THE UNIVERSITY OF MELBOURNE

Manual for Audiology Clinical Educators 2017

Department of Audiology and Speech Pathology

Melbourne School of Health Sciences

Faculty of Medicine, Dentistry and Health Sciences

The University of Melbourne

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General Information

Thank you for agreeing to supervise our Master of Clinical Audiology students. This manual has been prepared to give you information about the curriculum, clinical procedures taught at the University of Melbourne and our expectations of competencies. This page also outlines some important guidelines concerning feedback and documentation. Please note that this manual and the student assessment forms are also available from our website at http://audspeech.healthsciences.unimelb.edu.au/current_students/clinical_educators

Before the clinic

Prior to each clinic, students are required to set goals specific to that clinic. The goals are student driven, and may arise from previous supervisor feedback or self reflection. The goals must be specific to the type of clinic and be achievable within the placement time. Examples may include goals such as improving PTA technique to avoid false positives, improving ear impression taking technique etc. The students have been asked to negotiate these goals with the clinic educator at the beginning of each placement. The educator may then be able to prioritise certain elements of the clinic in order to give the student a chance to achieve their goals especially in clinics where time is short. If the placement is longer than one day, a review period in relation to the goals is also encouraged.

Student Feedback

Please provide each student with constructive verbal feedback concerning their progress in clinics, preferably at the end of each day. Particular attention should be paid to the outcome of the goals set at the commencement of the placement.

Student Assessment

Please fill in a student assessment form for each student at the end of the clinic placement. We do not expect this process to take up a great deal of your time – summary information is sufficient. The information provided by you on these forms is not used as part of the formal assessment of students but it provides us with useful information concerning both the experience gained by the student during each placement and progress in developing clinical skills. These forms are also sent on to the students as a formal record of their experience and progress. There is a copy of the form at the end of this booklet. Completed assessment forms can be sent to Gavin Hawkins either electronically at aud-clinplacements@unimelb.edu.au or by mail to Gavin Hawkins, Department of Audiology and Speech Pathology, 550 Swanston Street, The University of Melbourne, 3053.

Clinical Experience Sheets

Each student will bring a clinical experience record sheet to the clinic, to be completed by the supervisor. The form has been designed to log the clinical experience hours according to the definition put forward to the ASA in July 2009 by a committee of representatives from all the Australian universities providing accredited audiology programs. This definition was modified slightly at a meeting by the same group in May 2010. Please note that observational hours are not recorded. However, the number of hours of direct adult and paediatric clinical assessment, indirect assessment and professional activities are recorded. The definition of these types of activities is below.

LOGGING CLINICAL EXPERIENCE HOURS FOR MASTER OF CLINICAL AUDIOLOGY STUDENTS

Student clinical experience is logged on the audiology clinical experience record sheet under three categories:

- **Direct client/patient contact** (subdivided into hours relating to experience with adult clients/patients and paediatric (<8 years developmental age) clients/patients
- **Indirect client/patient contact**
- **Professional activities**

Clinical hour requirements

In order to satisfy the national clinical hour requirements for clinical audiology qualifications in Australia, each student must complete **at least** 250 clinical experience hours. This total shall include:

- **at least** 150 hours of direct client/patient contact, consisting of:
  - at least 100 hrs of direct adult client/patient contact, and
  - at least 30 hrs of direct paediatric (< 8 years developmental age) client/patient contact,
- no more than 50 hours of professional activities

As this is a national requirement, results for Clinical Audiology B and /or Paediatric Audiology B will be withheld until this requirement is met.

In addition, audiology students at the University of Melbourne are required to attend **all** clinic placements for which they are scheduled. **Students should note that satisfactory attendance at clinics is a hurdle requirement for Clinical Audiology A, Paediatric Audiology A, Clinical Audiology B and Paediatric Audiology B.** A student must provide a medical certificate or a statutory declaration for any absence from a clinic. Failure to do so may result in failure of the clinical attendance hurdle requirement of the relevant subject.

Direct client/patient contact

Direct client/patient contact is defined as activities performed by the student, under supervision and in a clinical setting, that:

- directly involve the client/patient, and
- directly contribute to the management and/or outcomes of that client/patient.

Examples include the student:

- taking a case history (this could also be taken from the client/patient's care-giver or significant other),
- preparing the client/patient and/or the audiological equipment for testing. For example, instructing the client/patient on a test protocol, programming the client/patient's NOAH file and hearing aid, or placing electrodes on the client/patient,
- performing audiological assessments,
- interacting with the client/patient and/or the clinical educator in a manner that directly contributes to the obtaining of reliable test results. For example, performing paediatric VRA/VROA distraction, performing alerting tasks during vestibular assessment, identifying evoked potential waveforms during acquisition, real-time troubleshooting of audiological equipment and/or procedures, etc,
- analysing, integrating, and interpreting audiological test results,
- providing feedback on audiological test results (this could be provided to the client/patient's care-giver or significant other),
- providing audiological counselling (this could be provided to the client/patient's care-giver or significant other), and
- teaching the client/patient how to use a hearing aid/ALD etc (this could be provided to the client/patient's care-giver or significant other)

Indirect client/patient contact

Indirect client/patient contact is defined as activities performed by the student, under supervision and in a clinical setting, that:

- do not directly involve the client/patient, but directly contribute to the management and/or outcomes of that client/patient.

Examples include the student:

- preparing, reviewing or maintaining the client/patient's case file,
- critically discussing the client/patient's case file with the clinical educator,
- writing the client/patient's audiological report when the student was directly involved in the assessment of that client/patient,
- completing the order forms for the client/patient's hearing aids, ALDs etc,
- directly interacting with associated professionals during the management of the client/patient (e.g. general practitioners, otologists, oto-neurologists, paediatricians, speech pathologists, psychologists, occupational therapists, etc), and
- directly assessing and managing simulated clients/patients (e.g. standardised patients/clients and/or computer-based simulations of patients/clients) where these simulations have been deemed acceptable by the university programs.

Professional activities

Professional activities are defined as activities performed by the student, under supervision and in a professional setting, that:

- do not directly involve a client/patient, but
- improve the students ability to contribute to the management and/or outcomes of clients/patients, and/or
- contribute to the profession of audiology.

