TELEAUDIOLOGY GUIDELINES

Revised Draft for Testing

March 2022

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Teleaudiology Guidelines – In brief

Teleaudiology is an important tool of client centred care [Ida Institute]

These guidelines are for Audiologists/Audiometrists and cover services from screening to diagnostic, assessment, rehabilitation, social coaching and communication training.

Teleaudiology delivers hearing services to a client who is not in the same location as the Audiologist/Audiometrist. It is a service delivery model that may supplement or replace in-person services.

Audiologists/Audiometrists must adhere to their professional and ethical standards, regardless of whether the service is delivered in-person or by teleaudiology[1].

Services delivered by teleaudiology should be at least equivalent in quality to hearing care services provided in-person.

Audiologists/Audiometrists can safely and effectively deliver most hearing services using teleaudiology, with or without a trained assistant in the same location as the client.[2, 3] Clinical skills developed and used for in-person care apply to and are used in teleaudiology.[4]

Audiologists/Audiometrists should apply a client and family-centred approach and exercise their professional discretion and clinical judgment in consultation with their client about whether teleaudiology is appropriate on a client-by-client, service by service basis.

Synchronous teleaudiology appointments are preferred to asynchronous as it allows real-time interactions with the client and others such as significant others or a trained assistant.

Videoconferencing platforms with live captions are recommended over audio-only options to enable the Audiologist/Audiometrist and client to see what the other is doing and facilitate lip reading.

Audiologists/Audiometrists should address the risks associated with teleaudiology such as

- privacy and security of client's sensitive information
- lack of skills or preparation to communicate with clients in a synchronous service and/or navigate technical requirements
- technical failure.

Audiologists/Audiometrists and providers have many technology options to implement teleaudiology. Each provider will decide what works best for their practice.

"… teleaudiology [is] a useful tool that can provide hearing health care services, anytime, anywhere and to anyone." [Mark Krumm, A review of contemporary teleaudiology literature, 2016]

"Telehealth is not intended to replace in-person consultation – it is an adjunct to help maintain continuity of care …" [Allied Health Professions Australia Telehealth Guide, 2020]

Preface

Relationship to Code of Conduct, Scope of Practice, National Competency, Paediatric Competency and Professional Practice Standards

Ethical and professional standards, competency requirements and related guidance for audiological practice apply to Audiologists/Audiometrists whether the service is delivered in-person or by teleaudiology.[5]

- The Code of Conduct for Audiologists and Audiometrists sets the ethical and professional standards that members of professional bodies must meet.
- The Scope of Practice for Audiologists and Audiometrists provides an overview of the services that may be offered by appropriately qualified and experienced Audiologists and Audiometrists in Australia.
- Audiology Australia Professional Practice Standards are non-mandatory guidelines for clinicians and businesses. Part A addresses practice operations and Part B concerns clinical practice.
- Australian College of Audiology (ACAud) Professional Competency Standards detail broad competencies that apply to the profession of audiology and specific competencies applicable to specific areas of clinical practice.
- Audiology Australia National Competency Standards describe the knowledge, skills and attributes expected of the Audiologist, whatever their work setting or location
- Audiology Australia's Paediatric Competency Standards describe the knowledge, skills and attributes of Audiologists to provide paediatric services at an advance level.

Audiologists/Audiometrists are responsible for maintaining the currency of their knowledge of relevant resources and technologies for audiological practice, digital literacy and practice to provide optimal care for their clients[6].

Evidence

Audiologists/Audiometrists can safely and effectively deliver most hearing services using teleaudiology, with or without a trained assistant in the same location as the client.[7, 8]

Some evidence is currently available for all hearing services being delivered by teleaudiology[9]. Expert opinion supplements the evidence base. The absence of evidence does not necessarily preclude an Audiologist/Audiometrist from using teleaudiology with or without a trained assistant.

Rapid developments in audiological, information and communication technologies will continue to expand the options for teleaudiology and outpace publication of research findings. For this reason, this guidance avoids recommendations of specific equipment, devices, platforms, hardware and software.

Audiologists/Audiometrists are responsible for maintaining the currency of their knowledge of relevant resources and technologies for audiological practice, digital literacy and practice to provide optimal care for their clients[10].

Limitations

Some clients may be reluctant to use teleaudiology or lack the capability to do so.

At present, some services can only be delivered in-person, such as taking an ear impression.

Delivery of some other services using teleaudiology may require the support of a trained assistant and/or additional investment in equipment. These costs may not be remunerated by Government funded schemes.

Emerging developments in audiological, information and communications technology combined with clients' increasing digital literacy are expected to overcome these limitations in part or full in the short to medium term.

Structure of the Teleaudiology Guidelines

The Teleaudiology Guidelines are divided into three sections:

1. General Considerations
2. Practice Operations Guidance
3. Clinical Service Guidance

Key terms

In these guidelines:

- "significant other/s" is used as an umbrella term for those who support or assist the client with non-clinical tasks
- "trained assistant" encompasses those who are trained to provide clinical or technical support in a hearing care setting.

Other key terms used in this document are defined in the Glossary.

Review

These Guidelines will evolve with the development and emergence of new technologies and client demand. These Guidelines will be reviewed as appropriate.

Implementation resources

Suggested resources to support implementation are available in a companion publication which will be updated more regularly than the Guidelines.

