

Onchocerciasis-associated epilepsy: A preventable condition

Joseph Nelson Siewe Fodjo¹, Luis-Jorge Amaral¹, Stephen Jada², Dan Bhwana³, Bruno Mmbando³, Robert Colebunders¹

Introduction

- Onchocerciasis-associated epilepsy (OAE) is increasingly recognised as an important public health problem in areas with high ongoing onchocerciasis transmission.
- Retrospective studies suggest that OAE can be prevented by strengthening onchocerciasis elimination programs.
- Using a prospective design, we implemented onchocerciasis elimination interventions in two endemic sites and investigated their impact on epilepsy including nodding syndrome (a form of OAE).

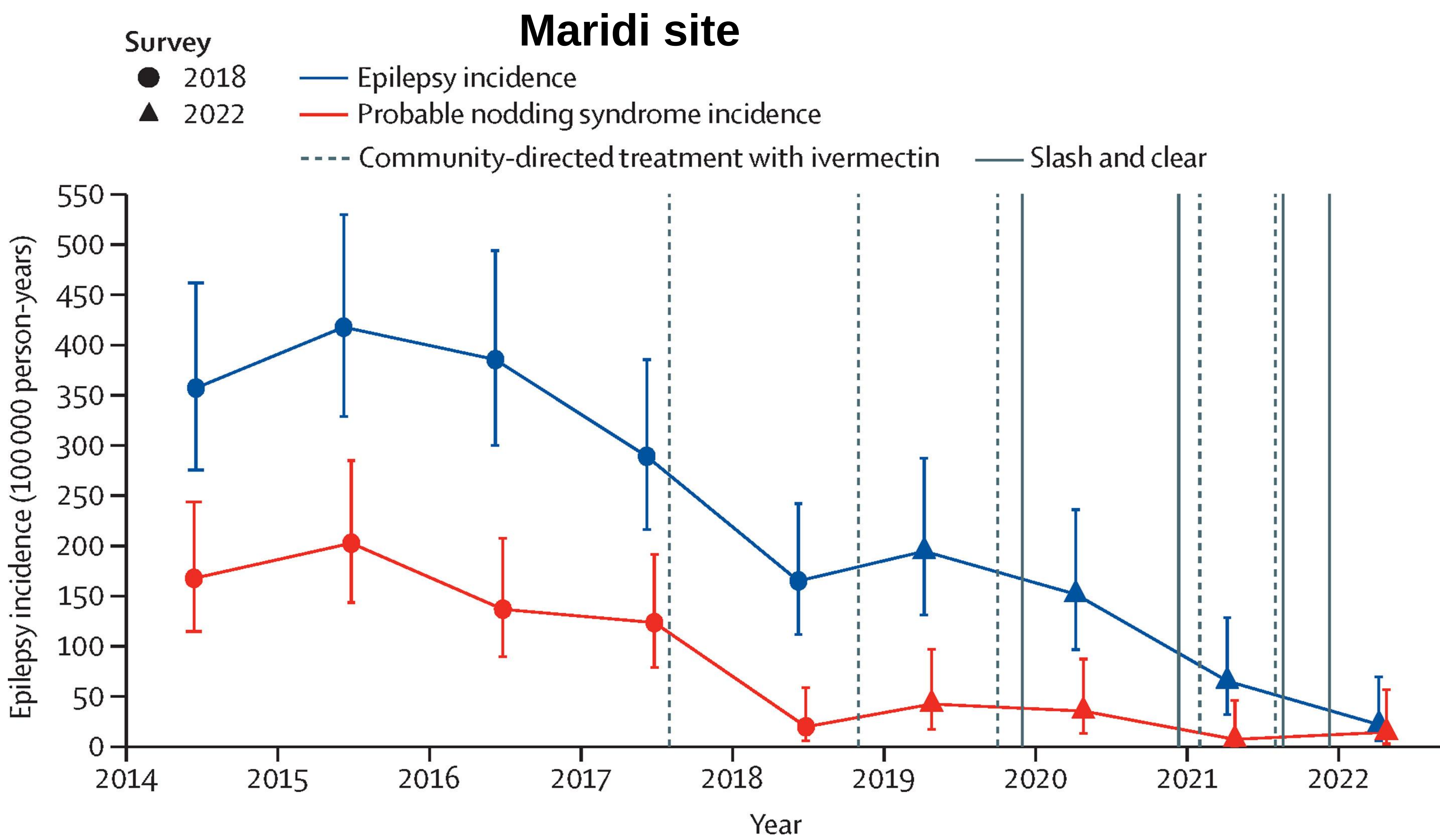
Methods

- Study sites:** Maridi (South Sudan) and Mahenge (Tanzania)
- Design:** Pre-post comparative study
- Approach:** Door-to-door epilepsy surveys
- Survey years:** 2017/18 vs 2021 (for Mahenge); 2018 vs 2022 (for Maridi)
- Interventions:** Switching from annual to bi-annual ivermectin distribution (both sites); vector control via “Slash and Clear” (Maridi only)
- Outcomes:** Cumulative incidence (per 100,000 person per year) of all epilepsy, and specifically of nodding syndrome (NS) during the years before and after the intervention. Descriptive analysis for new epilepsy cases over the years.

Results

- Pre- vs post-intervention population:** n=17,652 vs 14,402 (Maridi); n=5,444 vs 6,598 (Mahenge)

	Incidence in Mahenge	Incidence in Maridi
Epilepsy, pre-	177.6 (95% CI: 121.2-258.5)	348.8 (95% CI: 307.2–395.8)
Epilepsy, post-	50.5 (95% CI: 25.7-96.2)	41.7 (95% CI: 22.6–75.0)
NS, pre-	18.4 (95% CI: 4.7-58.5)	154.7 (95% CI: 127.6–187.3)
NS, post-	5.1 (95% CI: 0.3-32.8)	10.4 (95% CI: 2.7–33.2)



Conclusion

- Onchocerciasis elimination would likely decrease the incidence of epilepsy in very endemic foci
- Sustainable OAE interventions should be implemented in onchocerciasis hotspots

Funding

- VLIR-UOS (671055), R2HC (76422)
- FWO (G0A0522N), FWO (1296723N)