Examples include the student:

- critically discussing with his or her clinical educator the literature that directly affects the management of the student's client/patient (especially with regards to evidenced based practice),
- writing a client/patient's audiological report when the student was not directly involved in the assessment of that client/patient (note: this would only occur at the request of the clinical educator, and the final report for the client/patient would be written by that clinical educator),
- providing professional education to the community and/or other professionals about clinical audiology (e.g. presenting a workshop to medical doctors on how to interpret an audiological report),
- directly interacting with his or her clinical educator to set the learning goals prior to the clinical placement and to receive performance feedback after the clinical placement,
- completing OH&S procedures, e.g. undergoing a clinic's OHS induction and performing elements of that induction such as infection control, and
- performing biological calibrations of audiological equipment prior to a clinical session.

Contact that can NOT be counted as clinical experience hours

Clinical experience hours can NOT be obtained by:

- passively observing any activity,
- participating in non-audiological discussions with a clinical educator and/or client/patient,
- attending staff meetings, or
- taking allocated breaks, e.g. lunch, morning/afternoon tea.

CPD Points

You can claim CPD points for supervision of students as long as you are not employed specifically to teach students. A form designed for documenting hours of supervision of masters' students is available from the CPD section of the Audiology Australia website. Please refer to www.audiology.asn.au for further details.

Contact Details

For general enquires please contact Gavin Hawkins on 8344 6611or by e-mail aud-clinplacements@unimelb.edu.au . If you have any serious concerns regarding student progress, please contact Dr Jessica Vitkovic on 9035 5320 or by email jessicav@unimelb.edu.au

Student Guidelines – Confidentiality & Dress Standards

(Given to and discussed with all first year students on commencing the course)

THE UNIVERSITY OF MELBOURNE

Department of Audiology and Speech Pathology
Master of Clinical Audiology

Confidentiality Obligations for Audiology Students

When working in clinics and in clinical research, clinicians and students are bound by legal and ethical obligations to maintain patient confidentiality. The Australian Government and all State Governments have laws that control the use and disclosure of patient information in the health care sector. The Audiological Society of Australia has a Code of Ethics and a Code of Conduct which you are required to adhere to.
Audiology Australia Code of Conduct and Code of Ethics (2013)
http://www.audiology.asn.au/

Prior to working in clinics you are required to:

1. Read this document which describes your obligations in plain language (next page)
2. Complete a short online training course through the Office of the Health Services Commissioner (Vic) through the link Health Records Act (Vic) Training Online Portal
This training must be completed by the end of March. When you have completed the course you should print the certificate and show it to Level 1 Reception who will sign off your completion.
3. Some other external clinics may require students to sign a separate confidentiality agreement, which may include protection of their business or commercial information.

Background:

Confidentiality means the obligation to keep secret any knowledge obtained under the assumption that it will not be revealed.
All patients and clients in the University of Melbourne Audiology Clinic and all off-campus clinics are legally entitled to confidentiality of **all** their personal and medical information. This includes their name, age, address, any personal characteristics or behaviours, relationships, incidental personal information, all test results, and any other medical, social, or socioeconomic information. It also includes the fact that they have attended the clinic.
Throughout the course, students will be exposed to personal and medical information about patients and clients, including information that is both relevant and not relevant to their audiological issues. Students need to use and keep certain patient information, files and test results for their learning, and need to develop an understanding of many non-audiological medical conditions and social influences on patient outcomes.
Student access to patient files and other information occurs under strict guidelines. Detailed education around ethical theory and professional behaviours is provided in second year.

Student Clinic Confidentiality Obligations (plain language)

- I will respect the right of every patient or client to confidentiality regarding anything I learn about them in the clinic, and I will not reveal any identifiable personal, audiological or medical information.
- I will only access, read or reproduce, in electronic or hard copy, those patient records directly related to my clinical responsibilities, and only with the express permission of my supervisor.
- I will ensure all personal identification is removed from any copy of information before I remove it from the clinic. This includes names, dates of birth, addresses, referral details, dates attended and the clinic details.

  Because students need to identify retained information from clinics for their own learning, documents can be labelled without personal identification, for example using something like the following:
  - *Male or female (if gender is relevant) and age*
  - *Patient 1, 2, 3 etc., and age*
  - *Patient's first name or initials and age*
- When I discuss my clinic experience or specific patients with teachers or other students I will maintain respect and confidentiality. I will not have such discussions in public places or clinic waiting rooms. I will not use patient names in these discussions unless necessary.
- I will destroy any retained documents of patient information when I no longer need them for my education (i.e. at the end of the course).
- If I am not sure about my responsibilities regarding confidentiality or any other ethical issue I will consult with my supervisor or another member of the academic staff.

Dress Standards

You are expected to maintain a professional demeanour and observe certain standards of dress and grooming whilst on clinical placement. This standard encompasses respect for all patients as well as health and safety considerations. Clinical Educators will reinforce this expectation.

- Clothing must be clean, tidy and professional in appearance.
- No cleavage or underwear should be visible. Clothing should not be provocative, skimpy or revealing.
- Denim, jeans, shorts and cargo pants are not permitted. Tailored three-quarter trousers are acceptable.
- Males should wear long trousers and buttoned shirts or tidy polo shirts.
- Trousers should not to expose any skin in the midriff region when bending over.
- Skirt and dress length should sit close to or below the knee, including when sitting.
- In some settings, open footwear may be acceptable, but thongs are not permitted. Enclosed footwear with non-slip soles should be worn in hospital environments.
- Hair should be neatly groomed. Long hair must be tied back because of the risk of it touching the client or the equipment.
- Fingernails should be clean and neatly trimmed to minimise infection risk.
- Jewellery and accessories should be kept to a minimum, also to minimize infection risks.
- Facial piercings and visible tattoos are generally not permitted, as they can be distracting and even distressing for some clients.

