Note: This is Online Appendix 1 of Ramnarian, K., & Paken, J. (2024). Healthcare professionals' knowledge and practices in managing ototoxicity in children with cancer. *South African Journal of Communication Disorders*, *71*(1), a1064. https://doi.org/10.4102/sajcd.v71i1.1064

Online Appendix 1: Questionnaire

Dear colleague
Thank you for taking time to complete this questionnaire investigating the knowledge and practices of healthcare professionals in South Africa on ototoxic hearing loss in children receiving platinum-based chemotherapeutic drugs.

Please answer honestly
Please tick the appropriate answer
Some questions may require you to tick the answer while some might require you to state reasons. These will be indicated accordingly.
If there are any questions you do not understand, please contact the researcher on the details provided in the information sheet.

Section 1: Biographical information

1. To which profession do you belong? Please tick only one.

a. Audiology	
b. Speech therapy	
c. Pharmacy	
d. Psychology	
e. Physiotherapy	
f. Paediatrician	
g. Otolaryngology	
h. Nursing	
i. Oncology	

2. Do you provide services to children receiving platinum-based chemotherapy?

a. Yes	
b. No	

3. How long have you been offering healthcare services to children receiving platinum-based chemotherapeutic drugs?

a. 0-1 year	
b. 2-5 years	
c. 6-10 years	
d. More than 10 years	

4. Did you study in South Africa?

a. Yes	
b. No	

5. Did you study or receive training about the ear, hearing and ototoxicity?

a. Yes	
b. No	

6.1 If yes, how did you study this or receive training?

a. Undergraduate studies	
b. Postgraduate studies	
c. Orientation	
d. In-service training	
e. On- the- job training	
f. Other	

6.1.1 If other, please specify

_____

_____

_____

7 Do you feel that the training or studies you received on the ear, hearing, or ototoxicity were adequate?

a. Yes	
b. No	

Section 2- Knowledge of ototoxicity and ototoxic effects of platinum- based chemotherapeutic drugs

8 What is a hearing loss? You may tick more than one option

a. When a child's hearing threshold is more than 15dB	
b. When an adult's hearing threshold is more than 25dB.	
c. When sound efficiently travels from the ear to the brain.	
d. When a person can't hear in background noise	

9 What are the signs and symptoms of hearing loss in children? You may select more than one option

a. When a child does not respond to any sound	
b. When a child does not respond to their name	
c. When a child does not look in the direction of the sound source	
d. When a child only responds to loud sounds	
e. When a child responds to sound	
f. When a child looks in the direction of the sound source	

10 Are there risk factors for an ototoxic hearing loss?

a. Yes	
b. No	
c. I do not know	

11 The risk factors for ototoxicity caused by platinum-based chemotherapeutic drugs are: (You may tick more than one option)

a. Age extremes (very old or very young)	
b. Previous history of hearing loss	
c. Dose, duration, and mode of administration of platinum-based chemotherapeutic drugs.	
d. Use of other ototoxic drugs	
e. Renal failure	
f. Diabetes	
g. Asthma	
h. All the above	

12 The side effects of platinum-based chemotherapeutic drugs are: (You may tick more than one option)

a. Tinnitus	
b. Aural fullness	
c. Hyperacusis	
d. Ototoxicity	
e. Dermatological disorders	
f. Haematological toxicity	
g. Gastrointestinal disorders	
h. Neurotoxicity	
i. Nephrotoxicity	
j. Hepatic toxicity	
k. Asthma	
l. Pneumonia	

13 Are there long-term consequences of hearing loss?

a. Yes	
b. No	

13.1 If you selected yes, please list the consequences of a hearing loss

_____
_____
_____
_____
_____

14 What is ototoxicity?

a. Damage to the auditory and vestibular system caused by medication	
b. Damage to the auditory and vestibular system caused by noise	
c. Being born with a hearing loss	
d. I do not know	

15 Does platinum-based chemotherapeutic drugs cause hearing loss?

a. Yes	
b. No	

15.1 If you selected yes, please tick which symptoms you think are associated with platinum-based ototoxicity. You may tick more than one

a. Hearing loss	
b. Dizziness	
c. Tinnitus	
d. Hypersensitivity to sound (Hyperacusis)	
e. Blurred vision	
f. Ear pain	
g. I do not know	

16 Which part of the auditory system does platinum-based chemotherapeutic drugs affect? You may tick more than one option.

a. Outer ear	
b. Middle ear	
c. Cochlear	
d. Vestibulocochlear nerve	
e. I do not know	

