

Australian Teleaudiology Guidelines



“... 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

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2023 revisions - The resources list has been revised to incorporate references from the AudA Professional Practice Guide, and minor modifications have been implemented throughout the document to ensure that the content remains current to highlight the importance of clients verifying the compatibility of smart devices and relevant apps to meet their hearing requirements for teleaudiology.

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The Australian Teleaudiology Guidelines in brief



These Guidelines are for Audiologists and Audiometrists and cover services from screening to diagnosis, assessment, rehabilitation, coaching and support.

These Guidelines were created to:

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

Teleaudiology delivers hearing services to a client who is not in the same location as the Audiologist or Audiometrist. It is a service delivery model that may supplement or replace in-person services. Clinical skills developed and used for in-person care apply to and are used in teleaudiology.¹

Audiologists and Audiometrists must adhere to their professional and ethical standards, regardless of whether the service is delivered in-person or by teleaudiology.²

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

Audiologists and Audiometrists can safely and effectively deliver most hearing services using teleaudiology, with or without a trained assistant who is in the same location as the client.^{3,4}

Audiologists and Audiometrists should apply a client and family-centred approach. They will exercise their professional discretion and clinical judgment in consultation with their client about whether teleaudiology is appropriate for the client and for each service provided using teleaudiology.

Synchronous teleaudiology appointments are preferred to asynchronous because they allow live (or real time) interactions with the client and other people such as significant others or trained assistants. Synchronous appointments may take place using different devices such as a phone, tablet, laptop or desktop computer and may use modes such as Apps or videoconferencing.

Videoconferencing platforms with live captions are recommended over audio-only options. Captions are of great assistance to people who have diminished hearing and people whose first language is not English or spoken.

Audiologists and Audiometrists should address the risks associated with teleaudiology such as:

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

Audiologists, Audiometrists and hearing services providers have many technology options to implement teleaudiology. For this reason, these Guidelines do not offer recommendations for equipment, devices, platforms, software or Apps.

The Context for these Guidelines



Relationship to Professional Standards and Guidance

The same ethical and professional standards, competency requirements and related guidance for audiological practice apply to Audiologists and Audiometrists no matter 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.
- Australian College of Audiology (ACAud) **Professional Competency Standards** detail broad competencies that apply to the profession of Audiology and additional competencies applicable to specific areas of clinical practice.
- Audiology Australia's **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 advanced level.
- The Audiology Australia **Professional Practice Guide** describes the expected standards of professional behaviour of all Audiologists in Australia and provides guidance for quality clinical practice.

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

Evidence

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

There is credible evidence that most current hearing services can be delivered by teleaudiology.⁹

Rapid developments in audiological, information and communication technologies will continue to expand the options for teleaudiology. Sometimes, research lags clinical practice. The Audiologist and Audiometrist should apply their clinical judgment when using teleaudiology where there is limited or no research evidence to support its use in delivering certain services.

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
- may require additional investment in equipment to deliver by teleaudiology.

Developments in audiological, information and communications technology combined with clients' increasing digital literacy will for the most part address the current limitations over time.

Structure of the Teleaudiology Guidelines

These Teleaudiology Guidelines are organised in three sections:

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

Key terms

In these Guidelines:

- “client” is a recipient of audiological services
- “significant other” is an umbrella term for people who support or assist the client with non-clinical tasks
- “trained assistants” are trained to provide clinical or technical support for an Audiologist or Audiometrist during a hearing care appointment.

Other key terms used in these Guidelines are explained in the Glossary.

Review

These Guidelines will evolve with the development and emergence of new technologies and client demand. They will be reviewed every two years.

Implementation resources

Useful resources to support the delivery of teleaudiology are available in a companion publication, **Suggested Resources**, which will be updated more regularly than these Guidelines.

“Teleaudiology is an important tool of client centred care.”

Ida Institute

Section 1 – General Considerations



Definition

Teleaudiology improves public access to hearing services by overcoming barriers faced by clients such as distance to a clinic or specialist services, mobility, family and work commitments or health considerations.

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

- phones and other devices such as a tablet, laptop or desktop computer
- email, instant messaging, websites
- hearing device Apps
- videoconferencing.

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 and health professionals.

Teleaudiology can take place in a range of settings such as the client's home or workplace, health care settings (community, hospital), educational settings or residential care facilities, and even while someone is travelling or on holiday in Australia or overseas.

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.