Degree Overview: Master of Clinical Audiology 2017

First Year

Acoustics	Sem 1
Anatomy & Physiology	Sem 1
Pathologies of the Auditory System	Sem 1
Perception of Sound & Speech	Sem 1
Hearing Devices and Rehabilitation A	Year-long
Clinical Audiology A	Year-long
Paediatric Audiology A	Year-long
Electrophysiological Assessment A	Sem 2

Second Year

Electrophysiological Assessment B	Sem 3
Research Methods in Hearing Science	Sem 3
Clinical Audiology B	Year-long
Paediatric Audiology B	Year-long
Hearing Devices and Rehabilitation B	Year-long
Independent Studies in Audiology	Year-long
Cochlear Implants	Year-long

The University of Melbourne Audiology Clinic: Clinical Protocols for General clinics

Overview

The University of Melbourne Clinic offers a range of diagnostic assessment and rehabilitative services to patients from the age of seven years onward. The service accepts referrals from many sources including general medical practitioners, medical specialists (otologists, neurologists etc), speech pathologists and other audiology services. Self-referred patients are also seen.

Mission Statement

The mission of the University of Melbourne Clinic is to provide audiological investigation and to make appropriate recommendations using procedures that are based on a thorough investigation of current literature and practice and that are subject to quality assurance.

Services Provided

General audiological assessment

All patients referred to the clinic have the following assessments:
A questionnaire/interview concerning history details that are relevant to hearing and balance

1. Pure tone audiometry
2. Speech recognition testing
3. LiSN-S (HC) with and without amplification
4. Immittance testing (reflexes not always performed)

If indicated, other assessments are carried out in order to determine the audiological status of the patient. If it is not possible to complete these assessments at the first appointment, they are scheduled for a later date. These assessments include:

- Auditory Brainstem Response (ABR) testing (see neuro-otologic assessment)
- Otoacoustic emission (OAE) testing
- Cortical Auditory Evoked Potential (CAEP) testing (also known as CERA testing)
- Auditory processing disorder (APD)

A report containing a copy and summary of the results with recommendations for management is produced for each patient.

If the patient is going on to no further testing/appointments and a hearing loss has been identified, they should be put on the annual recall list to monitor for any changes.

Referral procedures

Patients who have one or more of the following symptoms/findings require ABR testing:

- Sensorineural asymmetry of 30dB or greater (e.g. 10dB at three adjacent frequencies)
  *unless significant hearing loss - see ABR protocol
- Unilateral symptoms such as fullness, distortion and tinnitus
- Mild imbalance (which is insufficient for vestibular referral)
- Unusual reflex findings
- Neurological indications where VIII nerve involvement may occur (including multiple sclerosis, diabetes mellitus associated neuropathy, degenerative ataxias, stroke, head trauma)

Following ABR testing, referral to an ENT specialist is recommended regardless of the result (this is done by a letter to the patient's GP).

Patients who present with any of the following symptoms/ results are recommended to see an ENT specialist (this is done by a letter to the patient's GP):

- Symptoms/results associated with retrocochlear pathology (i.e. facial weakness or those that warranted ABR testing)
- Conductive hearing loss &/or any evidence of middle ear complications e.g. cholesteatoma, chronic discharge, persistent dry perforation, otalgia, persistent blocked feeling in ears
- Unexpected sensorineural hearing loss
- Pulsatile tinnitus

Patients who have vestibular symptoms should be booked in to the vestibular clinic

- ABR is part of vestibular test protocol.

Patients who have one or more of the following symptoms can be booked for APD testing:

- When a patient reports significant difficulties hearing in noise despite normal test results.
- This does attract an out of pocket expense and is a 3-hour appointment.
- The battery includes ABR, OAEs and other measures of processing ability (handout at reception).
- If a processing disorder is diagnosed the clinic offers specific remediation programs and/or advice. Sometimes the fitting of an FM system is recommended.

Cortical Auditory Evoked Potential (CAEP) and Otoacoustic emission (OAE) testing:
CAEP and OAE testing is carried out when nonorganic hearing loss is suspected.

Clinic protocol

1. Pure tone audiometry

Procedure for obtaining pure tone thresholds

Determine air conduction (AC) thresholds using the modified Hughson-Westlake step procedure outlined below. If the history indicates that one ear hears better than the other, start testing with the better ear.
Start the testing with a 1000 Hz tone

1. Present the tone at a clearly audible level (30 dB HL for those with no apparent hearing loss and 70+ dB HL for those who have obvious difficulty hearing)
2. If no response is obtained, increase the level until the patient responds
3. Once the patient responds, decrease the intensity in 10-dB steps until there is no response
4. When the patient fails to respond, increase the intensity in 5-dB steps until a response is obtained
5. Repeat steps 3 and 4 until the threshold is obtained
6. The threshold is defined as the lowest level at which at least 2 responses are obtained out of 3 ascending trials

Test frequencies are 1000, 2000, 3000, 4000, 6000, 8000, 250 and 500 Hz.

Determine BC thresholds for each ear at frequencies from 500 to 4000 Hz where the AC threshold is 20 dB HL or greater

Bone conduction is tested at 250Hz only it is considered that it might give some clinically useful information. This includes the following situations:

- when there is a conductive loss at one or more of the higher frequencies
- when a probe effect is obtained on acoustic reflex testing
- in order to determine whether the AC threshold at 250 Hz in the opposite ear needs masking
- when the AC threshold at 250 Hz doesn't seem to fit with the rest of the audiogram

Masking: Hood's technique or plateau seeking

The NBN listening check only needs to be carried out for the first masked threshold and then each time there is a change of transducer. If the NBN threshold is consistent with the non test pure tone threshold on the audiogram for these checks, the masking can be presented at the non test threshold + 10 dB for all other test frequencies.

Obtain the unmasked pure tone threshold in the test ear
Introduce NBN at threshold level to the non-test ear (ask the patient when the masking noise is first heard) **
Check that the masking threshold is consistent with the non-test pure tone threshold on the audiogram
Wind up the masking level by 10 dB
Present the tone again at the unmasked threshold level

- If the patient responds, increase the masking by 10 dB and present the tone at the same level as before
- If the patient does not respond, increase the tone in 5 dB steps until a response is obtained

This is the new threshold.

Central masking

The central masking effect should be included in the masked threshold for bone conduction thresholds, but not for air conduction thresholds.