Section 1 - General Considerations

"…the hearing care of the future is not location specific…and, in most cases, care will be a hybrid of in-person and remote" [The Ida Institute Future Hearing Journeys report 2021].

Definition

Teleaudiology is the delivery of hearing services to a client who is in a different location to the Audiologist/Audiometrist. It is a useful tool for increasing access to hearing services by overcoming barriers faced by clients such as distance from a clinic, mobility, family and work commitments or pandemic restrictions.

Teleaudiology encompasses many types of clinical interactions between a client and an Audiologist/Audiometrist which may take place through different modes such as:

- telephones, mobile or smart phones and other devices such as a tablet, laptop or desktop
- by post, email, instant messaging, websites, AI bots, Learning Management Systems
- hearing aid Apps
- videoconferencing platforms.

Teleaudiology may:

- take place in real time (synchronous) or with a time delay (asynchronous)
- complement or provide an alternative to hearing services delivered in-person
- involve others in the clinical interaction such as the client's significant other/s or health professionals.

Teleaudiology may take place in a range of settings such as the client's home or workplace, health care settings (community and/or hospital), educational settings or residential care facilities.

Purpose

These Guidelines are intended for Audiologists, Audiometrists and hearing services providers to:

- support the delivery of hearing services safely and effectively through teleaudiology
- enhance access to high quality hearing care across Australia.

These Guidelines are intended to support the professional discretion and clinical judgment of Audiologists/Audiometrists and to inform clinical operations.

Scope

These guidelines covers services throughout a client's hearing journey from screening to diagnostic, assessment, rehabilitation, coaching and support services.

These guidelines apply to diverse groups of clients:

- with mild to profound hearing loss
- with tinnitus, vestibular or auditory processing disorders
- ranging in age from newborns to children, working-age adults, retirees and the elderly
- who are Aboriginal or Torres Strait Islander peoples
- from culturally and linguistically diverse backgrounds
- with disabilities, mobility issues and/or chronic or complex health issues
- living in in urban, regional, rural and remote locations, in the community or in residential care.

These guidelines are not designed to:

- replace an Audiologist/Audiometrist's responsibility for clinical decision-making or duty of care
- provide technical specifications
- provide guidance on teleaudiology resource requirements
- inform the decisions of clients, their significant others or interpreters (spoken language or Auslan).

Guiding Principles for Audiologists/Audiometrists

When considering whether and how to use teleaudiology, an Audiologist/Audiometrist should consider:

- a client and family-centred approach which puts the client first and respects their preferences and values, reinforces shared decision-making and goal setting and prioritises the flow of information[11], noting that a client's preference may change according to the type of service, personal circumstances and experience over time[12]
- evidence, noting this evolves with new technologies
- their own competency and skills to use teleaudiology effectively.

Expectations for Audiologists, Audiometrists and hearing services providers using teleaudiology to provide hearing services are the same as those for delivering services in-person. If the same quality of care cannot be achieved using information and communications technology, teleaudiology may not be appropriate.

Audiologists/Audiometrists must adhere to the same professional and ethical standards, regardless of whether the service is delivered in-person or by teleaudiology[13] (see page 3). Audiologists/Audiometrists are also expected to abide by the professional standards and codes of conduct associated with the Hearing Services Program and the National Disability Insurance Scheme (NDIS) and other individual government funding schemes.

Audiologists, Audiometrists and hearing services providers must be aware of and comply with:

- national, state and territory legislative requirements including professional standards and accreditation
- privacy legislation and/or any other privacy requirements of relevant jurisdictions
- the use of government health monitoring services such as My Health Record
- any other relevant legislation and/or regulatory requirements.[14]

> *"Telehealth relies on patient interest and engagement."* American Medical Association Telehealth Implementation Playbook 2020

Working with others

Teleaudiology expands the possibilities for involving others in a hearing service to enhance the quality of care and the client's outcomes.

Others involved in a hearing service may include:

- a parent, family member, significant other, carer (paid or unpaid), Teacher of the Deaf, Aboriginal or Torres Strait Islander health worker or other person who provides emotional or practical support to the client
- Auslan or spoken language interpreters

- another health, hearing or Allied Health professional, an Audiometry Nurse, a trained teleaudiology assistant, an Allied Health Assistant or Aboriginal or Torres Strait Islander Health Worker who collaborates with or assists the Audiologist/Audiometrist.

These third parties may be with the client, with the Audiologist/Audiometrist or in a different location to both the client and Audiologist/Audiometrist.

The Audiologist/Audiometrist should exercise their professional judgment about when and how to involve those who will assist with clinical aspects of the service and seek the consent of the client beforehand.

Teleaudiology Benefits

Teleaudiology offers a range of benefits for clients, Audiologists, Audiometrists and hearing service providers:

- improved access by clients to hearing services
- increased flexibility and convenience for clients and Audiologists/Audiometrists who save on travel costs and time
- enhanced support for clients with the option to include significant others in different locations
- enhanced care for clients with more options to include other health professionals in the service
- better follow up care and reduced rates of "lost to follow up"
- more engaged clients[15,16]
- access by providers to a wider client base
- reduced incidence of adverse events.[17]

Risks of Teleaudiology

Audiology Australia and the Australian College of Audiology (ACAud) provide guidance on risk identification, management and mitigation which applies to teleaudiology.