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

Scope

These Guidelines cover services provided throughout a client's hearing journey from screening to diagnosis, assessment, rehabilitation, coaching and support services.

They apply to diverse groups of clients, including people:

- ranging in age from newborns to children, working-age adults, retirees and the elderly
- who are Aboriginal and Torres Strait Islander peoples
- from culturally and linguistically diverse backgrounds
- in urban, regional, rural and remote locations, in the community or in residential care.

This includes people with:

- suspected hearing difficulties
- ear and hearing conditions, such as tinnitus, vestibular disorder, auditory processing difficulties
- disability, mobility issues and/or chronic or complex health issues
- certain age groups of children and adults who would benefit from hearing screening.

These guidelines are not designed to:

- replace an Audiologist or 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 and their significant others.

Guiding Principles for Audiologists and Audiometrists

When considering whether and how to use teleaudiology, an Audiologist and Audiometrist should be satisfied that the same quality of care can be achieved as during an in-person appointment. If not, teleaudiology may not be appropriate in a particular case.

For teleaudiology to work best, there should be a client and family-centred approach which puts the person first, respects their preferences and values, reinforces shared decision-making and goal setting and prioritises the flow of information.¹⁰

Audiologists and Audiometrists must adhere to the same professional and ethical standards, regardless of whether the service is delivered in-person or by teleaudiology¹¹ (see page 3). Where applicable, they are also expected to abide by the professional standards and codes of conduct associated with the Australian Government's Hearing Services Program, the National Disability Insurance Scheme (NDIS) and other government funded schemes.

Audiologists, Audiometrists and hearing services providers must be aware of and comply with various laws such as:

- 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.¹²

Working with others

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

Others involved in a hearing service appointment may include:

- a parent, family member, significant other, carer (paid or unpaid), Teacher of the Deaf, Aboriginal and Torres Strait Islander Health Worker or other person who provides emotional or practical support to the client
- Spoken language interpreters and Auslan interpreters
- another health, hearing or Allied Health professional, an Audiometry Nurse, a trained teleaudiology assistant, an Allied Health Assistant or Aboriginal and Torres Strait Islander Health Worker who collaborates with or assists the Audiologist and Audiometrist.

These third parties may be with the client, with the Audiologist or Audiometrist, or in another location.

The Audiologist and Audiometrist should exercise their professional judgment about when and how to involve other professionals and seek the consent of the client beforehand.

Teleaudiology Benefits

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

- improved access for clients to hearing services
- 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”
- a more engaged client^{13,14}
- increased flexibility and convenience for clients, Audiologists and Audiometrists who can save on their travel costs and time
- access by providers to a wider client base
- reduced incidence of adverse events.¹⁵

Risks to Teleaudiology

When using teleaudiology, Audiologists, Audiometrists and hearing services providers should actively address the potential risks associated with:

- privacy and security of a client’s sensitive information
- appropriate skills and proper preparation to communicate with clients in a synchronous service and to anticipate and deal with meeting the technical requirements of online appointments and service disruption.

For clients, risks may include:

- inequitable access for those who are not digitally literate or lack access to technology and bandwidth
- concerns about a lower standard of hearing care
- understanding complex information
- security of their sensitive data.

“Telehealth relies on patient interest and engagement.”

American Medical Association Telehealth Implementation Playbook 2020

Section 2 – Practice Operations Guidance



Introduction

Teleaudiology shares common standards and requirements with in-person hearing care service delivery models. These include 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.

Audiologists, Audiometrists and providers have many options for information and communications technology to implement teleaudiology. For this reason, these Guidelines do not offer recommendations for equipment, devices, platforms, software or Apps.

1. Safety and Quality

1.1 Professional standards

Audiologists and 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.



Resources

Code of Conduct
Scope of Practice for Audiologists and Audiometrists
ACAud Competency Standards
Audiology Australia (AudA) National Competency Standards
Audiology Australia Paediatric Competency Standards for Audiologists
Audiology Australia Professional Practice Guide

1.2 Privacy and security

Digital health technologies increase opportunities for others to intercept information.

National, state and territory privacy legislation applies to both in-person and teleaudiology services.

Understand the security features of your delivery method including security features that are built-in or must be activated.

- Contact manufacturers directly if you need more information.

Be aware of and minimise the risks to a client's privacy that may occur. Check if the client's environment is private or open to others and identify anyone who may be present in the session with the client and their role in the session.

Ensure personal health information is transmitted, managed and stored in a secure and confidential manner to minimise the risk of others intercepting private information.

