



EEG service for children in a tertiary hospital in the Eastern Cape Province



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Background

Frere Hospital is a tertiary hospital in the Eastern Cape Province of South Africa. The hospital mainly serves patients from **a low socio-economic background**.

An **EEG service** for children was established in August 2022 when a nurse assistant was trained in performing EEGs. This is the only EEG service available for a population of about 2,6 Million people in the public sector (Census 2022).



Objectives

- Assess appropriateness of referrals for EEG in children between 0 – 14 years of age.
- Assess demographics, epilepsy types, non-epileptic seizures, etiology of epilepsy, and EEG results.
- Assess appropriateness of management before the EEG.

Materials and Methods

- All children, age 0 – 14 years, with an EEG done between 1. August 2022 and 31. October 2023 in our department were included in the audit.
- The patient's referral center, gender, age at time of EEG, age at onset of seizures or epilepsy, seizure type, epilepsy type if epilepsy, etiology, and EEG result was noted. Assessment of correct diagnosis and appropriate treatment initiation was recorded.
- Epilepsy definition was made according to Fisher et al, (2005) and to the definition by the International League Against Epilepsy.
- Descriptive statistics were used to summarise data.

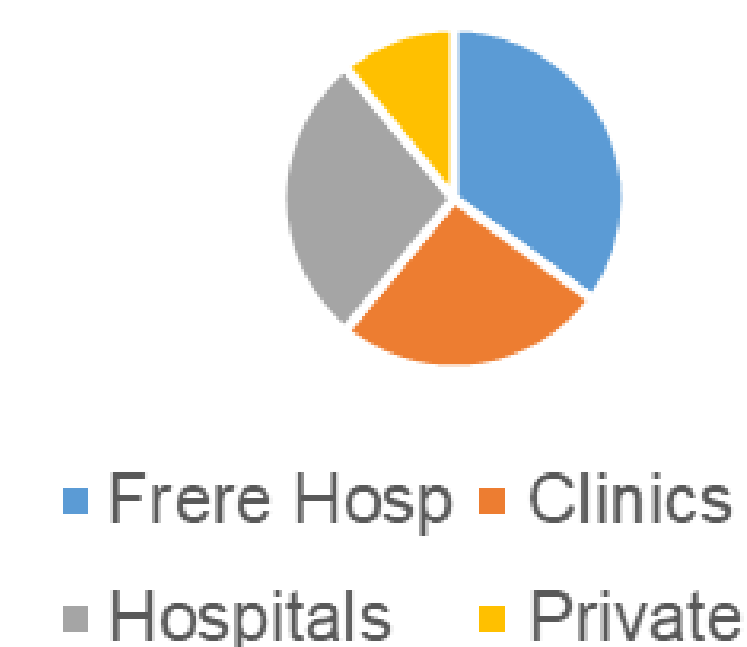
Results

A total of 174 EEGs were performed during the study period. Two were excluded for insufficient information. The **average age** at the time of the EEG was **75 months** and **55% were girls**. The **average onset of seizures** was **51 months**.

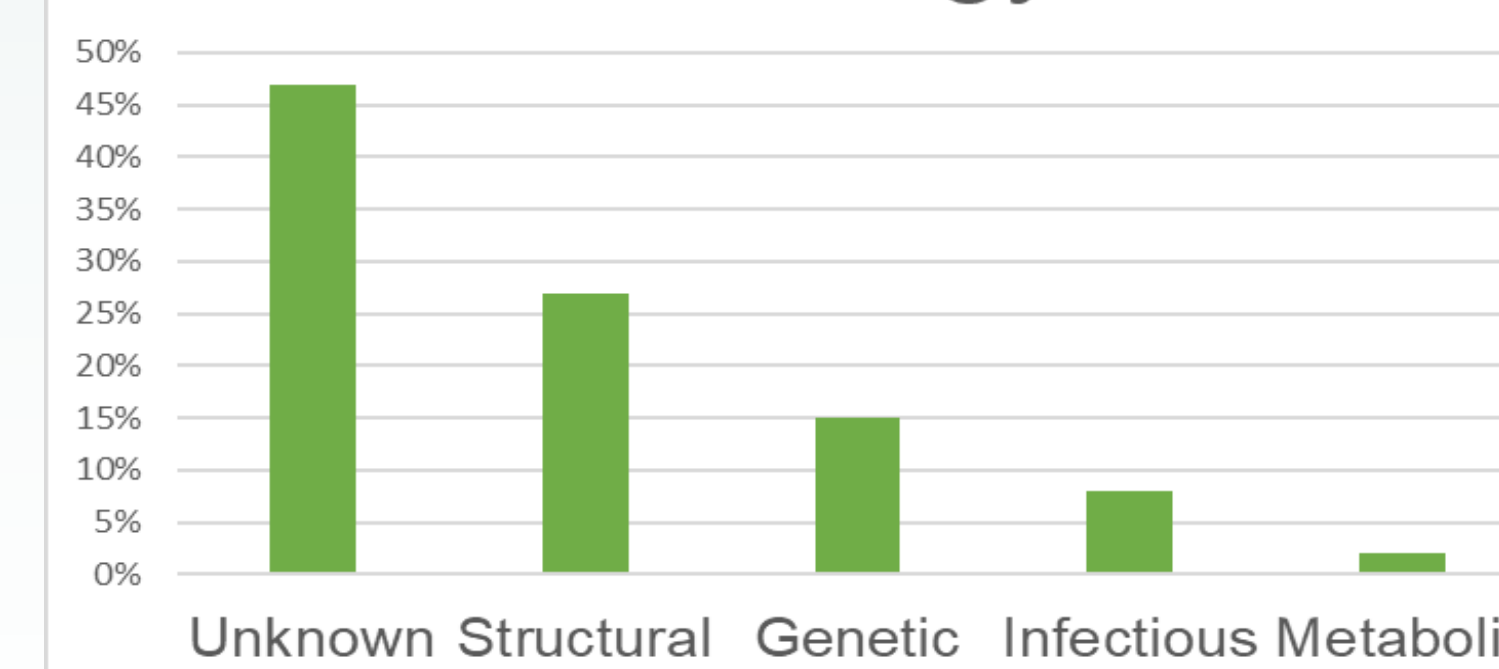
28% of EEGs were done on **children not qualifying for epilepsy** after retaking the history, seizure description or shown videos of the events. **31%** of children were assessed as having **generalized** and **27% as focal epilepsy**. In **12%** of the children, the seizures and EEG findings were in keeping with **epileptic syndromes** and in **2%** cases **the type of epilepsy remained unclear**.

48% of the children had a **normal EEG**, while **28%** showed **generalized** and **24% focal** epileptiform discharges. In about **one third** of the referrals a **wrong diagnosis was given to the children** and in **20%** the **wrong treatment**, according to the South African Paediatric Standard Treatment Guideline, had been initiated.

Referral sites



Aetiology



Conclusion

This is one of the few studies looking at EEG findings in children residing in sub-Saharan Africa.

The assessment of seizures and epilepsy in children remains a challenge. About one third of the children who received an EEG did not qualify for the diagnosis of epilepsy.

Wrong treatment initiation was found in 20% of the children, even though treatment guidelines are widely available.

More **in depth training in all health care sectors** about semiology of seizures, seizure mimics and epilepsy, as well as in type of investigations and management would lead to **more timely and appropriate management in many children with epilepsy in the Eastern Cape Province**.

References

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Acknowledgement and Contact

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