When using teleaudiology, Audiologist/Audiometrists and hearing services providers should note the potential risks associated with:

- privacy and security of client's sensitive information
- lack of skills or preparation to communicate with clients in a synchronous service and/or navigate technical requirements
- technical failure.

From a client's perspective, risks may take a different form including:

- inequitable access for those who are not digitally literate and/or lack access to technology
- perceptions of lower standard of hearing care
- challenges of navigating complex information and technical requirements
- security of their sensitive data.

Section 2 – Practice Operations Guidance

> *"…the key to good practice does not lie in the technology but the methodology used to take advantage of the technology."* Next Sense (formerly Royal Institute for Deaf and Blind Children), Guiding Principles for Telepractice, 2016

Introduction

Teleaudiology and in-person hearing care service delivery models share common standards and requirements for privacy, documentation, safety, audiological equipment and other requirements for delivering quality, client and family-centred hearing services.

This section of the guidelines focuses on operational factors to consider before and during a teleaudiology session to support providers, Audiologists and Audiometrists to deliver a high standard of care.

Technology and equipment

Audiologists/Audiometrists and providers have many options for information and communications technology to implement teleaudiology. Choice is shaped by many factors and each provider will decide what works best for their practice. For this reason, these Guidelines offer no recommendations for devices, platforms or software.

Safety and Quality

1	Safety and Quality	Links
Professional standards		
1.1	Audiologists/Audiometrists are expected to: • provide safe, high quality hearing care by teleaudiology that is at least equivalent to services delivered in-person • comply with the Code of Conduct • practice in accordance with the Scope of Practice, Competency Standards and other relevant guidance.	Code of Conduct Scope of Practice for Audiologists and Audiometrists
Privacy and security		
1.2	**Digital health technologies increase opportunities for others to intercept information.** National, state and territory privacy legislation applies regardless of whether the service is delivered in-person or by teleaudiology. Understand the security features of your platform and any Apps you use with clients (such as hearing device manufacturer Apps) including which security features are default and which must be managed or activated by the user. • Contact manufacturers directly if you need more information about the privacy and security features of their Apps. Be aware of and minimise the risks to a client's privacy that may occur in a real time interactive service such as: • check if the client's environment is private or open to others	Audiology Australia Professional Practice Standards (Part A) ACAud Competency Standards AudA National Competency Standards Office of the Information Commissioner

	• identify anyone who may be present with the client and their role in the session. Take reasonable steps to ensure personal health information is transmitted, managed and stored in a secure and confidential manner to minimise the risk of others intercepting sensitive information.	Department of Health Checklist for telehealth services Australian Digital Health Agency cyber security
Informed consent		
1.3	**Informed consent is dynamic and should be obtained from a client for each service provided to that client by teleaudiology.** Offer information about teleaudiology as an option for service delivery including information about potential risks and benefits. Inform the client: • about the systems in place to protect their privacy and data security including storage and transmission • about the role and responsibility of other professionals who may be involved in the teleaudiology service • how and where to provide feedback, including a complaint, about the teleaudiology service • of any out-of-pocket charges that may apply, compared to other options for care. Obtain the client's consent before: • providing a hearing service to a client using teleaudiology • sharing the client's health information with another professional • involving other healthcare professionals.	AudA National Competency Standards ACAud Competency Standards Code of Conduct Audiology Australia Professional Practice Standards (Part A)
Practice policies and processes		
1.5	**A practice's governance framework should refer to its teleaudiology service delivery model to inform and support decision-making, accountability, controls and behaviours.** Update, adapt or create policies and processes to reflect teleaudiology settings, such as: • the clinical governance framework • risk management policy and processes • client confidentiality and privacy including storage of and access to video or audio recordings • complaints procedures • data security • cultural sensitivity • training and professional development.	Clinical governance for allied health professionals
Documentation		
1.6	**Use of teleaudiology as the means of delivering a hearing service should be recorded in the client's record.** Document the use of teleaudiology[18] including: • which mode of communication was used • who participated in the service	AudA National Competency Standards Scope of Practice

	• how consent was given (verbal/written/recorded) • whether recordings were made and if these were shared/re-used and where they are stored • any clinical implications associated with the use of teleaudiology • how any technical issues were resolved to help prepare for the next session.	Allied Health Professions Australia Telehealth Guide
Quality assurance		
1.6	**Feedback is an important part of quality assurance, continuous improvement and risk management processes.** Evaluate, record and monitor client, clinical and non-clinical team members' feedback on teleaudiology services.	
Insurance		
1.7	Ensure Professional Indemnity insurance arrangements cover teleaudiology services and settings.	