1.3 Practice policies and processes

A practice's governance framework should have a section about its teleaudiology service delivery model.

Policies and processes should reflect teleaudiology settings, such as:

- a clinical governance framework
- risk management policy and processes
- client confidentiality and privacy including storage of and access to video or audio recordings
- a clear consent process prior to providing a teleaudiology service
- complaints procedures
- data security
- cultural sensitivity
- training and professional development.



Resources

ACAud Competency Standards

AudA National Competency Standards

Audiology Australia Professional Practice Guide

Office of the Information Commissioner

Department of Health Checklist for telehealth services

Australian Digital Health Agency – cyber security



Resources

Audiology Australia Professional Practice Guide

Clinical governance for allied health professionals

1.4 Informed consent

Informed consent is dynamic and should be obtained from a client for each service provided by teleaudiology to that client.

Offer information about teleaudiology as an option for service delivery and explain potential risks and benefits.

Inform the client about:

- the systems in place to protect their privacy and data security including storage and transmission
- 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
- 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
- involving other healthcare professionals
- sharing the client's health information with another party.



Resources

AudA National Competency Standards
ACAud Competency Standards
Code of Conduct
Audiology Australia Professional Practice Guide

1.5 Documentation

Use of teleaudiology as the means of delivering a hearing service should be recorded in the client's record.

Document the use of teleaudiology¹⁶ including:

- which mode of communication was used
- who participated in the service
- how consent was given (verbal, written or recorded)
- whether recordings were made, if these were shared or 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.



Resources

AudA National Competency Standards
Scope of Practice for Audiologists and Audiometrists
Audiology Australia Professional Practice Guide
Allied Health Professions Australia Telehealth Guide

1.6 Quality assurance

Feedback is an important part of quality assurance, continuous improvement and risk management processes.

Seek, record and evaluate client, clinical and non-clinical team members' feedback on teleaudiology services.



Resources

Audiology Australia
Professional Practice Guide

1.7 Insurance

Ensure Professional Indemnity Insurance arrangements cover teleaudiology services and settings.



Resources

Audiology Australia
Professional Practice Guide

2. Client and family-centred care

2.1 Engaging the client

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, including reliable internet.

Seek to understand a client's concerns about using teleaudiology due to:

- health status
- intellectual or emotional state
- confidence with and access to the technology
- need for another person to provide support or technical assistance
- cultural appropriateness and safety
- suitability of their environment and surroundings
- concerns about the service being impersonal.¹⁷

Accept the client's choice about using teleaudiology.

Reach agreement with a client for each service offered by teleaudiology.

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.



Resources

AudA National Competency Standards
ACAud Competency Standards
Audiology Australia
Professional Practice Guide

2.2 Working with others who support the client

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 in their appointments. Others may be in the same or a different location to the client, such as:

- significant other/s
- an Allied Health worker
- an Aboriginal and Torres Strait Islander Health Worker
- a personal care assistant
- a Teacher of the Deaf, a specialist teacher, an Auslan interpreter or spoken language interpreter.



Resources

AudA National Competency Standards

ACAud Competency Standards

Audiology Australia Professional Practice Guide

3. Preparing for the service

3.1 Client selection

Teleaudiology may be beneficial for some clients and not appropriate for, or desired by, others. A client's preference may change according to a particular hearing service, or because of their personal circumstances.

Apply professional discretion, clinical judgment and understand the client's preferences and hearing needs to establish whether teleaudiology is appropriate.

Be aware of the potential for unconscious bias to influence decisions about which clients are capable of, or most likely to benefit from, teleaudiology.

Consider the benefit of earlier access to hearing care using teleaudiology for clients whose circumstances may delay scheduling an appointment in-person.



Resources

Audiology Australia Professional Practice Guide

3.2 Preparing the client for the service

Ensure that the clients current hearing and communication devices as well as intermediary accessories such as smart phones/streamers or PC's (if applicable), are compatible with the technology that they are wearing and you are using for the Teleaudiology service.

Confirm that any applicable apps/software or firmware updates have been completed on the clients hearing and communication devices prior to your session if they are required for the session.

Consider a test run with the client before a teleaudiology session.

Provide written information 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 a professional support person such as Aboriginal and Torres Strait Island Health Worker or Maternal and Child Health Nurse to attend and who will make the necessary arrangements
- wants an interpreter (spoken language or Auslan) and who will make the necessary arrangements.