The occlusion effect
The occlusion effect must be considered when obtaining masked bone conduction thresholds at 250, 500 and 1000 Hertz. There are two possible approaches to this:
First approach (used when there is a chance that bone conduction masking won't be required)

- Obtain all unmasked thresholds unoccluded (with no headphone on, or tubephone in, the opposite ear)
- Set up the transducer ready for masking, then turn the bone conduction dial down by the amount of the maximum occlusion effect at the test frequency (30 dB at 250 Hertz, 20 dB at 500 Hertz and 10 dB at 1000 Hertz)
- Increase the tone in 5 dB steps until a response is obtained, then continue with Hood's technique

Second approach (used when it is certain that masking will be required)

- Obtain all unmasked bone conduction thresholds occluded and mask as necessary.

Dealing with '5 for 10' masking patterns
This pattern occurs when there is a 5 dB shift in response for every 10 dB increase in masking over at least a 40 dB increase in masking. When this occurs, first repeat the masking procedure as the pattern may not occur again. If the pattern persists:

- Allow 5 dB for central masking and select a threshold value near the point where the pattern started

2. Speech Recognition Testing – AB words

Obtain only a maximum score for each ear unless a full speech audiogram is considered to be clinically useful.

Full curves are required in cases where:

- There are inconsistent results e.g. non-organic hearing loss is suspected
- It is requested by the referring doctor/specialist or agency

Expected Maximum Scores

Degree of sensorineural hearing loss	*Hearing loss (dB HL)*	***Predicted** maximum speech score*
Normal	≤15	100%
Mild	20 – 40	100%
Moderate	45 – 65	75%
Severe	70 – 90	50%
Profound	>90	25%

Level of the maximum score
For all configurations of loss, the level of max score in dB HL should be close to the average of the 1 & 2 kHz thresholds + 30. (The level of the max score on the normal curve is 30 dB HL)

Speech Masking
In order to save time in the clinic, speech masking is performed at all times during speech recognition testing (i.e. assuming masking is required all the time).

Calculate the amount of masking required:
Derived from the traditional speech masking calculations the following rules apply:

When using headphones:
Masking level required = presentation level (dB HL) – 40 (IA) + air bone gap in non-test ear + 10 + calibration factor.

When using insert earphones:
Masking level required = presentation level (dB HL) – 60 (IA) + air bone gap in non-test ear + 10 + calibration factor.

Quick check for overmasking (The Potter Method):
If the sum of the air-bone gaps in the two ears is less than or equal to 50, you can use headphones for speech recognition testing/masking
If the sum of the air-bone gaps in the two ears is less than or equal to 90, you are not overmasking with insert earphones.

Testing for Speech Rollover (optional)

- Significant rollover = >20% decrease in score when intensity increased at 20 dB above maximum point.
- To test for, if possible, present at 40dB above maximum.

3. LiSN-S

The High Cue (DV90) condition is performed on all patients as a test of their ability to listen in background noise.

<u>If normal hearing</u>
- No PGA. Normal results – no follow up required. Abnormal results – APD testing recommended.

<u>If hearing loss (no hearing aids)</u>
- Normal without PGA – no further testing required
- Abnormal without PGA – follow up with PGA (results used to guide a discussion concerning hearing aid fitting)

<u>If hearing loss (with hearing aids)</u>
- Normal with PGA (hearing aids helpful/counselling tool)
- Abnormal with PGA (can be used as counselling tool/realistic expectations)

4. Immittance testing

Tympanometry
Performed on all patients unless ear that is discharging, is painful, has a foreign body lodged in the external ear canal or has recently had surgery (in past 6 months). If there is any doubt or concern, obtain otological approval prior to performing the testing.

Acoustic reflex testing (not routinely done)
Acoustic reflex testing is carried out in the following circumstances:
- When there is a significant conductive component (<u>≥</u>15dB) in one or both ears *except* if there is a type B tympanogram
- When the audiological test results are inconsistent/unexpected including suspected nonorganic hearing loss.

Acoustic Immittance Testing

Contraindications

Immittance testing should not be performed on an ear that is discharging, is painful, has a foreign body lodged in the external ear canal or has recently had surgery (in past 6 months). If there is any doubt or concern, obtain otological approval prior to performing the testing.

Tympanometry

Recording/classification of tympanograms

Record the equivalent volume, peak compliance and peak pressure, and Jerger Type (A, B or C etc.)

Tympanogram types:

A: Normal peak compliance (0.3 to 1.6 cm^3) and normal peak pressure (≥ -100 daPa)

Variants:

As (peak compliance < 0.3 cm^3)

Ad (peak compliance > 1.6 cm^3)

B: No peak. Only equivalent volume is recorded.

Guideline for distinguishing between low volume and high volume type B:

For adults, if equivalent volume is > 2.0 probably high volume. You usually need to consider other information e.g. history, otoscopic exam, equivalent volume of other ear (if intact tympanic membrane) in making this decision.

C: Normal peak compliance (0.3 to 1.6 cm^3) and negative peak pressure (<-100 daPa)

Variants:

Cs (peak compliance < 0.3 cm^3)

Cd (peak compliance > 1.6 cm^3)

Acoustic reflex testing

Acoustic reflex testing is carried out in the following circumstances:

- When there is a significant conductive component (≥15dB) in one or both ears *except* if there is a type B tympanogram
- When the audiological test results are inconsistent / unexpected including suspected nonorganic hearing loss.

Procedure

- Adjust pressure to the peak pressure from the tympanogram.
- Begin testing at 80 dB at 500Hz in the contralateral mode. Increase intensity in 5 dB steps until a clear reflex is seen. Repeat presentation at the lowest level where there appears to be a reflex. If it is repeatable, accept that as the threshold. If not, ascend 5 dB and check at higher level(s): it is necessary to see a repeatable response at the level that is going to be noted as the reflex threshold. Repeat this procedure for 1000Hz and 2000Hz contralateral reflexes.