Client and family-centred approach

2	A client and family-centred approach	Links
Engaging the client		
2.1	**Engaging the client and their significant other/s about using teleaudiology starts with understanding and respecting their preferences, needs and capabilities.** Consult the client about their preferences, digital literacy, capability and access to technology at home or work, including reliable internet. Consult and collaborate with partners, such as community health centres and Aboriginal Community Controlled Health Organisations, about resources they need to host teleaudiology sessions for clients. Seek to understand concerns that may arise from a client's hesitancy to use teleaudiology which may include: • age • health status and concerns such as memory loss • concerns about impersonal care [19] • digital literacy, confidence with and access to the technology • need for another person to provide support and/or technical assistance • cultural safety • suitability of their environment and surroundings. Accept the client's choice about using teleaudiology. Reach agreement with a client for each service offered by teleaudiology.	AudA National Competency Standards ACAud Competency Standards
Working with others who support the client		

2.2	**Teleaudiology expands the opportunities to involve others to support or assist the client and enhance service quality and outcomes.** Encourage and support the client to take advantage of teleaudiology as a way of involving others within their appointments. Others may be in the same or a different location to the client, such as: ● significant other/s ● an Auslan or spoken language interpreter ● an Allied Health worker ● an Aboriginal and/or Torres Strait Islander Health Worker ● a personal care assistant ● a Teacher of the Deaf or a specialist teacher.	AudA National Competency Standards ACAud Competency Standards

Preparing for the service

3	Preparing for the service	Links
Client selection		
3.1	**Teleaudiology may not be appropriate for or desired by some clients. A client's preference may change according to the hearing service, as may their circumstances.** Apply professional discretion, clinical judgment and an understanding of the client's preferences and hearing needs to establish whether teleaudiology is appropriate. Consider the relative risk of delaying a diagnosis, assessment or rehabilitation for a new or existing client. Be aware of the potential for unconscious bias to influence decisions about which clients are capable of or most likely to benefit from teleaudiology.	
Preparing the client for the service		
3.2	Consider a practice or test session with the client prior to a teleaudiology session. Provide written information (in hard copy or digital format) to the client about teleaudiology and practical tips to optimise their experience. Advise the client about what to expect during the teleaudiology service. Confirm if the client: • will be accompanied by a significant other or carer • wants an interpreter (spoken language or Auslan) and who will make the necessary arrangements • wants a professional support person such as Aboriginal or Torres Strait Island Health Worker or Maternal and Child Health Nurse to attend and who will make the necessary arrangements. Encourage clients to use a room with adequate lighting and minimal background noise which affords some privacy.	

	Confirm costs associated with the appointment and how billing will be processed.	
Working with other healthcare professionals		
3.3	**Teleaudiology expands the opportunities to involve other professionals to collaborate with or assist the Audiologist/Audiometrist to enhance clinical outcomes.** Leverage the potential of teleaudiology to enhance clinical outcomes by involving other healthcare professionals in the same or a different location to the Audiologist/Audiometrist and the client, such as: ● another Audiologist/Audiometrist ● another Allied Health Professional such as a Speech Pathologist ● a medical professional ● an Audiometry Nurse ● an Allied Health assistant ● an Aboriginal and/or Torres Strait Islander Health Worker ● a trained assistant ● a clinical intern. Ensure others involved in the session are clear about their roles and responsibilities. Ensure a trained assistant has the necessary skills and training for any tasks to be performed on behalf of the Audiologist/Audiometrist. The Audiologist/Audiometrist is responsible for all clinical decision-making and accountable for the quality and outcomes of services.	AudA National Competency Standards ACAud Competency Standards
Allocate sufficient time for the service		
3.4	**A real-time interactive session may take longer than in-person hearing care.** For clients unfamiliar with teleaudiology, more time may be necessary to ensure the client is comfortable with the mode of communication, test connections and volume, respond to requests and/or resolve technical issues. Depending on the service, equipment or tasks may need to be set up by the client or significant others such as parents to prepare the environment for the assessment. Assessments may take longer than in-person for technical reasons such as internet issues.	
Manage the technology		
3.5	**Teleaudiology offers a range of ways to connect with a client and can be readily adapted for a range of circumstances. It also requires careful preparation to manage potential technical issues.** Be flexible about using the modes of teleaudiology to find the best fit for the client and the goals of the session. Consider the client's preferences, digital literacy and access to technology.	AudA National Competency Standards ACAud Competency Standards

	Understand how to help clients and significant others to connect to teleaudiology. Understand how to adapt to the client's preferred technology or platform without compromising the client's privacy or data security. Develop a plan with the client about how: • to communicate if the client is required to remove their hearing device/s during the teleaudiology session • to convey a problem or concern such as raising a hand or using the chat function to send a message. Prepare for technical issues such as slow internet speed, service interruptions or failure. Develop a contingency plan with the client about what to do if the technology falters or fails such as: • completing the interaction by another teleaudiology mode or device • rescheduling the appointment at another time or in-person.	
Consulting space		
3.6	Ensure a minimum set of equipment is available for real time interactive services including a microphone, camera, monitor, speaker and headset (or headphones) and it is tested in advance of the real time interactive session. Ensure the consulting space for real time interactive services is fit for purpose: • minimal visual distractions • no confidential information and images in view of the camera • well lit • prepared with the clinical equipment, props and other resources needed during the session.	AudA National Competency Standards ACAud Competency Standards

Considerations for the practice

4	Considerations for the practice	Links
Workflow		
4.1	**Introducing teleaudiology may require changes to workflow and/or roles and responsibilities.** Consult other colleagues and support staff about how teleaudiology may affect different stages of the workflow before, during and following a session, such as client triage, appointment set up, billing and other administrative arrangements. Identify the implications of workflow changes for the roles and responsibilities of clinical and non-clinical team members.	