Encourage clients to use a room that affords privacy and has adequate lighting and minimal background noise.

Confirm costs associated with the appointment and how billing will be processed.



Resources

Audiology Australia
Professional Practice Guide

3.3 Working with other healthcare professionals

Teleaudiology expands the opportunities to involve other professionals to collaborate with the Audiologist or Audiometrist to enhance clinical outcomes.

Where appropriate, involve other healthcare professionals such as:

- another Audiologist or Audiometrist
- another Allied Health Professional such as a Speech Pathologist
- a medical professional
- an Audiometry Nurse
- an Allied Health assistant
- an Aboriginal and Torres Strait Islander Health Worker
- a trained assistant
- a clinical intern.

Other healthcare professionals may be in the same or a different location to the Audiologist or Audiometrist and the client.

Ensure all those 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 or Audiometrist.

The Audiologist or Audiometrist is responsible for all clinical decision-making and accountable for the quality and outcomes of services.



Resources

AudA National Competency Standards

ACAud Competency Standards

Audiology Australia
Professional Practice Guide

3.4 Allocate sufficient time for the service

A real-time (synchronous) session may take longer than in-person hearing care.

For clients unfamiliar with teleaudiology, more time may be necessary to ensure they are properly connected using their technology, comfortable with the mode of communication, and able to actively participate in the session.

Depending on the service, equipment or tasks may need to be set up by the client or significant others to prepare the environment for the hearing service.

Hearing assessments may take longer than in-person for technical reasons such as internet speed and audio quality.

During the session, people who rely on captions require time to read and digest the captions as they appear on their screen.

Additional time is required for an interpreter to process information between the Audiologist or Audiometrist and the client.

3.5 Manage the technology

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. Understand:

- the client's preferences, digital literacy and access to technology
- how to help clients and others to connect to teleaudiology
- how to adapt to the client's preferred technology or platform without compromising privacy and data security.

Develop a plan with the client about how:

- to communicate if the client is required to remove their hearing device during the teleaudiology session
- to convey a problem or concern, such as raising a hand or using the chat function to type a message.

Prepare for technical issues such as slow internet speed, poor audio quality, service interruptions or failure.

Develop a contingency plan with the client about what to do if the technology fails such as:

- completing the interaction by another teleaudiology mode or device
- rescheduling the appointment or meeting in-person.



Resources

AudA National Competency Standards

ACAud Competency Standards

Audiology Australia Professional Practice Guide

3.6 Consulting space

Ensure a complete set of functioning equipment is available including a microphone, camera, monitor, speaker and headset (or headphones) and that it is tested before the session.

Ensure that your consulting space is fit for purpose with:

- minimal visual distractions
- good lighting and audio quality
- no confidential information and images in view of the camera
- clinical equipment, props and other resources on hand for the session.



Resources

- AudA National Competency Standards
- ACAud Competency Standards
- Audiology Australia Professional Practice Guide


4. Considerations for the practice

4.1 Workflow

Introducing teleaudiology may require changes to workflow and roles and responsibilities.

Consult other colleagues and support staff about how teleaudiology may affect the workflow before, during and following a session, such as client triage, receiving and responding to digital messages from clients, appointment set up, billing and other administrative arrangements.

Document the implications of workflow changes for the roles and responsibilities of clinical and non-clinical team members.



Resources

- Audiology Australia Professional Practice Guide

4.2 Technical and communication skills

Delivery of high-quality services by teleaudiology requires a range of non-clinical skills.¹⁸

Identify skills, attributes, training and resources that clinical and non-clinical team members have or need to deliver teleaudiology successfully, such as:

- familiarity with the relevant apps/software, digital tools and compatibility of client devices required to carry out certain types of Teleaudiology appointments within the clinic.
- communication skills such as active listening and observation, empathy and giving clear directions
- understanding how to address potential communication barriers such as the absence or restricted view of natural gestures and body language cues, and navigating cultural sensitivities such as eye contact

- moderating speech patterns when using automated captioning by speaking 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.



Resources

- AudA National Competency Standards
- ACAud Competency Standards
- Audiology Australia Professional Practice Guide

4.3 Professional development

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 the Audiologist or 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 or Audiometrist.

Pursue personal professional development opportunities online.



Resources

- AudA National Competency Standards
- ACAud Competency Standards
- Scope of Practice for Audiologists and Audiometrists
- Audiology Australia Professional Practice Guide

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 and Audiometrists must consider the client’s preference for a consultation and their familiarity and access to digital technology. Professional discretion and clinical judgement should be used 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.