Further points to note;

- Acoustic reflexes at 4000Hz are generally no longer tested, unless it is thought it may add useful extra information to the case, (e.g. if nonorganic hearing loss is suspected, etc.)
- If all reflexes are present at normal levels, the last set of ipsilateral reflexes does not need to be tested
- Consider adjusting the starting point for testing reflexes from 80, if the pattern of reflexes emerging suggests that a different starting point may be more appropriate (e.g. if the reflex occurs at 75 for the first one, then use a lower starting point)
- Consider screening reflexes at 105 if you can confidently predict that the reflexes will be absent

Goals for adult clinical testing

Semester 1 Goals

Procedures/Testing
To know basic test procedures and be able to carry these out independently

- Be ready to start clinic on time, having checked all equipment and tidied the room as required
- Be able to perform air conduction pure tone testing using appropriate threshold seeking technique, know when and how to test bone conduction.
- Know when masking is required, and be able to use Hood's technique to mask.
- Be able to predict speech curves, present speech material and score responses accurately.
- Know how to perform speech masking:
- Know whether headphones or insert earphones are required
- Be able to calculate the required level of masking and apply appropriate dial conversions.
- Be able to perform tympanometry and note down correct tympanogram type.
- Be able to apply correct technique for obtaining accurate reflex thresholds and obtain accurate thresholds

Interaction with Client

- Be able to obtain a straightforward history, elaborating on relevant areas.
- Be able to explain to the client clearly and concisely the test procedure and the required response
- Be friendly, mature and have a professional approach to the client
- Be punctual and appropriately dressed.

Integration

- Be able to interpret the audiological results obtained in terms of type and site of disorder
- Be able to identify inconsistencies in audiometric findings

Semester 2 Goals

Procedures/Testing
To be able to obtain accurate test results on a range of adult cases, with only minimal help required for non-routine complex cases.

- Be ready to start clinic on time, having checked all equipment and tidied room as required.
- Be able to obtain accurate pure tone thresholds. This includes being able to structure presentations to avoid false positives and take appropriate action when these occur, be aware of inconsistent and unexpected responses (including patients with suspected non-organic hearing loss) and deal with these appropriately.
- Be able to mask appropriately this includes;
- Allowing for the occlusion effect, skirt of the filter and central masking.
- Be aware of masking dilemmas and deal with these appropriately including using insert earphones where necessary.
- Be able to obtain accurate speech recognition curves by presenting speech at appropriate levels, with masking used appropriately. Be able to relate speech results to pure tone audiogram.
- Be able to obtain accurate tympanograms efficiently, using correct technique, including modifying the technique for type Ad tympanograms; be able to obtain seals and use appropriate strategies when seal is difficult to obtain.
- Be able to obtain reflex thresholds accurately and efficiently; be able to deal with fluctuating resting compliance, be able to recognise biphasic and reversed reflexes and artefacts.

Interaction with Client

- Be able to take a comprehensive history elaborating on all relevant areas, using clear questions and addressing clients concerns. Be able to adjust style, rephrase questions and follow up as necessary.
- Be able to explain the test procedure and required response to the client. Be able to adjust instructions, rephrase, re-emphasise where necessary (younger children, non-English speaking background etc)
- Be able to explain results of testing to client in an appropriate manner, relate results to client's presenting concern, make appropriate recommendations
- Be responsive to and considerate of the client; be assertive where required; maintain friendly and professional approach
- Behave in a mature manner at all times, demonstrate initiative (within constraints imposed by supervisor), be punctual and appropriately dressed.

Integration

- Be able to analyse and inter-relate all the test results
- Be able to recognise inconsistencies in test results and take appropriate action
- Be able to integrate the results and to understand the implication of the test results
- Be able to formulate appropriate management strategies
- Be able to write clear well-organised reports, which are submitted within a week.

Semester 3 and 4 Goals

Procedures/Testing
Be able to work independently to obtain accurate results on all adult cases including non-routine complex cases.

Details as for Semester 2

Interaction with Client

- By this stage, the student should be carrying out the clinic in an independent professional manner in terms of history taking, instructions, client interaction and professional conduct. See details in Semester 2 information.
- Results of testing should be discussed clearly and accurately with client using appropriate terminology. This includes:
  - being aware of client's reactions and being able to modify own behaviour and structure of feedback in response to this
  - checking that client understands results and reasons for recommendations
  - adequately answering client's questions

Integration

- An extension of Semester 2 goals in terms of being able to integrate all results into conclusions regarding auditory pathology and being able to formulate appropriate management strategies
- Be able to communicate appropriate information (written reports) to various professionals, with wording and terminology appropriate for the recipient

Academic Hearing General Procedures
(updated February 2017)

Information for External Clinical Educators of the University of Melbourne Audiology Students.

The following document outlines the general approach to adult audiological rehabilitation, taken at Academic Hearing. This document acts as a guide as to what students will have been exposed to, and participated in at their internal clinics.

Needs Discussion Appointment (either coinciding with the audiogram or following soon after)

- In-depth discussion about clients' communication needs; communication partner/significant other/family member involved in discussion. Where appropriate, establish COSI goals.
- Discuss most appropriate options with client and companion (ALD's/modified phone/Hearing Aids/ Group and individual communication education classes)
- Discussion about other factors relevant to the rehab program including vision, manual dexterity, pacemaker or other programmable implants fitted, mobile phone use.
- Discussion about devices available: variety of styles including relevant pros and cons, relevant features/options available.
- Discussion around client's budget (written quote is given).
- Realistic expectations outlined along with timeframes of what to expect and what can be achieved during rehab program.
- Impression/s (if required) are taken of the ear/s. (Students may take normal impressions if the supervisor judges this to be appropriate, but deep impressions (IIC) or involving mastoid cavity are to be done by supervisor). Mastoid cavities can be packed if clinician is experienced in this.

Fitting Appointment (hearing aid fitting)

- Client is introduced to hearing aids and oriented to main features.
- Physical fit assessed including comfort.
- Hearing aids set up with correct acoustic parameters with desired prescription (if validating fit with IG, use NAL or DSL prescriptions)
- Run/activate feedback canceller if required.
- REIG is performed routinely, (at 60dB SPL), using ISTS signal. Adaptive features of hearing aid can be left on for this. Insertion gain conducted at typically 0^{o} speaker azimuth with binaural fitting (45^{o} for monaural fitting).
- Match aids to IG target within 3-5dB from 500Hz to 6kHz.
- Adjust for subjective listening comfort and clarity of client including that of their own voice. Drop to appropriate acclimatisation level for new or experienced user.
- Check tolerance to loud noisemakers, (e.g. loud speech, clapping, cup/spoon), with both aids on if binaural fitting. Adjust MPO or appropriate noise reduction features if required.
- For binaural fittings, check subjective balance.
- Perform any relevant live voice or recorded speech measures.
- Commence hearing aid management instructions: prioritise insertion/removal and batteries (cleaning and dehumidifying addressed).
- Re-visit rehabilitation process and what is required by client and their support network along with role of clinician and clinic.