Section 3- Inter-professional roles within the ototoxicity monitoring programme

17 Does the hospital you work at have an ototoxic monitoring programme in place?

a. Yes	
b. No	
c. I do not know	

17.1 If no, please state why.

_____
_____
_____
_____

17.2 If yes, please tick what it consists of. You may tick more than one option

a. Baseline assessment	
b. Information counselling	
c. Monitoring of hearing thresholds during treatment	
d. Monitoring of hearing thresholds post completion of treatment	
e. Treatment adjustment based on change of hearing thresholds	
f. Follow up post completion of treatment (Enquiring about auditory symptoms)	
g. All the above	
h. None of the above	
i. I do not know	

18 How long does the ototoxic monitoring programme continue for?

a. Monitoring stops as soon as treatment is stopped/ completed	
b. One month after treatment as stopped.	
c. Up to 6 months following cessation of treatment	
d. Longer than 6 months post treatment	

19 Do you think ototoxic monitoring programme is important for children receiving platinum-based chemotherapeutic drugs?

a. Yes	
b. No	

19.1 If no, please indicate why.

a. I do not think the programme will make a difference in the quality of the patient's life	
b. It is waste of time and resources	
c. Other	

19.1.1 If other was selected, please elaborate.

_____
_____
_____
_____
_____

20 Do you think that you have a role within the ototoxic monitoring programme?

a. Yes	
b. No	

Audiologist

20.1 If you selected yes to question 20, please select what your role within this programme is. You may select more than one option.

a. Conduct baseline audiological assessment before the administration of platinum-based chemotherapeutic drugs or within 24 hours after administrating treatment.	
b. To conduct informational counselling.	
c. To make appropriate referrals if I notice signs and symptoms of hearing loss	
d. To adjust treatment regimen where possible.	
e. To conduct audiological monitoring during the course of treatment.	
f. To conduct follow up sessions	
g. Initiating and monitoring the success of ototoxicity monitoring programme	
h. To review treatment of patient in response to the identification of ototoxicity	
i. To raise awareness of potential for ototoxicity of drugs prescribed.	

Clinical psychologist

20.1 If you selected yes to question 20, please select the role you think you have within this programme. You may select more than one option.

a. Manage patients' psychological well-being when dealing with ototoxic impairment.	
b. Offer counselling/support to patient's family members	
c. Monitor ototoxic signs and symptoms and refer when appropriate	

Oncologist

20.1 If you selected yes to question 20, please select what role you think you have within this programme. You may select more than one option.

a. Assess patients for co-morbidities and request for baseline assessments	
b. Initiate oncological treatment for patients	
c. Review treatment of patients on platinum-based chemotherapeutic drugs in response to the identification of ototoxicity	
d. Enquire about auditory symptoms	
e. Audiological assessment and intervention	
f. Speech and language intervention	

Paediatrician

20.1 If you selected yes to question 20, please select what role you think you have within this programme. You may select more than one option.

a. Assess patients for co-morbidities	
b. Initiate oncological treatment for patients	
c. Enquire about auditory symptoms	
d. Request for audiological assessments in response to auditory symptoms	
e. Audiological assessment and intervention	
f. Speech and language intervention	

ENT

20.1 If you selected yes to question 20, please select what role you think you have within this programme. You may select more than one option.

a. Assess patients for co-morbidities	
b. Initiate oncological treatment for patients	
c. Enquire about auditory symptoms	
d. Request for audiological assessments in response to auditory symptoms	
e. Audiological assessment and intervention	
f. Speech and language intervention	

Nurses

20.1 If you selected yes to the previous question, please select the role you think you have within this programme. You may select more than one option.

a. Monitor ototoxic signs and symptoms and refer when appropriate	
b. To conduct informational counselling.	
c. To provide inter-professional vestibular rehabilitation	

Pharmacists

20.1 If you selected yes, please select the role you think you have within this programme. You may select more than one option.

a. Raise awareness of potential for ototoxicity of drugs prescribed	
b. Make recommendations for otoprotective treatments and less ototoxic drug options	
c. Monitor signs and symptoms of hearing loss and refer when necessary	
d. Review treatment of patients in response to the identification of ototoxicity	

Physiotherapists

20.1 If you selected yes to question 20, please select the role you think you have within this programme. You may select more than one option.

a. Provide inter-professional vestibular rehabilitation	
b. Monitor ototoxic signs and symptoms and refer when appropriate	

