APPENDIX A : Questionnaire

*Section A: Biographical Details:*

Please fill in or tick (✓) the relevant answer

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| --- | --- | --- | --- | --- | --- |
| 1 | Age |  | | | |
| 2 | Gender | Male | | Female | |
| 3 | Number of years working as an Audiologist (excluding community service) | 1-3 years | 3-5 years | 5-10 years | >10 years |
| 3.1 | Have you conducted MDR-TB monitoring in the last 3 years? | Yes | | No | |
| 4 | Province in which you are working? | Free State | | Kwa-Zulu Natal | Eastern Cape |
| Limpopo | | Northern Cape | Mpumalanga |
| Gauteng | | Western Cape | North West |
| 5 | Type of institution in which you work? | Private Practice | Private Hospital | Provincial Hospital | |
| Regional Hospital | District Hospital | Community Health Clinic | |
| Other: (Specify) | |
| 6 | Do you conduct diagnostic audiometric testing? | Yes | | No | |
| 7 | Do you have access to electrophysiological testing equipment? | Yes | | No | |
| 7.1 | If yes, please indicate which equipment. | Otoacoustic Emissions (OAE) | | Auditory Brainstem Response (ABR) | Auditory Steady State Response (ASSR) |
| Immittance Audiometry | | Other: Please specify | |
| 8 | Are you currently assessing patients with multi-drug resistant tuberculosis (MDR-TB)? | Yes | | No | |
| 9 | Do you provide ototoxicity monitoring at your institution? | Yes | | No | |
| 10 | Are you aware of any audiological guidelines and/or protocols for MDR-TB ototoxicity monitoring? | Yes | | No | |
| 10.1 | If yes, please state them in the space provided. | 1. South African Ototoxicity Monitoring Guidelines | | | |
| 1. ASHA (1994) Audiological Management of Individuals Receiving Cochleotoxic Drug | | | |
| 1. AAA (2009) Position Statement and Clinical Guidelines: Ototoxicity Monitoring | | | |
| 1. All of the above | | | |
| 1. B & C | | | |

*Section B: Ototoxicity Monitoring - Identification of Patients with MDR-TB*

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| --- | --- | --- | --- | --- | --- |
| 11 | Do you believe that identification of a patient at risk for hearing loss depends on a good working relationship between the audiologist, physicians and nurses? | Yes | | No | |
| 12 | Do you think that in-service training with the staff involved in monitoring patients with MDR-TB is important? | Yes | | No | |
| 12.1 | If yes, please choose one of the statements that indicate the aspects of MDR-TB ototoxicity monitoring that should be addressed during in-service training? | 1. What is ototoxicity, what is audiology about, what audiological tests are being conducted, the need for counselling and fitting of hearing aids | | | |
| 1. What is ototoxicity, when does ototoxicity occur, what happens to the ear and its function, what are the ototoxic drugs involved in MDR-TB, what are the associated auditory and vestibular problems, the need for counselling and aural rehabilitation. | | | |
| 1. What are the signs and symptoms of hearing loss, the audiological test battery used for monitoring, vestibular assessment and counselling. | | | |
| 1. None of the above | | | |
| 12.2 | Who do you think should conduct this training? | Community Members | Audiologist | | Doctors |
| Nurses | Other (please Specify) | | |
| 13 | Which if these drugs do you think require an automatic referral for ototoxicity monitoring? | 1. Dihydrostreptomycin, stilpain, asprin and gentamicin | | | |
| 1. Tobramycin and kanamycin | | | |
| 1. Dihydrostreptomycin, tobramycin, kanamycin, amikacin, and gentamicin. | | | |
| 1. None of the above | | | |
| 14 | Do you think that if referrals are made automatically when patients are undergoing ototoxic drug treatment, there will be an improvement in the current referral system? | Yes | | No | |

*Section C: Ototoxicity Monitoring- Baseline Test*

|  |  |  |  |  |  |  |  |  |
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| 15 | Do you conduct baseline assessment prior to administration of MDR-TB treatment once the patient is identified? | Yes | | | No | | | |
| 15.1 | If yes, when is the patient’s baseline assessment conducted? | 8-12 hours | | 12-24 hours | | | 24-48 hours | |
| 48-72 hours | | | | >72 hours | | |
| 15.2 | If no, why? |  | | | | | | |
| 16 | Choose one of the statements which indicates the tests used during baseline assessments? | 1. Otoscopic examination, immittance audiometry, air conduction testing, bone conduction testing, high frequency audiometry (HFA), speech reception testing (SRT), speech discrimination testing (SDT) and otoacoustic emissions (OAE) and auditory brainstem response (ABR) | | | | | | |
| 1. Otoscopic examination, immittance audiometry, air conduction testing, Eustachian tube function (ETF), speech reception testing (SRT), speech discrimination testing (SDT) and otoacoustic emissions (OAE) | | | | | | |
| 1. Otoscopic examination, immittance audiometry, air conduction testing, high frequency audiometry speech reception testing (SRT), otoacoustic emissions (OAE) and auditory brainstem response (ABR) | | | | | | |
| 17 | Do you conduct testing above 8kHz? | Yes | | | No | | | |
| 17.1 | If yes, which frequencies are being tested? | 9kHz | 10kHz | | 11 kHz | | | 12 kHz |
| 14 kHz | 16 kHz | | 18 kHz | | | 20 kHz |
| 17.2 | If no, give reasons |  | | | | | | |
| 18 | Do you perform a re-test to confirm results? | Yes | | | No | | | |
| 18.1 | If no, why? |  | | | | | | |
| 19 | Do you conduct pre-treatment counselling advising the patient of the possible ototoxic effect of MDR-TB medication has on their auditory system? | Yes | | | No | | | |
| 19.1 | If no, why? |  | | | | | | |
| 20 | Choose one statement which reflects the topics covered during pre-treatment counselling? | 1. Tinnitus, loss of balance, pharmacological effects, synergistic effect on ototoxicity and noise exposure, occlusion effect, hearing loss and potential effect on communication ability | | | | | | |
| 1. Tinnitus, loss of balance, synergistic effect on ototoxicity and noise exposure, occlusion effect, hearing loss and potential effect on communication ability | | | | | | |
| 1. Tinnitus, loss of balance, synergistic effect on ototoxicity and noise exposure, occlusion effect, hearing loss, potential effect on communication ability and effects of daily living. | | | | | | |