Clinical practice standards do not differentiate between in-person and teleaudiology service delivery models. The client’s expectations and the professional standards for Audiologists and Audiometrists using teleaudiology to provide hearing services are the same as those for delivering services in-person. Teleaudiology may not be appropriate if the same quality of care cannot be achieved.

Working with a trained assistant

The Audiologist and Audiometrist are responsible for:

- discussing and reaching agreement with the client about the involvement and role of other healthcare professionals 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

Synchronous appointments are preferred to asynchronous. Speaking to a client by phone or videoconference enables:

- rapport building with, and feedback to, a client in real time
- monitoring and feedback to a trained assistant working with a client in the same location.

2. Videoconferencing

Videoconferencing platforms with real-time captions are recommended to ensure communications between the parties are equitable and effective.

3. Client and family-centred care

Client and family-centred care is a core part of all audiology appointments. This involves “an approach to patient care that is respectful and responsive to the needs and individual values of any and all patients”.¹⁹

Teleaudiology can make it easier and more convenient for significant others to participate in an appointment because they do not have to be in the same physical location to provide emotional and/or practical support or to participate in counselling.

4. Social coaching and communication training

Counselling, social engagement support (social coaching) and communication training can be delivered effectively using teleaudiology including the involvement of significant others who are in a different location to the client.

5. Interprofessional care

Involving other healthcare professionals in a teleaudiology appointment contributes to better coordinated and integrated care, enhanced communication and convenience for the client.

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 and Torres Strait Islander Health Worker, Allied Health assistant or trained assistant.

The Audiologist and Audiometrist may send, receive and review results synchronously or asynchronously.

6. Assessing the outer ear system and otoscopy

Observation of the client’s outer ear and assessment of ear health is part of most hearing services. In a teleaudiology session, consider one or a combination of the following:

- using a web-based questionnaire
- arranging an assessment in a clinical setting by another Audiologist or Audiometrist or healthcare professional before the teleaudiology service, with results shared asynchronously
- supervising a trained assistant in the same location as the client to operate a video-otoscope and share results synchronously or asynchronously²⁰ with the Audiologist or Audiometrist
- using a technology such as a smartphone-enabled digital video-otoscope operated by the client under the supervision of an Audiologist or Audiometrist, after consulting the client about their confidence and capability to do so.

7. Ear impressions

At present, only Audiologists and Audiometrists can take ear impressions and this cannot be done using teleaudiology.

8. Wax management

It is not currently possible for an Audiologist and 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 the use of ear candling, cotton swabs or similar items.

Guidance for specific services

1. Hearing screening

Hearing screening can be safely and effectively performed synchronously or asynchronously using:

- available technology and devices to obtain an audiogram
- an online hearing screening test (audio and video)
- a validated functional assessment.

Working with a trained assistant, synchronously or asynchronously, an Audiologist and Audiometrist can perform hearing screening using:

- otoacoustic emissions test (OAE)
- a modified or shortened pure tone audiometry (PTA) assessment.

Some clients, such as children or a person with a disability, may need the support of a significant other.

2. Neonatal screening²¹ and diagnosis

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 be responsible for the use of equipment at their end (eg placing the headphones or ear cups, obtaining a seal) and then relay the measurement, synchronously or asynchronously, to the Audiologist to interpret.

3. Audiological assessment

While clients may express a preference to have their initial audiological assessment in-person, this is not always possible due to the client's location and circumstances, the risk to the client in delaying an assessment, or other factors such as travel restrictions.

An Audiologist or 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 or 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 for the Audiologist or Audiometrist to control remotely
- using telephone or internet speech tests.

Ambient noise levels must be low enough to test accurately. They 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 teleaudiology. Another option is to use a Loudness Discomfort Level questionnaire.

4. Hearing and assistive devices – fittings, adjustment, aftercare

A range of hearing devices can be programmed and supported remotely using advances in technology.

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

In a synchronous session:

- a trained assistant, in the same location as the client, can be supervised to operate a video-otoscope if required and/or set up probe microphones ready for real-ear-measures (REMs). The Audiologist or Audiometrist can then remotely ensure appropriate amplification and obtain an accurate match to prescription targets or other adjustments
- hearing device adjustment when the client has a compatible smart phone and app can often be done remotely. This can take into account sounds in 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:

- 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 intervention, such as complementary devices, training or counselling.