Technical and communication skills		
4.2	**Delivery of high-quality services by teleaudiology requires a range of non-clinical skills.**[20] Identify what training, skills, attributes and/or resources clinical and non-clinical team members have or need to deliver teleaudiology successfully, such as: ● adapting communication skills such as active listening and observation, perspective taking and giving clear directions ● understanding how to address potential communication barriers such as loss of body language cues, the absence or restricted view of natural gestures and navigating cultural sensitivities such as avoiding eye contact ● moderating speech patterns when using automated captioning such as speaking more slowly, using shorter sentences and avoiding jargon ● basic and advanced technology skills including trouble shooting skills and assisting clients to connect to their teleaudiology session.	AudA National Competency Standards ACAud Competency Standards
Professional development		
4.3	**Teleaudiology expands opportunities for professional and workforce development including clinical supervision of students and interns.** Consider how to reconfigure arrangements to enable supervision of students or clinical interns who are in a different location to the client and/or Audiologist/Audiometrist. Leverage teleaudiology to enable students or clinical interns to observe or engage with a client who is in a different location to gain practical experience of teleaudiology. Use teleaudiology to support the professional development of others involved in hearing health care delivery. Leverage teleaudiology to mentor another Audiologist/Audiometrist or pursue other professional development opportunities interstate or overseas.	AudA National Competency Standards ACAud Competency Standards Scope of Practice

Section 3 - Clinical Guidance

Considerations for delivering clinical services by teleaudiology

Key points

The guidance in this section is informed by the principle of client and family-centred care. There is no "one size fits all" teleaudiology model.

Audiologists/Audiometrists must consider the client's preferences, digital literacy and access to technology and apply their professional discretion and clinical judgement to determine:

- whether teleaudiology is suitable on a client-by-client, service-by-service basis
- how to adapt teleaudiology to best meet the client's clinical needs and circumstances
- quality, safety and risk factors.

Expectations of Audiologists and Audiometrists using teleaudiology to provide hearing services are the same as those for delivering services in-person. These services should be at least equivalent to the quality of hearing care services provided in-person. If the same quality of care cannot be achieved using communications technology, teleaudiology may not be appropriate.

Clinical practice standards do not differentiate between in-person and teleaudiology service delivery models.[21]

Working with a trained assistant

The Audiologist/Audiometrist is responsible for:

- discussing and reaching agreement with the client about the involvement and role of other clinical personnel and/or trained assistants in the teleaudiology session
- ensuring a trained assistant has the necessary skills and training
- directing and supervising the work of a trained assistant
- clinical decision-making
- the outcomes of the appointment.

General Guidance

1	Synchronous appointments are preferred to asynchronous to allow real-time: • rapport building with and feedback to a client • monitoring and feedback to a trained assistant working with a client in the same location.
2	Videoconferencing platforms with live captions are recommended over audio-only options to enable the Audiologist/Audiometrist and client to see what the other is doing and to facilitate lip reading.
Client and family-centred care	
3	Client and family-centred care is a core part of all audiology appointments. It involves "an approach to patient care that is respectful and responsive to the needs and individual values of any and all patients".[22]

	Teleaudiology can make it easier and more convenient for significant others to participate in an appointment, regardless of their physical location, to provide emotional and/or practical support or participate in counselling.
Social coaching and communication training	
4	Counselling, social engagement support (social coaching) and communication training can be delivering effectively using teleaudiology including the involvement of significant others in a different location to the client.
Interprofessional care	
5	Teleaudiology expands the possibilities for involving healthcare professionals who may be in the same or a different location to the client such as an Ear, Nose and Throat specialist, a General Practitioner, an Audiologist with expertise in a particular clinical service, another Allied Health professional, an Audiometry Nurse, an Aboriginal or Torres Strait Islander Health Worker, Allied Health assistant or trained teleaudiology assistant. The Audiologist/Audiometrist may send, receive and review results synchronously or asynchronously. Involving other healthcare professionals in a teleaudiology appointment contributes to better coordinated and integrated care, enhanced communication with and convenience for the client.
Assessing the outer ear system and Otoscopy	
6	Observation of the client's outer ear is part of most hearing services. If it is not possible to assess the condition of the client's ear or hearing devices at an in-person appointment, consider: ● supervising a trained assistant in the same location as the client to operate a video-otoscope and share results synchronously or asynchronously[23] with the Audiologist/Audiometrist ● using a web-based questionnaire such as the Consumer Ear Disease Risk Assessment (CEDRA)[24] ● arranging for the assessment to be performed by another Audiologist/Audiometrist or healthcare professional before the hearing service, with results shared asynchronously ● using a new technology such as a smartphone-enabled digital video-otoscope operated by the client under the supervision of an Audiologist/Audiometrist, after consulting the client about their confidence and capability to do so.
Ear impressions	
7	At present, only Audiologists/Audiometrists can obtain ear impressions and this cannot be done using teleaudiology.

Wax management	
8	It is not currently possible for an Audiologist/Audiometrist to perform wax removal using teleaudiology. Advice to clients on wax management can be delivered using teleaudiology such as: • tailored information on ear hygiene practices • discouraging use of ear candling, cotton swabs or similar items.