Speech therapist

20.1 If you selected yes to the question 20, please select the role you think you have within this programme. You may select more than one option.

a. To make referrals for baseline audiological assessment before the administration of treatment or within 24 hours after administrating of treatment.	
b. To provide speech and language assessment and intervention options	

21. Do you think that your role within this programme is important?

a. Yes	
b. No	

22. Do you think the roles of audiologists are important within this programme for children?

a. Yes	
b. No	

23. Which healthcare professionals do you think form part of the inter-professional team collaboration to ototoxicity management? You may tick more than one option.

a. Doctor (Oncologist, ENT, and paediatrician)	
b. Nurse	
c. Audiologist	
d. Dietician	
e. Social worker	
f. Physiotherapist	
g. Clinical psychologist	
h. Clinical technologist	
i. Pharmacist	
j. Occupational therapist	

24. What role do you think each of these healthcare professionals have within the ototoxicity monitoring programme

• Oncologist	
a. Assess patient for co-morbidities and request for baseline assessments	
b. Review treatment of patient in response to the identification of ototoxicity	
c. Communication intervention	
• ENT	
a. Assess patients for co-morbidities	
b. Request for audiological assessments in response to auditory symptoms	
c. Communication intervention	
• Paediatrician	
a. Assess patients for co-morbidities	
b. Request for audiological assessments in response to auditory symptoms	
c. Communication intervention	
• Nurse	
d. Monitor ototoxic signs and symptoms and refer when appropriate	
e. Request for baseline assessments	
• Pharmacist	
f. Change patient's treatment in response to ototoxicity	
g. Raise awareness of potential for ototoxicity of medication prescribed	
• Clinical psychologist	
h. Manage patient's psychological well-being	
i. Assist patients with accessing available resources in the community	
• Occupational therapist	
j. Manage patient's return to work/school	
k. Monitor ototoxic signs and symptoms and refer when appropriate	
• Physiotherapist	
l. Provide vestibular rehabilitation	
m. Communication intervention	
• Social worker	
n. Assist patients with accessing available resources in the community	
o. Communication intervention	
• Speech therapist	
p. To provide patient with communication intervention	
q. Monitor signs and symptoms of ototoxic hearing loss	
• Audiologist	
r. Conducts hearing tests.	
s. Requests for baseline assessments	

Section 4- Ototoxicity monitoring practices conducted by healthcare professionals (Audiologist)

25. Do you inform the patient's parents/caregiver on the ototoxic effects of platinum-based chemotherapeutic drugs?

a. Yes	
b. No	

25.1 If no, please state your reasons.

_____
_____
_____
_____
_____

25.2 If yes, when do you provide informational counselling on the ototoxic effects of platinum-based chemotherapeutic drugs to patients/caregivers?

a. Before treatment	
b. After treatment has stopped/completed.	
c. While the patient is on treatment.	
d. When the patient starts experiencing symptoms	

26 What tests are used to conduct baseline hearing assessments on children? You may tick more than one option.

Assessments:	
a. Otoscopic examination	
b. Tympanometry	
c. Acoustic reflexes	
d. Distortion product otoacoustic emissions	
e. Transient evoked otoacoustic emission	
f. High frequency Audiometry	
g. Auditory brainstem Response	
h. Auditory steady state response	
i. Pure tone audiometry	

27. What tests are used to conduct follow up hearing assessments on children? You may tick more than one option.

a. Otoscopic examination	
b. Tympanometry	
c. Acoustic reflexes	
d. Distortion product Otoacoustic emissions	
e. Transient evoked otoacoustic emission	
f. High frequency Audiometry	
g. Auditory brainstem Response	
h. Auditory steady state response	
i. Pure tone audiometry	

28What challenges do you face within the ototoxic monitoring programme? You may tick more than one option.

a. None	
b. Lack of resources	
c. Lack of time	
d. Lack of skills from healthcare professionals	
e. Inadequate training on ototoxicity	
f. Other	

28.1If other, please state what other challenges are experienced.

_____
_____
_____
_____
_____
_____

29 Do you use an inter-professional approach when treating patients on platinum-based chemotherapeutic drugs?

a. Yes	
b. No	

29.1If no, please select reason. You may select more than one

a. I do not see the effectiveness of this approach	
b. I do not have time to liaise with other healthcare professionals	
c. Other	

29.2If other, please state your reasons.