Follow up/Review Appointments

¨ Review progress/experience with the aid/s and adjust amplification/settings if necessary. Address any comfort/clarity/occlusion/management etc. issues.

¨ Observe client's hearing aid removal, insertion and battery change techniques and coach accordingly (ie reinstruct or encourage).

¨ Encourage client's usage patterns based on Data Logging and self-reported usage behaviour.

¨ Assess COSI/communication goals and identify any changes in goals following initial period of rehab program.

¨ Discuss and implement any further changes in hearing aids or additional technology that may be required to continue to meet goals.

Annual Review Appointment

¨ Re-Establish and Re-Assess outcomes formally using COSI and IOI-HA.

¨ Speech recognition (optional): evaluate AB words in quiet e.g. at 65dBSPL, (aided). May choose to test at softer levels, or in noise if appropriate. Useful also for counselling.

¨ Clean and Service hearing aids.

¨ Audiogram updated

¨ IG to check output of aid(s)

¨ Adjustments as required (to re-match target, to address client feedback, to better achieve COSI goals) including MPO check.

Goals for adult rehabilitation clinics

	By End of 1st Year	By End of 2nd Year
First Appointment (Needs Discussion):		
Explanation of hearing rehabilitation program	Guidance	✓
Lead-in discussion of communication ability	Guidance	✓
Administer pre-fitting COSI	✓	✓
Discuss appropriate expectations	Guidance	✓
Consider ALDs	Guidance	Guidance
Discussion/selection of hearing aid/s:		
Monaural/Binaural	✓	✓
Style	✓	✓
Features	✓	✓
Accessories	Guidance	✓
Selection of specific aid/s including cost	N/A	N/A
Take ear impression/s (excluding deep/IIC)	✓	✓
Decide on venting/earmould characteristics	✓	✓
Order hearing aid/s once selected and/or order ear moulds	Guidance	Guidance
Second Appointment (Fitting):		
Create client file in NOAH, including audiogram (if required)	✓	✓
Calibrate probe tube (REM)	✓	✓
Pre-program aid/s using audiogram in NOAH	Guidance	Guidance
Fit aids in ears (incl. cutting ear mould tubing if BTE)	✓	✓
Perform insertion gain		
60 dB SPL, ISTS,	✓	✓
Matching targets and using subjective comments	Guidance	✓
Perform insertion gain for other programs/other levels	✓	✓
MPO checks (environmental sounds)	✓	✓
Check balance between L and R (if bin.)	✓	✓
Coach client in correct insertion and removal of aids.	Guidance	Guidance
Demonstrate and observe client's correct battery usage.	Guidance	✓
Demonstrate to, and observe client, cleaning/maintaining of the aid/s	Guidance	✓
Payment organised	N/A	N/A
Review Appointments:		
Discuss client's experiences	✓	✓
Monitor management of hearing aids (insertion/cleaning/batteries).	Guidance	✓
Assess performance of hearing aids based on communication goals	Guidance	Guidance
Make adjustments to further achieve goals.	Guidance	Guidance
Coach and encourage client's progress as required	Guidance	✓
Annual Review Appointment:		
Discuss experiences	✓	✓
Re-establish and readminister COSI/IOI-HA	Guidance	✓
Update audiogram	✓	✓
Perform real ear measurements.	✓	✓
Administer aided speech test	Guidance	✓
Discuss future management (incl. ALDs)	Guidance	✓

Guidance: assistance may be required in some situations

PAEDIATRIC TESTING PROTOCOLS

VRA

- Aim to obtain separate ear information
- Testing down to 15 dBHL only for VRA (as opposed to 10 dBHL previously).
- Starting intensity 55 dBHL
- 1kHz 55dB NBN audibility check for VRA - if the child gives a clear head turn, reward with the puppet – if no turn, do not reward, but if other clear behavioural response, continue to conditioning.

Play Audiometry

- Test order for Play audiometry (for very young children) - 1kHz then 4 kHz in 1st ear, then 4kHz, then 1 kHz 2nd ear. Then 500Hz in both ears, followed by 2 kHz.
- No bone conduction testing until AC thresholds are 20dBHL or worse (as per revised adult protocol).
- No bone conduction testing at 250Hz unless clinically indicated.

Paediatric Masking:

- **Select the threshold/s to be masked.**
    - Most significant likelihood of SN loss.
    - Most likely and/or largest cond. loss.
- **Establish unmasked threshold, NB. not a screening level and always set up occluded (must therefore do otoscopy as will be using insert for masking).**
- **Choose a level of masking which:**
    - Is ideally 30dB above the non-test ear air conduction threshold.
    - Will not cross to the test ear (overmasking).
- **Seek a threshold, beginning at the unmasked level and ascending in 5dB steps.**
    - Often the masking noise creates uncertainty in the child.
    - The task can be clarified by reconditioning. Present the tone at a higher level (+ 30dB or so), establish a response, and then return to threshold and ascend.
    - If the threshold changes by more than 5dB, always recheck by ascending a second time.
- **Calculate the shift in the tone threshold.**
- **If the shift is < half the sensation level of the masking, the response is coming from the test ear:**
    - Up to 10dB shift for 30dB of masking
    - Up to 5dB shift for 20dB of masking
- **If the shift is ≥ half the sensation level of the masking, the response could be from either ear:**
    - Need to add masking (usually in 10dB steps) to achieve a plateau.

OR if not a clear 30 for 30 shift, may choose to start Hood's technique from 10 dBSL of masking.