*Section D: Ototoxicity Monitoring – Monitoring Procedures*

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| 21 | Do you follow a specific criterion for defining an ototoxic hearing loss? | Yes | | No | |
| 21.1 | If no, why? |  | | | |
| 22 | Do you use baseline measure to compute changes in hearing sensitivity? | Yes | | No | |
| 22.1 | If no, why? |  | | | |
| 23 | Choose the correct statement that indicates significant changes in hearing sensitivity | 1. 20dB decrease at any one test frequency | | | |
| 1. 10dB decrease at any 2 adjacent test frequencies | | | |
| 1. Loss of response at 3 consecutive tests | | | |
| 1. All of the above | | | |
| 1. A and B only | | | |
| 24 | If there is a change in hearing sensitivity, do you conduct a full audiological evaluation? | Yes | | No | |
| 24.1 | If yes, please indicate what tests are conducted in the space provided. |  | | | |
| 24.2 | If no, why? |  | | | |
| 25 | What test battery is used when testing a non-responsive patient? | 1. Objective test | | | |
| 1. Behavioural tests | | | |
| 1. No testing should be conducted | | | |
| 1. A and B | | | |
| 26 | Do you conduct periodic testing after every 2-3 days per week for those patients receiving MDR-TB treatment? | Yes | | No | |
| 26.1 | If no, when do you conduct periodic testing? | Weekly | Fortnightly | | Monthly |
| 27 | If there is a shift in hearing threshold that is significant, do you report these findings to the physician? | Yes | | No | |
| 27.1 | If yes, choose the correct statement, as to what possible changes the physician can make to the treatment regime. | 1. The scheduled timing of the dosage and a reduction in the dosage. | | | |
| 1. Reduce the dosage and increase the scheduled timing | | | |
| 1. Temporary discontinuation or a switch to a less ototoxic drug | | | |
| 1. A and C | | | |
| 1. All of the above | | | |
| 27.2. | If no, why? |  | | | |
| 28 | If the physician changes the drug used in the treatment of MDR-TB are you notified or is it documented in the patient file? | Yes | | No | |
| 29 | If the treatment is changed do you establish a new baseline for the patient? | Yes | | No | |
| 29.1 | If no, why? |  | | | |

*Section E: Ototoxicity Monitoring-Post-treatment Management*

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| 30 | Do you conduct a full audiological evaluation after the cessation of MDR-TB treatment? | Yes | | No | |
| 30.1 | If no, why? |  | | | |
| 31 | When should follow-up evaluations be conducted? | 3 months | 6 months | One year | All of the above |
| 32 | Do you think that the management of an adult is different from that of a child? | Yes | | No | |
| 32.1 | Choose one of the statements that focus on management of an adult who has a hearing impairment due to the effects of MDR-TB treatment. | 1. Hearing aids, assistive listening devices, counselling both to the patient and the family. | | | |
| 1. Hearing aids, assistive listening devices, audition and counselling both to the patient and the family. | | | |
| 1. Hearing aids, assistive listening devices, counselling both to the patient and the family, communication strategies, audition, speech-reading and possible support groups available. | | | |
| 1. A and B | | | |
| 33 | Do you conduct counselling after cessation of MDR-TB treatment | Yes | | No | |
| 33.1 | If no, why? |  | | | |
| 33.2 | Who do you think should conduct the counselling? |  | | | |
| 33.3 | If yes, which statement would you choose that best suit the topics you would include in your counselling agenda | 1. What is ototoxicity and the effect it has on the ear, how to optimize the use of amplification, the variety of assistive listening devices available and the use of audition and speech reading to cope with communication breakdown. | | | |
| 1. Nature and etiology of the hearing loss, the effects that the hearing loss has on daily living, how to optimize the use of amplification, the variety of assistive listening devices available and the use of audition and speech reading to cope with communication breakdown. | | | |
| 1. All of the above | | | |
| 1. None of the above | | | |
| 34 | When providing counselling is it conducted in the home language of the patient? | Yes | | No | |
| 35 | Do you provide the patient with informational pamphlets once counselling is completed? | Yes | | No | |
| 35.1 | If no, why? |  | | | |
| 36 | Do you believe that ototoxicity monitoring would be easier for audiologists if there were South African guideline and/or protocols available? | Yes | | No | |
| 37 | Do you make modifications to the recommended guidelines? | Yes | | No | |
| 37.1 | If yes, please indicate the type of modifications. | 1. Only conduct air conduction testing for monitoring | | | |
| 1. Do not conduct speech audiometry in baseline testing | | | |
| 1. Test only certain frequencies | | | |
| 1. All of the above | | | |
| 1. Other (Please specify) | | | |
| 37.2 | What are the possible reasons for the modifications of the recommended guidelines? | 1. Time constraints | | | |
| 1. Lack of resources | | | |
| 1. Understaffed | | | |
| 1. Lack of guidelines | | | |
| 1. Other (Please specify) | | | |