_____
_____
_____

Section 4- Ototoxic monitoring practices conducted by healthcare professionals (Clinical psychologist)

25. Do you offer counselling to patients/parents of patients on platinum-based chemotherapeutic drugs?

a. Yes	
b. No	

26. If you selected no, please state your reason/s:

_____
_____
_____
_____
_____

27. What criteria do you use to determine when counselling should begin?

a. As soon as the patient is diagnosed with cancer	
b. As soon as the patient is diagnosed with a hearing loss	
c. When the patient starts to show signs of emotional disturbances	
d. When the patient's health status starts to deteriorate	

28. Who do you offer counselling and support to? You select more than one option.

a. Patient only	
b. Patient and family members	

29. Do you use an inter-professional approach when treating patients on platinum-based chemotherapeutic drugs?

a. Yes	
b. No	

29.1 If no, please select reason. You may select more than one

a. I do not see the effectiveness of this approach	
b. I do not have time to liaise with other healthcare professionals	
c. Other	

29.2 If other, please state your reasons.

_____
_____
_____
_____
_____

Section 4- Ototoxicity monitoring practices conducted by healthcare professionals (Oncologist)

25. What percentage of your paediatric patients receive platinum-based treatment known to be potentially ototoxic?

a. 0-25%	
b. 26-50%	
c. 51-75%	
d. 76-100%	

26. What criteria do you use for referring children for audiological assessments?

a. All children on platinum-based chemotherapeutic drugs treatment	
b. Children showing hearing or balance problems	
c. Children receiving repeated doses of platinum-based chemotherapeutic drugs	
d. Other	

26.1. If you selected other for question 26, please specify:

_____
_____
_____
_____
_____

27. Do you refer children for baseline audiological assessments?

a. Yes	
b. No	

28. Please state what audiological results may influence you to explore different options for modifications of children on platinum-based chemotherapeutic drugs?

_____
_____
_____
_____
_____

29.Do you use an inter-professional approach when treating patients on platinum-based chemotherapeutic drugs?

a. Yes	
b. No	

29.1 If you selected no for question 29, please select reason. You may select more than one option.

I do not see the effectiveness of this approach	
I do not have time to liaise with other healthcare professionals	
Other	

29.2 If other, please state your reasons.

_____
_____
_____
_____
_____

Section 4- Ototoxicity monitoring practices conducted by healthcare professionals (ENT)

25. What percentage of your paediatric patients receive platinum-based treatment known to be potentially ototoxic?

e. 0-25%	
f. 26-50%	
g. 51-75%	
h. 76-100%	

26. What criteria do you use for referring children for audiological assessments?

e. All children on platinum-based chemotherapeutic drugs treatment	
f. Children showing hearing or balance problems	
g. Children receiving repeated doses of platinum-based chemotherapeutic drugs	
h. Other	

26.1. If you selected other for question 26, please specify:

_____
_____
_____
_____
_____

27. Please state what audiological results may influence you to recommend for the review of modifications of platinum-based chemotherapeutic treatment?

_____
_____
_____
_____
_____

28.Do you use an inter-professional approach when treating patients on platinum-based chemotherapeutic drugs?

c. Yes	
d. No	

29.If you selected no for question 28, please select reason. You may select more than one option.

I do not see the effectiveness of this approach	
I do not have time to liaise with other healthcare professionals	
Other	

29.1 If other, please state your reasons.

_____
_____
_____
_____
_____

Section 4- Ototoxicity monitoring practices conducted by healthcare professionals (Paediatrician)

25. What percentage of your paediatric patients receive platinum-based treatment known to be potentially ototoxic?

i. 0-25%	
j. 26-50%	
k. 51-75%	
l. 76-100%	

26. What criteria do you use for referring children for audiological assessments?

i. All children on platinum-based chemotherapeutic drugs treatment	
j. Children showing hearing or balance problems	
k. Children receiving repeated doses of platinum-based chemotherapeutic drugs	
l. Other	

26.1. If you selected other for question 26, please specify:

_____
_____
_____
_____
_____

27. Please state what audiological results may influence you to recommend for the review of modifications of platinum-based chemotherapeutic treatment?

