Credits</th>
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<td>3. Personal development – Languages, Communication Skills – Presentation</td>
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<td>21</td>
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<td>Lectures</td>
<td>Tutorials</td>
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<td><strong>90</strong></td>
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**Industrial Training Includes Clinical Placement (15 – 25%)**

<table>
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<th>Tutorials</th>
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**18%**

<table>
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**7%**

<table>
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<th>Practical</th>
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<td><strong>Total</strong></td>
<td><strong>143</strong></td>
<td><strong>90</strong></td>
<td><strong>27</strong></td>
<td><strong>26</strong></td>
</tr>
</tbody>
</table>

**100%**

**63%**

**19%**

**18%**
d) SPECIFIC REQUIREMENTS

1. Mandatory resources for clinical practice
   a. one audiometric booth with live observation facilities per 8 clinical year students
   b. one set of diagnostic audiometer per 8 clinical year students
   c. 2 sound field Visual Reinforcement Audiometry (VRA) unit per programme
   d. one unit of diagnostic impedance audiometer per 8 clinical year students
   e. One electrophysiological room per programme equipped with:
      i. one unit of diagnostic evoked potential response unit per programme
      ii. one unit of Auditory Steady State Response per programme
      iii. one unit of diagnostic Otoacoustic Emissions (OAE) per programme
   f. one unit of adult speech audiometry or speech test material per programme
   g. one unit of paediatric speech audiometry or speech test material per programme
   h. one hearing aid fitting room per programme equipped with:
      i. real ear measure equipment per programme or maximum of 16 students
      ii. one unit of hearing aid test box (HATB) per programme
   i. one set of audiology outcome measure validation tool per programme
   j. one set of distraction test equipment per 8 clinical year students
   k. one set of clinical sound level meter per programme
   l. one set of sound level meter with octave band filters per programme
   m. one unit of portable screening OAE per programme
   n. one unit of portable screening audiometer per 16 clinical year students
   o. one unit of portable screening tympanometer per 16 clinical year students
   p. one set of appropriate toys for respective paediatric audiometric test techniques per programme

2. Recommended resources
   a. One unit psychoacoustic workstation per programme
   b. One unit bithermal calorics programme
   c. one unit Electronystagmography (ENG) or Videonystagmography (VNG) per programme
   d. one unit rotational chair per programme
   e. one unit VEMP per programme
   f. one unit posturography per programme
   g. one unit earmould laboratory per programme
   h. 1 unit cochlear implant mapping setup per programme
   i. 1 unit dosimeter per programme
   j. 1 unit tinnitus assessment tool per programme
### VI. List of Qualified Universities and Qualifications

<table>
<thead>
<tr>
<th>Country In Which Qualification Is Granted</th>
<th>Name Of Institution Granting Qualification</th>
<th>Description Of Qualification</th>
<th>Reference (endorsement/accredited)</th>
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<tbody>
<tr>
<td>MALAYSIA</td>
<td>Universiti Kebangsaan Malaysia</td>
<td>Ijazah Sarjanamuda Audiologi Dengan Kepujian Sarjana Sains Kesihatan (Pendengaran &amp; Pertuturan) Doktor Falsafah (Pendengaran &amp; Pertuturan)</td>
<td>Malaysian Qualifications Agency (MQA)</td>
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<td>Ijazah Sarjanamuda Sains Kesihatan (Audiologi) Dengan Kepujian Sarjana Sains (Sains Kesihatan) Doktor Falsafah (Audiologi)</td>
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<td>Ijazah Sarjanamuda Audiologi Dengan Kepujian Sarjana Sains Kesihatan (Audiologi) Doktor Falsafah Sains Kesihatan</td>
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<td>UNITED KINGDOM</td>
<td>Aston University</td>
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<td>United Kingdom Accreditation Service (UKAS)</td>
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<tr>
<td>University of Leeds</td>
<td>Healthcare Science (Audiology) BSc</td>
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<tr>
<td>University of Southampton</td>
<td>BSc Healthcare Science (Audiology)</td>
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<td>MSc Audiology (with Clinical Placement)</td>
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<td></td>
<td>PhD (Audiology)</td>
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VII. References

3. Audiology Australia Professional Practice Standards Part B: Clinical Standards (2013)