Questionnaires may be used synchronously or asynchronously to check Maximum Power Output and Loudness Discomfort Levels.

5. 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 and equipment in the client's location using to match tinnitus pitch and measure 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.

6. Vestibular assessment and management

While technology options to undertake vestibular function testing remotely are currently limited, assessment of symptoms and triage can be undertaken by teleaudiology using:

- telephone
- a questionnaire by 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.

7. 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 to be in the same location if the technology involves calibrated headphones or other equipment.

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.

“...the hearing care of the future is not location specific...and, in most cases, care will be a hybrid of in-person and remote.”

Ida Institute,
Future Hearing Journeys report, 2021

Appendix



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
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Stephen Williamson	Deafness Forum Australia
Ian Rimes	Consumer (Better Hearing Australia)
Jane MacDonald	Hearing Business Alliance
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Development of the Teleaudiology Guidelines

Funding for these Guidelines

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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 were informed by International Standard 13131: Health Informatics – Telehealth Services – Quality Planning Guidelines (2021)²² and address the quality characteristics identified by the Standard: accessibility, accountability, appropriateness, competence, confidentiality, continuity, dependability, effectiveness, efficiency, inclusivity, safety, transparency and usability.

Resource considerations

The use of technology in health care delivery offers potential cost efficiencies and convenience for the provider and the consumer.²³ However, there may be cost implications for both providers and consumers to invest in and maintain audiological or communications technology and

training to use a teleaudiology service. Together with reimbursement issues, these additional costs may present barriers to take-up.²⁴

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

“...the key to good practice does not lie in the technology but the methodology used to take advantage of the technology.”

Royal Institute for Deaf and Blind Children
(now, NextSense), Guiding Principles for Telepractice, 2016

Glossary of Terms



Asynchronous

An interaction that 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 Master's level university program. To maintain accreditation, an Audiologist must be able to demonstrate ongoing professional development over the previous 12 months. For more information, including recognition of qualifications obtained outside Australia, please visit Audiology Australia's website.

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. For more information, including recognition of qualifications obtained outside Australia, please visit *ACAud's* website and *HAASA's* website.

Audiometry Nurse

A registered or enrolled nurse who has successfully completed a post graduate course in Audiometry Nursing. Audiometry Nurses provide comprehensive, standardised and professional hearing health services to a variety of age groups including collaboration with newborn hearing screening programs, paediatric screening, health history, otoscopy, tympanometry and pure tone audiometry for children and adults, interpretation of assessment results, and appropriate management and referral.

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 Master's 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

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 and 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.

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, practicing 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 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 and creatively, and to assist clients and their families with the technology required for service delivery where required.

Hearing Service

Provision of audiological treatment, procedure, programs or other interventions. "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 provide 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 or Audiometrist and client are in the physical presence of each other and in the same physical location during the clinical encounter.

In-situ audiometry

Determining the hearing thresholds of wearers while they are wearing their devices, using stimuli that are generated by the hearing device (rather than the audiometer via headphones or inserts).

Interpreter

A person who translates speech orally or into sign language.

Interprofessional

Collaborative practice which occurs when Audiologists and Audiometrists work with other Audiologists or Audiometrists and/or other professionals. Also known as multi-disciplinary care.

Mode of Teleaudiology

The medium used to connect the Audiologist or Audiometrist and client when they are in different locations. Teleaudiology modes include the use of phones, smart devices (such as a tablet, laptop, desktop computer or captioned-video phone), email, text messaging, 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.

Provider

An entity that provides hearing services to people with hearing needs.

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

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 real time using telecommunications such as over the phone or by videoconference.

Teleaudiology

The use of telecommunications to provide audiological services.

A service delivery model that can be used to supplement and complement services delivered using the 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 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 modes of telecommunication.

Trained Assistant

A description that encompasses third parties who may support the Audiologist or Audiometrist in a hearing service. This may include those with clinical training and those trained to provide clinical or technical support.

Triage

A preliminary assessment of a client's need for treatment, the ability of the client to participate in the treatment, nature of treatment and how best to provide the treatment.

Unconscious bias

A bias created and reinforced by our background, cultural environment and personal experiences of which we are unaware. This can have a significant influence on our behaviours and decision making. Identifying and understanding unconscious bias contributes to more inclusive interactions and decisions based on evidence and facts, rather than intuitions and guesses.

“Telehealth is not intended to replace in-person consultation – it is an adjunct to help maintain continuity of care ...”

End Notes



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