_____
_____
_____
_____
_____

28.Do you use an inter-professional approach when treating patients on platinum-based chemotherapeutic drugs?

e. Yes	
f. No	

29. If you selected no for question 28, please select reason. You may select more than one option.

I do not see the effectiveness of this approach	
I do not have time to liaise with other healthcare professionals	
Other	

29.1 If other, please state your reasons.

_____
_____
_____
_____
_____

Section 4- Ototoxicity monitoring practices conducted by healthcare professionals (Nurses)

25. Do you refer patients on platinum-based chemotherapeutic drugs for audiological assessments?

a. Yes	
b. No	
c. Sometimes	

25.1. If no, please state why.

_____
_____
_____

26. What signs/symptoms/criteria do you use to refer a patient on platinum-based chemotherapeutic drugs for hearing assessment?

a. Difficulty hearing	
b. Communication difficulty present	
c. Patient frequently asks for repetition	
d. Tinnitus	
e. Dizziness	
f. Hypersensitivity to sound	
g. Other	

26.1 If you selected other for question 26, please specify the criteria:

_____
_____
_____

27. Do you use an inter-professional approach when treating patients on platinum-based chemotherapeutic drugs?

a. Yes	
b. No	

27.1 If you selected no for question 27, please select reason. You may select more than one option.

a. I do not see the effectiveness of this approach	
b. I do not have time to liaise with other healthcare professionals	
c. Other	

27.2 If other, please state your reasons.

_____
_____
_____
_____
_____

Section 4- Ototoxic monitoring practices conducted by healthcare professionals (Pharmacist)

25 Do you explain to the patient's family how platinum-based chemotherapeutic drugs works?

a. Yes	
b. No	
c. Sometimes	

26 Are ototoxic effects of platinum-based chemotherapeutic drugs explained to the patient's family before the start of treatment?

a. Yes	
b. No	
c. Sometimes	

26.1If you selected no for question 26, please specify your reasons:

_____
_____
_____
_____
_____-
_____

27 Do you use an inter-professional approach when treating patients on platinum-based chemotherapeutic drugs?

a. Yes	
b. No	

27.1If you selected no for question 27, please select reason. You may select more than one option.

a. I do not see the effectiveness of this approach	
b. I do not have time to liaise with other healthcare professionals	
c. Other	

27.2 If you selected other for question 31, please state your reasons:

_____
_____
_____
_____
_____

Section 4- Ototoxicity monitoring practices conducted by healthcare professionals (Physiotherapist)

25 Are balance screening assessments conducted on all patients on platinum-based chemotherapeutic drugs?

a. Yes	
b. No	

26 What signs and symptoms/criteria do you use to determine whether a balance assessment/screening should be conducted? You may select more than one option.

a. Vertigo	
b. Dizziness	
c. Visual disturbances	
d. Cognitive and/or psychological changes	
e. Hearing changes	

27 When do you conduct vestibular assessments/screening?

a. After first dose of platinum-based chemotherapeutic drugs, balance assessments are conducted.	
b. When patient completes treatment.	
c. After follow-up doses of platinum-based chemotherapeutic drugs are administered.	
d. As soon as the patient presents with signs of vestibular disorders, balance assessments are conducted.	

28 Do you work closely with the audiologist when providing intervention?

a. Yes	
b. No	
c. Audiologists do not have a role within vestibular rehabilitation.	

29 Do you use an inter-professional approach when treating patients on platinum-based chemotherapeutic drugs?

a. Yes	
b. No	

29.1 If you selected no for question 29, please select reason. You may select more than one option.

a. I do not see the effectiveness of this approach	
b. I do not have time to liaise with other healthcare professionals	
c. Other	

29.2 If other, please state your reasons.

_____

_____

_____

Section 4- Ototoxicity monitoring practices conducted by healthcare professionals (Speech therapist)

25 Do you recommend audiological assessments for patients on platinum-based chemotherapeutic drugs when needed?

Yes	
No	
Sometimes	

26 Are speech and language screening assessments conducted on all patients on platinum-based chemotherapeutic drugs?

a. Yes	
b. No	

27 What criteria do you use to determine whether speech/language screening should be conducted? You may select more than one option.

a. Hearing loss	
b. All patients on platinum-based chemotherapeutic drugs.	
c. Patients presenting with communication difficulties.	
d. All the above	
e. Other	

27.1 If you selected other in question 27, please state what criteria you use.

_____
_____
_____

28 Do you use an inter-professional approach when treating patients on platinum-based chemotherapeutic drugs?

a. Yes	
b. No	

28.1 If you selected no for question 28, please state your reason/s.

_____
_____
_____
_____
_____
_____

Section 5- Factors influencing the practices of healthcare professionals.

29 What factors would influence the level of care you provide to patients within the ototoxicity monitoring programme for children on platinum-based chemotherapeutic drugs?

_____
_____
_____
_____
_____

Thank you for completing this questionnaire