VRA

1. ESTABLISHING STARTING LEVEL (AUDIBILITY CHECK)

Ensure the test stimulus is audible before pairing

- Using 1 kHz narrow band noise, present at 55dBHL.
    - If a clear head turn is observed, you *can* reward this response. You are now ready to start conditioning.
    - If you observe a behavioural response, but no clear head turn, do not reward, but you are now ready to start conditioning.
    - If the child does not give any behavioural response, increase the intensity, and/or try a different frequency. If a response is observed, use this intensity as your starting level for conditioning.
    - If still no response after an increase in intensity, proceed with conditioning but with caution at the louder intensity.

2. CONDITIONING

Ensure the child is well conditioned before seeking threshold

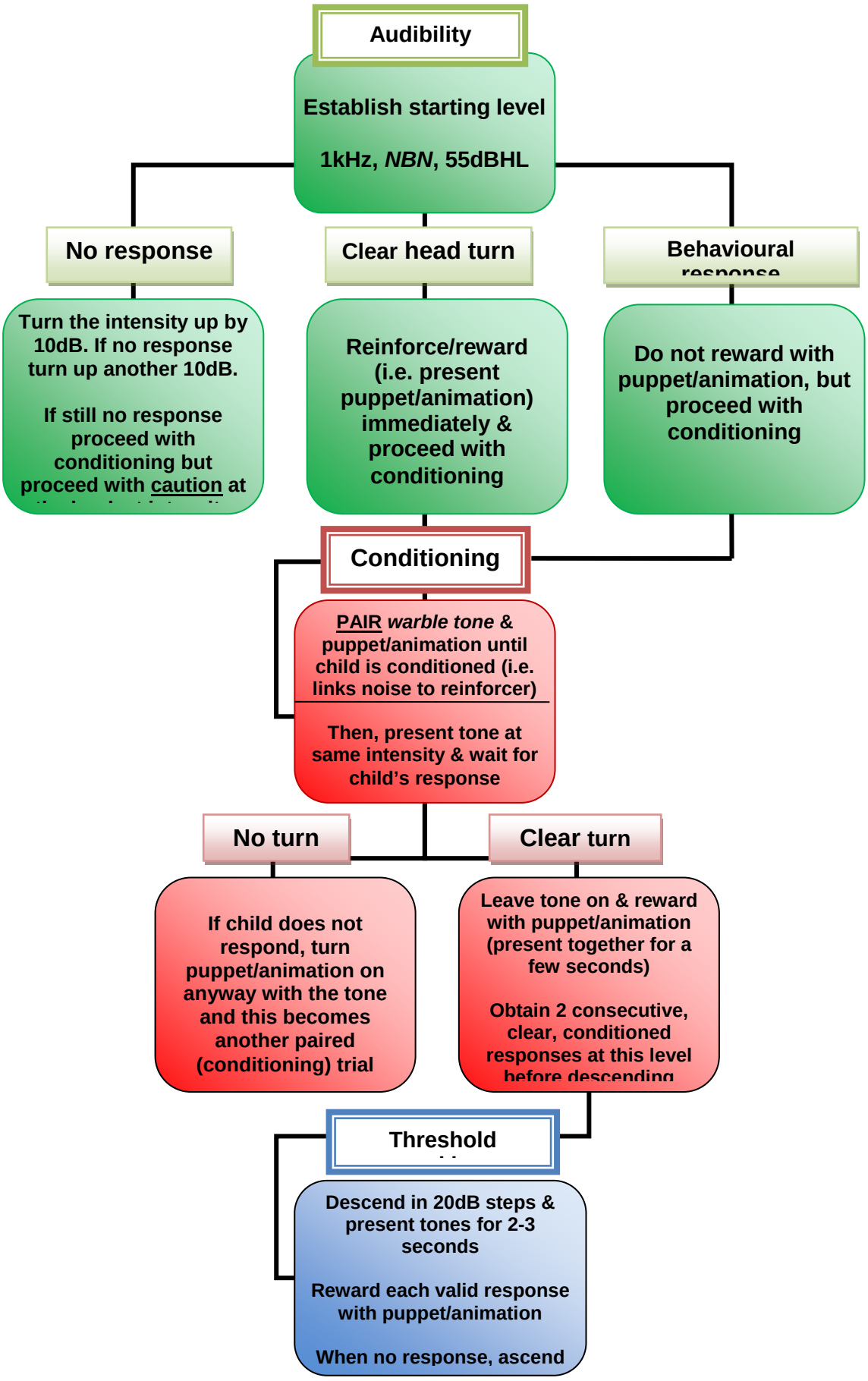
- Present a warble tone at the selected starting level, ***paired*** (i.e. simultaneously) with the reinforcer (puppet/animation) for 2-3 seconds.
- The distracter draws the child's attention to the reinforcer, and provides social reinforcement.
- Repeat paired presentations as necessary, with reasonably long inter-presentation intervals.
- When you feel the child is becoming conditioned (i.e. links the noise to the puppet/animation), present the tone at the same intensity and **wait** for the child's response.
- If the child turns, introduce the reinforcer promptly, keeping it and the tone on together for a few seconds. Distracter provides social reinforcement.
- If the child fails to respond, turn the reinforcer on anyway, and this becomes another paired (conditioning) trial.
- Valid responses usually occur within about 3-4 seconds of the tone onset.

- **Obtain 2 consecutive, clear, conditioned responses at this level before descending to seek threshold.**

3. THRESHOLD SEEKING

- Present tones for 2-3 seconds at a time, descending in 20dB steps. Reward each valid response with the reinforcer.
- Valid responses and non-responses are recorded as they are obtained (with ticks and crosses).
- Do not record a non-response if the child becomes noisy/overactive as the tone is presented. Repeat the presentation instead, when response state improves.
- When the child does not respond, ascend in 5dB steps until a response is obtained. Reward this response. Continue as for pure tone audiometry (down 10, up 5) until responses have been obtained for **2 out of 3 presentations.**
- Two clear responses at a minimal level (e.g. 15dBHL) are sufficient if the child has normal hearing.
- Repeat for the remaining frequencies. Usual test order is 1 kHz, 4 kHz, 500 Hz, 2 kHz.
- **Repeat with bone conductor, insert earphones as necessary, and if possible.**

Visual Reinforcement Audiometry (VRA)