Guidance for specific services

Hearing Screening	
Hearing screening can be safely and effectively performed synchronously or asynchronously, with the support of a parent for an infant or child, using: • available technology and devices to obtain an audiogram • an online hearing screening test (audio and video) • a validated functional assessment such as the Parent-evaluated Listening & Understanding Measure (PLUM) or the Hearing and Talking Scale (HAT). Working with a trained assistant, synchronously or asynchronously, an Audiologist/Audiometrist can perform hearing screening using: • otoacoustic emissions test (OAE) • a modified or shortened pure tone audiometry (PTA) assessment.	
Clinical Reference	Audiology Australia Professional Practice Standards (part b) 2013: Standard 5.1 ACAud Professional Competency Standards
Neonatal screening	
This service can be safely and effectively delivered by teleaudiology by working synchronously with a trained assistant or other trained healthcare worker who is in the same location as the client. The assistant would obtain a seal or place headphones or caps using screening equipment and relay the measurement, synchronously or asynchronously, to the Audiologist to interpret.	
Clinical Reference	Audiology Australia Professional Practice Standards (part b) 2013: Standard 5.2 ACAud Professional Competency Standards
Audiological Assessment	
While many clients express a preference to have their initial audiological assessment in-person, this is not always possible owing to the client's location and/or circumstances, the risk to the client of delayed treatment or other factors such as travel restrictions. An Audiologist/Audiometrist can perform aspects of audiological assessment (such as hearing assessment, tympanometry, Acoustic Immittance Testing and Otoacoustic Emission Testing) when the client is in a different location by: • working synchronously with a trained assistant in the same location as the client to set up equipment and enable remote control by the Audiologist/Audiometrist • using an in-situ audiogram through a hearing aid • using a web-based digits-in-noise test or pure tone testing resources	

- sending calibrated equipment or devices to the client and, in a synchronous session, guiding the client or a significant other on how to set up the equipment so the Audiologist/Audiometrist can take remote control
- using telephone or web-based speech tests.

Ambient noise levels must be low enough to test accurately. This can be measured and monitored using an App or other sound level meters.

Sound level meters can also be used to assess and moderate the volume of presenting speech when conducting a speech test by videoconference. Another option is to use a Loudness Discomfort Level questionnaire.

Clinical Reference	Audiology Australia Professional Practice Standards (part b) 2013: Standards 9, 10, 11 ACAud Professional Competency Standards

Assistive Technology – fittings, adjustment, aftercare

A range of hearing devices can be programmed and supported remotely using advances in technology, including hearing aids, hearing implants, and Assistive Listening Devices.

An Audiologist/Audiometrist has several options for fitting and adjusting hearing devices by teleaudiology.

In a synchronous session:

- a trained assistant can be supervised to operate a video-otoscope (if required) and/or apply real-ear-measures (REMs) with the client. The assistant can ensure appropriate amplification and obtain an accurate match to prescription targets
- hearing device adjustment can incorporate elements of the client's home or work environment, such as clanking cutlery or the TV volume at others' preferred listening level.

Another option is to fit and adjust hearing devices without REMs either synchronously or asynchronously by using:

- available technology such as 2cc coupler, HIT boxes or Saturation Sound Pressure Level measures to verify device performance to the prescription target before sending the devices to the client
- available technology to map speech and obtain information on Long Term Average Spectral analysis.

Further options include:

- adjusting the hearing device using the relevant manufacturer's hearing device programming App
- using the hearing device App to monitor real time hearing aid usage or survey the hearing device user in specific listening conditions to assess needs and adjust accordingly
- performing an in-situ audiogram using the hearing device if supported by the manufacturer's App
- using questionnaires, synchronously or asynchronously, to establish the client's:
  - hearing aid skills and need for further training, such as the Hearing Aid Skills and Knowledge Inventory[25] (HASKI)
  - needs for further training or counselling, such as the Glasgow Hearing Aid Benefit Profile[26] (GHABP).

Questionnaires may be used synchronously or asynchronously to check Maximum Power Output and Loudness Discomfort Levels.	
Clinical Reference	Audiology Australia Professional Practice Standards (part b) 2013: Standards 14, 15, 16, 17, 20 ACAud Professional Competency Standards
Tinnitus and Sound Tolerance Assessment and Management	
Tinnitus and sound tolerance may be assessed synchronously or asynchronously: • using available technology and/or resources such as a tinnitus questionnaire • working with a trained assistant in the client's location using pitch matching and Loudness Discomfort Level assessments.	
Tinnitus and sound tolerance can be managed synchronously or asynchronously by: • referring clients to online and App-based tinnitus resources • providing counselling, information and support • remotely fitting maskers, including hearing aids with in-built tinnitus maskers.	
Clinical Reference	Audiology Australia Professional Practice Standards (part b) 2013: Standards 11.7, 26 ACAud Professional Competency Standards
Vestibular Assessment and Management	
While technology options to undertake vestibular function testing are currently limited, assessment of symptoms and triage can be undertaken by teleaudiology using: • telephone • a questionnaire (email or post) • videoconference which may also involve another healthcare professional such as a neuro-otologist, an Audiologist specialising in balance disorders, a vestibular physiotherapist or a significant other to assist the client.	
Vestibular rehabilitation can be provided using videoconferencing or an App to adjust exercise treatment plans and monitor progress. Clients should be selected carefully to ensure home-based care plans do not put the client at risk of falls, anxiety, worsening of symptoms or neck injuries.	
Clinical Reference	Audiology Australia Professional Practice Standards (part b) 2013: Standards 11.4, 27
Auditory Processing Assessment and Management (including spatial processing disorder)	
To gather baseline data, screening and assessment of auditory processing disorder can be undertaken synchronously with a digitally literate client or significant other using available technology (including Apps). This may require a trained assistant in the same location if the technology involves calibrated headphones. Further options include providing the client with an online screening or diagnostic test or a survey to complete asynchronously and send to the Audiologist to evaluate.	
Clinical Reference	Audiology Australia Professional Practice Standards (part b) 2013: Standards 11.5, 25 ACAud Professional Practice Standards

Appendices

Acknowledgments

Audiology Australia thanks members of the Teleaudiology Guidelines Working Group who volunteered their time and expertise to lead the development of these guidelines. The Working Group comprised hearing health care practitioner, consumer and provider representatives drawn from the Hearing Health Sector Alliance and two clinical researchers.

Name	***Representative role on Group***
Dr Bec Bennett	Working Group Chair
Dr Barbra Timmer	Independent researcher
Dr David Allen	Independent researcher
Frances Lockhart	Audiology Australia
Mark Paton	Australian College of Audiology
Stephen Williamson	Deafness Forum of Australia
Ian Rimes	Better Hearing Australia
Jane MacDonald	Hearing Business Alliance
Ashley Wilson AM	Hearing Care Industry Association

The Teleaudiology Guidelines Working Group was established in February 2021 and met x times over the life of the project.

Development of the Teleaudiology Guidelines

Funding for these guidelines

In October 2020, the Australian Government announced a funding package of $21.2m over five years to implement key initiatives from the Hearing Health Roadmap including developing teleaudiology guidelines to ensure a high standard of clinical care for consumers, particularly those living in rural and remote areas. The Australian Department of Health contracted Audiology Australia to deliver the initiative.

Audiology Australia commenced development of the Teleaudiology Guidelines in February 2021. The development of these guidelines did not include a cost-effectiveness analysis.

Quality Aspects

These guidelines are informed by International Standard 13131: *Health Informatics – Telehealth Services – Quality Planning Guidelines* (2021)[27] and address the quality characteristics identified by the Standard: accessibility, accountability, appropriateness, competence, confidentiality, continuity, dependability, effectiveness, efficiency, inclusivity, safety, transparency and usability.

Consultation and testing

Feedback on the initial draft was sought from the Australian hearing sector including Audiologists, Audiometrists and their professional associations, consumers and consumer advocacy organisations, service providers and their industry bodies and the Hearing Health Sector Alliance. Members of the Teleaudiology Guidelines Working Group played an instrumental part by encouraging their networks to participate in consultation about and testing the draft guidelines.

Audiology Australia also consulted international experts and organisations with an interest in telehealth and hearing about the guidelines.

After taking account of consultation feedback, a revised draft of the guidelines was tested over several months, from November 2021 to April 2022. Audiologists and Audiometrists contributed through interviews, focus groups and a survey.

Audiology Australia Teleaudiology Position Statement 2020

Audiology Australia's position is that teleaudiology is an appropriate model of service delivery for the audiology profession. To advance the practice of teleaudiology in Australia, Audiology Australia makes the following recommendations:

Recommendation 1: That the Australian Government add hearing health services provided directly by Audiologists and delivered via telehealth to the Medicare Benefits Schedule and the Hearing Services Program on an ongoing basis.

Recommendation 2: That Audiologists review their service delivery model and incorporate teleaudiology when appropriate to deliver person-centred services.

To access the full position statement please click here.

Resource considerations

The use of technology in health care delivery offers potential cost efficiencies and/or convenience for the provider and the consumer.[28] However, there may be cost implications for both providers and consumers to invest in and maintain audiological or communications technology to use teleaudiology. Together with reimbursement issues, these additional costs may present barriers to take-up.[29]

Audiologists/Audiometrists and service providers are encouraged to review their service delivery models, undertake a cost analysis, and incorporate teleaudiology as appropriate.

Glossary of Terms

Term	Definition
Asynchronous	An interaction where the interaction is delayed such as an email or receiving and reviewing test results following the appointment
Audiologist	A university qualified health-care professional who identifies, diagnoses, treats, and monitors disorders of the auditory and vestibular systems. Audiologists work with clients to help them to preserve, manage and improve their hearing, their ability to process and understand sounds and their balance. Audiologists help clients of all ages, including those with complex needs, to improve their ability to communicate and interact in all situations. To be accredited by Audiology Australia, Audiologists undertake a one-year clinical internship after completing a Masters level university program. To maintain accreditation, an Audiologist must be able to demonstrate ongoing professional development over the previous 12 months
Audiometrist	Audiometrists in Australia primarily work with adult clients (including older adults) and provide a range of services to school-aged children. They focus on hearing and auditory function assessment and (re)habilitation. Audiometrists achieve this by applying a range of diagnostic tests and rehabilitation approaches including counselling and the prescription and fitting of non-implantable devices/aids such as bone conduction aids; earplugs such as custom noise/swim/musician plugs; FM and other remote sensing systems; hearing aids; and hearing assistive technology. Audiometrists may also provide rehabilitation for tinnitus using education and hearing aids. Audiometrists must maintain currency with a Practitioner Body including ongoing professional development and have obtained a minimum qualification of a Certificate 4
Client	A recipient of audiological services
Client and family-centred care	Treating clients receiving healthcare with dignity and respect, involving them and their significant others in decisions about their health. It is an approach that is linked to healthcare rights and is grounded in mutually beneficial partnership with health care providers and clients
Clinical intern	An individual who has completed two years in an Audiology Australia accredited Masters level university program or an overseas qualified Audiologist wanting to practice in Australia who is undertaking a minimum one year clinical internship under the supervision of more experienced colleagues
Code of Conduct	The Code of Conduct sets the fundamental standards of behaviour and responsibilities expected of Audiologists and Audiometrists
Competence	Ability to apply knowledge and skills to achieve intended results
Competency Standards	Describe the knowledge, skills and attributes expected of an Audiologist/Audiometrist whatever their work setting or location. Competency standards allow for professional judgement and for application for a variety of purposes and within diverse settings