Test order is 1 kHz, 4 kHz, 500 Hz, 2 kHz

Goals for Paediatric Clinics – End of 2nd Year

Procedures/Testing

- To be able to obtain accurate test results on a range of paediatric cases with minimum help for non-routine or complex cases and for difficult to handle children.
- Be able to obtain accurate thresholds using VRA on more difficult , older children(18/12 to 2 ½), and to make appropriate adaptations to technique for non-routine cases
- Be able to obtain accurate thresholds using Play audiometry on more difficult children, adapting techniques to cater for children from 2-2 ½
- Be able to judge when modified Play and/or VRA should be used, and to move flexibly between test techniques when required
- Be able to judge when masking is required, and to mask AC and BC using paediatric masking technique
- Be able to structure techniques to avoid false positives, slow or off responses, and non -responding. Be able to take appropriate action when these occur. Be aware of inconsistent and unexpected responses and deal with these appropriately
- Be able to judge when masking is required for KTT, to work out masking levels, choose appropriate transducers, and conduct masked free-field speech testing.
- Be able to obtain accurate tympanograms efficiently in difficult cases
- Be able to obtain reflexes on both automatic and manual machines
- Be able to make good quality judgements regarding behavioural responses in very young infants

Interaction with Clients (adults and children)

- Be able to change your own behaviour in order to manipulate children's behaviour towards a desired objective
- Be able to take a comprehensive history covering all areas, using clear questions. Be able to adjust style, rephrase questions and follow up as necessary. Address clients' concerns
- Be able to explain the test procedure and required response to the clients, adjusting style, rephrase, re-emphasise where necessary (non-English speaking background, etc.)
- Be able to explain test results to client using appropriate terminology, relate results to the client's presenting concerns, and make appropriate recommendations. Be aware of client's reactions and be able to modify your own behaviour and structure of feedback in response. Check that client understands results and reasons for recommendations. Adequately answer client's questions
- Be responsive to and considerate of the clients, be assertive when required, maintain a friendly and professional approach
- Behave in a mature manner at all times, demonstrate initiative, and be punctual and suitably dressed. Be ready to start on time, having checked all equipment, tidy room and clean up room as required

Integration

- Be able to recognise inconsistencies in test results and take appropriate action
- Be able to integrate results and understand the implications of results
- Be able to formulate appropriate management strategies
- Be able to write clear well-organised reports to various professionals, and to submit them to supervisors within a week

The University of Melbourne
Audiology Student Clinical Placement Assessment Form

This assessment form is for student personal feedback and internal university purposes only. It is not to be copied and sent on to other people including prospective employers.

PLEASE NOTE: THIS DOCUMENT WILL BE COPIED AND PASSED ON TO THE STUDENT

Student's name:

Clinical Supervisor(s):

Site/Clinic:

Date/s of placement:

Brief summary of caseload / casemix (please check boxes and/or make notes)

Type of Testing		**Degree of Difficulty**
Paediatric	***Adult***	☐ Average / easy cases
☐ BOA	☐ PTA	☐ High degree of difficulty case/s
☐ VRA / VROA	☐ Normal Hearing	☐ NESB patient / family
☐ Play audiometry	☐ SNHL	☐ Work with interpreter
☐ PTA (paed)	☐ Conductive hearing loss	☐ Challenging behaviours
☐ Conductive hearing loss	☐ Mixed loss	☐ Complex testing / masking
☐ SNHL	☐ Complex case e.g. NOHL	☐ Complex / ambiguous results
☐ Complex case/s e.g. autism	☐ Adult electrophysiology	
☐ Infant electrophysiology		
☐ Other (please specify)	**Amplification**	**Counselling**
	☐ N/A	☐ N/A
	☐ Practical / technical activities	☐ Informational
	☐ Patient interaction / habilitation	☐ Personal adjustment

For check boxes, double click on check box to open the field options window and select checked / not checked

Notes / Comments

For the categories of professional conduct, interpersonal interactions, clinical assessment skills and amplification, please comment on the student's strengths and weaknesses.

1. The examples given for each category are not exhaustive and/or may not apply in all clinics.
2. For each category, please comment on the student's overall *level of independence* in their practice by indicating **X** on the line representing the *Novice – Intermediate Beginner – Independent* continuum according to the overall degree of supervision and guidance they required. Click and type X anywhere on the line, e.g.

X

Novice:	**Intermediate beginner:**	**Independent:**
Needs constant supervision and significant guidance	Some support needed in routine cases	Minimal supervision in routine cases

3. If completing the form electronically please delete extra lines in each section as required.

Professional conduct

(Punctuality, courtesy, appropriate manner, interest, initiative, responsiveness to feedback, etc. Seeks supervision / assistance when appropriate)

Novice:	**Intermediate beginner:**	**Independent:**
Needs constant supervision and significant guidance	Some support needed in routine cases	Minimal supervision in routine cases

Comments

Interpersonal interactions

(Patient-centredness, empathy, rapport. Appropriate clinical communication, effective interviewing style, use of language, voice level, non-verbal skills, etc.)

Novice:	**Intermediate beginner:**	**Independent:**
Needs constant supervision and significant guidance	Some support needed in routine cases	Minimal supervision in routine cases

Comments

Clinical assessment skills

(Pure tone testing, masking, speech recognition testing, speech masking, immittance testing, etc. Recognises and resolves test inconsistencies, interpretation, management planning, etc.)

Novice:	**Intermediate beginner:**	**Independent:**
Needs constant supervision and significant guidance	Some support needed in routine cases	Minimal supervision in routine cases

Comments

Amplification

(Considerations in pre-selection, selection, use of prescriptive formula, impression-taking, real ear measurements, use of manufacturer's software, trouble shooting, outcome assessment, assistive listening devices, counselling on care and maintenance).

Novice:	**Intermediate beginner:**	**Independent:**
Needs constant supervision and significant guidance	Some support needed in routine cases	Minimal supervision in routine cases

Comments

** Please email the completed form to Gavin Hawkins either electronically at aud-clinplacements@unimelb.edu.au or by mail to Gavin Hawkins, Department of Audiology and Speech Pathology, 550 Swanston Street, The University of Melbourne, 3053.
** Please contact Dr. Jessica Vitkovic on 9035 5320 or by email at jessicav@unimelb.edu.au if you have serious concerns about a student's performance.