Term	Definition
Cultural safety **Culturally safe** **Culturally sensitive**	Cultural Safety is determined by Aboriginal and Torres Strait Island individuals, families and communities. Culturally safe practice is the ongoing critical reflection of health practitioner knowledge, skills, attitudes, practising behaviours and power differentials in delivering safe, accessible and responsive healthcare free of racism. To ensure culturally safe and respectful practice, health practitioners must: a. Acknowledge colonisation and systemic racism, social, cultural, behaviours and economic factors which impact individual and community health b. Acknowledge and address individual racism, their own biases, assumptions, stereotypes and prejudices and provide care that is holistic, free of bias and racism c. Recognise the importance of self-determined decision-making, partnership and collaboration in healthcare which is driven by the individual, family and community d. Foster a safe working environment through leadership to support the rights and dignity of Aboriginal and Torres Strait Islander people and colleagues
Culturally and linguistically diverse (CALD)	Refers to Australia's non-indigenous groups that have a cultural heritage different from the dominant Anglo-Australian culture. Health, illness and disability are all concepts shaped by cultural values and beliefs
Digital literacy for audiological practice	The ability to identify and use technology confidently, creatively and to assist clients and their families where required
Hearing Service	Provision of audiological treatment, procedure, programs or other intervention. "Service" can also refer to a person or organisation as the provider of the audiological or other service
Hearing Services Provider	A business entity (private, public, for profit, not-for-profit) that provides hearing services to members of the community
Informed consent	Permission to receive healthcare, given voluntarily by the intended recipient of care (or a proxy) after being informed about the purpose and possible outcomes of the service
In-person	The Audiologist/Audiometrist and client are in the physical presence of each other and in the same physical location during the clinical encounter
Interpreter	A person who translates speech orally or into sign language
Interprofessional	Collaborative practice which occurs when Audiologists/Audiometrists work with Audiologists/Audiometrists and/or with other professionals; also known as multi-disciplinary care
Mode of Teleaudiology	A way to connect the Audiologist/Audiometrist and client when they are in different locations. Teleaudiology modes include the use of phones, smart devices (such as a phone, tablet or captioned-video phone), email, text messaging, phone calls, videoconferencing, websites, Apps and web chats
Non-clinical skills	Skills not traditionally considered clinical, such as communication and interpersonal skills, technology trouble shooting, familiarity with tele- and videoconferencing and flexibility with test techniques

Term	Definition
Professional Practice Standards	Audiology Australia Professional Practice Standards are resources that have been developed by audiologists, for audiologists and audiological practices. These standards are designed to help audiology practices and clinics deliver safe, high quality health care and embrace continuous quality improvement as good business practice. The Professional Practice Standards consists of two separate resources: • Part A Practice Operations • Part B Clinical Practice
Real time interactive service or session	Synchronous teleaudiology where the Audiologist/Audiometrist interact in real time using telecommunications
Risk assessment	Process of identification, analysis and evaluation of risk
Risk management	Analysing processes and practices that are in place, identifying risk factors and implementing procedures to address those risks
Safety	Freedom from unacceptable risk or harm
Scope of Practice	The Scope of Practice for Audiologists and Audiometrists provides an overview of the services that may be offered by appropriately qualified and experienced Audiologists and Audiometrists in Australia
Significant Other	A description that encompasses those who provide support, non-clinical care and/or assistance to a client during a hearing service. This may include family members, friends, unpaid and paid carers or health workers
Synchronous	An interaction that takes place in the real time eg over the phone or by videoconference
Teleaudiology	The use of telehealth to provide audiological services. A service delivery model that can be used to supplement and complement services delivered using the traditional in-person model. Also referred to as telehealth, telepractice, virtual care, remote care as well as more specific terms such as connected hearing care, telerehabilitation and eAudiology. May occur • in real time (synchronously) when an audiologist, audiometrist or one of their team members interacts with a client on the phone, videoconference or via an app • with a time delay (asynchronously) when the interaction takes place for example by mail or email, text messaging, website or via an App • as a mix of the above (hybrid), where a client receives some hearing services in-person and others by one or more forms of teleaudiology
Trained Assistant	A description that encompasses third parties who may be involved in a hearing service to support the Audiologist/Audiometrist in a hearing service. This may include those with clinical training and those trained to provide clinical or technical support
Unconscious bias	A bias created and reinforced by our background, cultural environment and personal experiences of which we are unconscious (unaware) which can have a significant influence on our behaviours

Term	Definition
	and decision making. Identifying and understanding unconscious bias contributes to more inclusive interactions and decisions based on evidence and facts, rather than intuitions and hunches

End notes

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