

Early rotavirus outbreak response in a rural setting: a district-level health system case study from Ngamiland, Botswana

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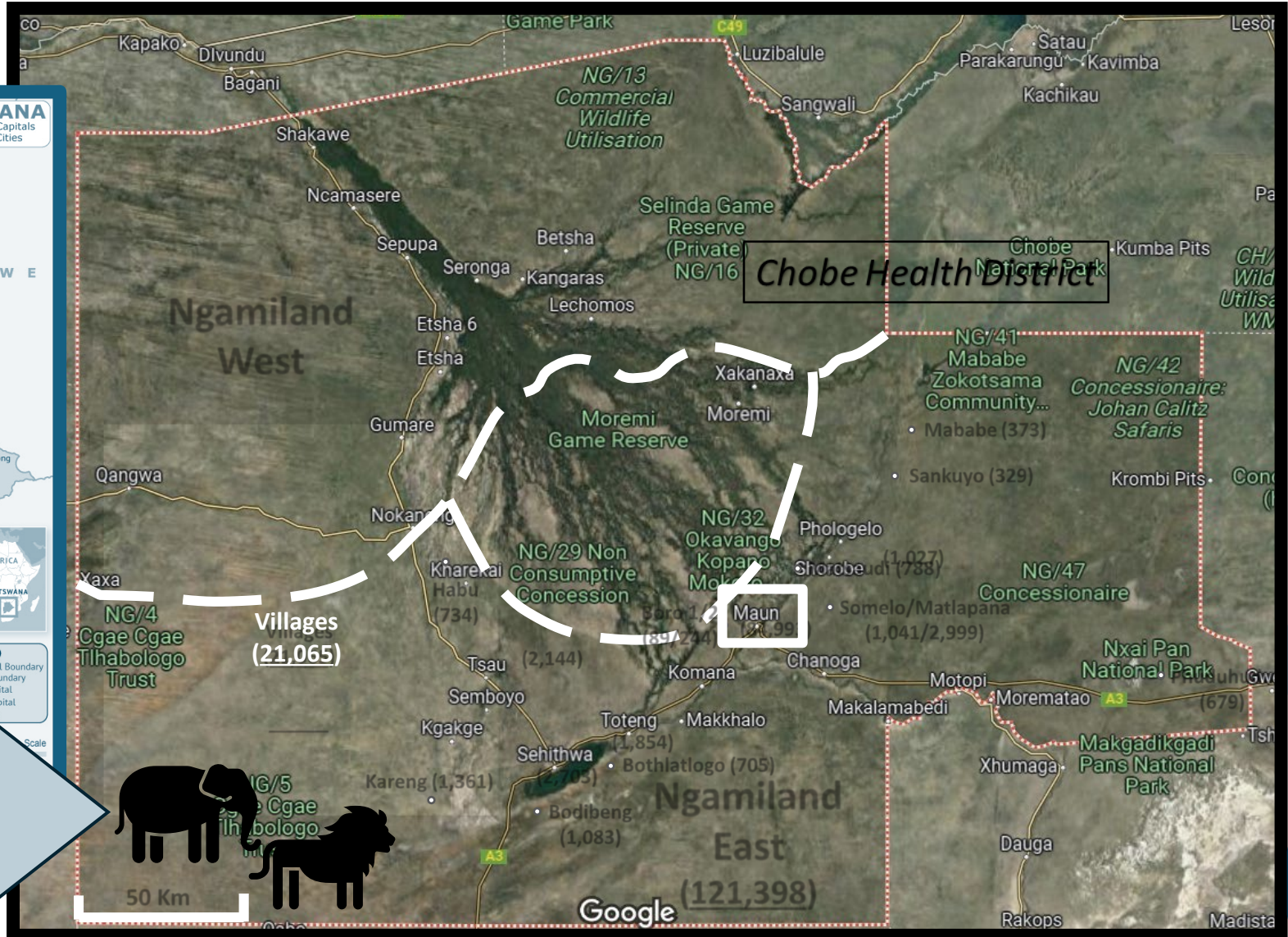
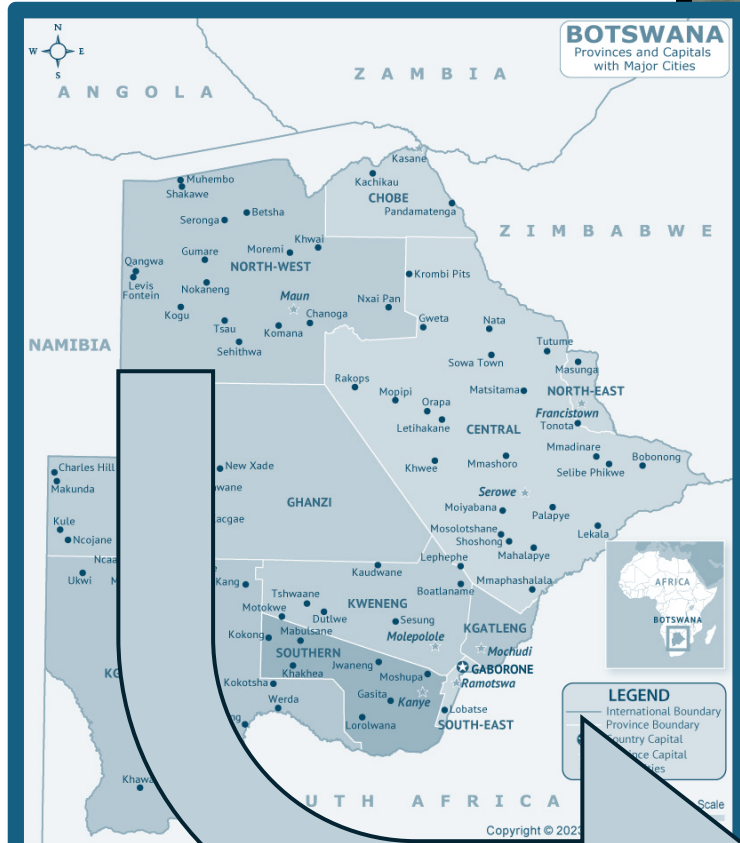


02 October 2025



REPUBLIC OF BOTSWANA
Ministry of Health

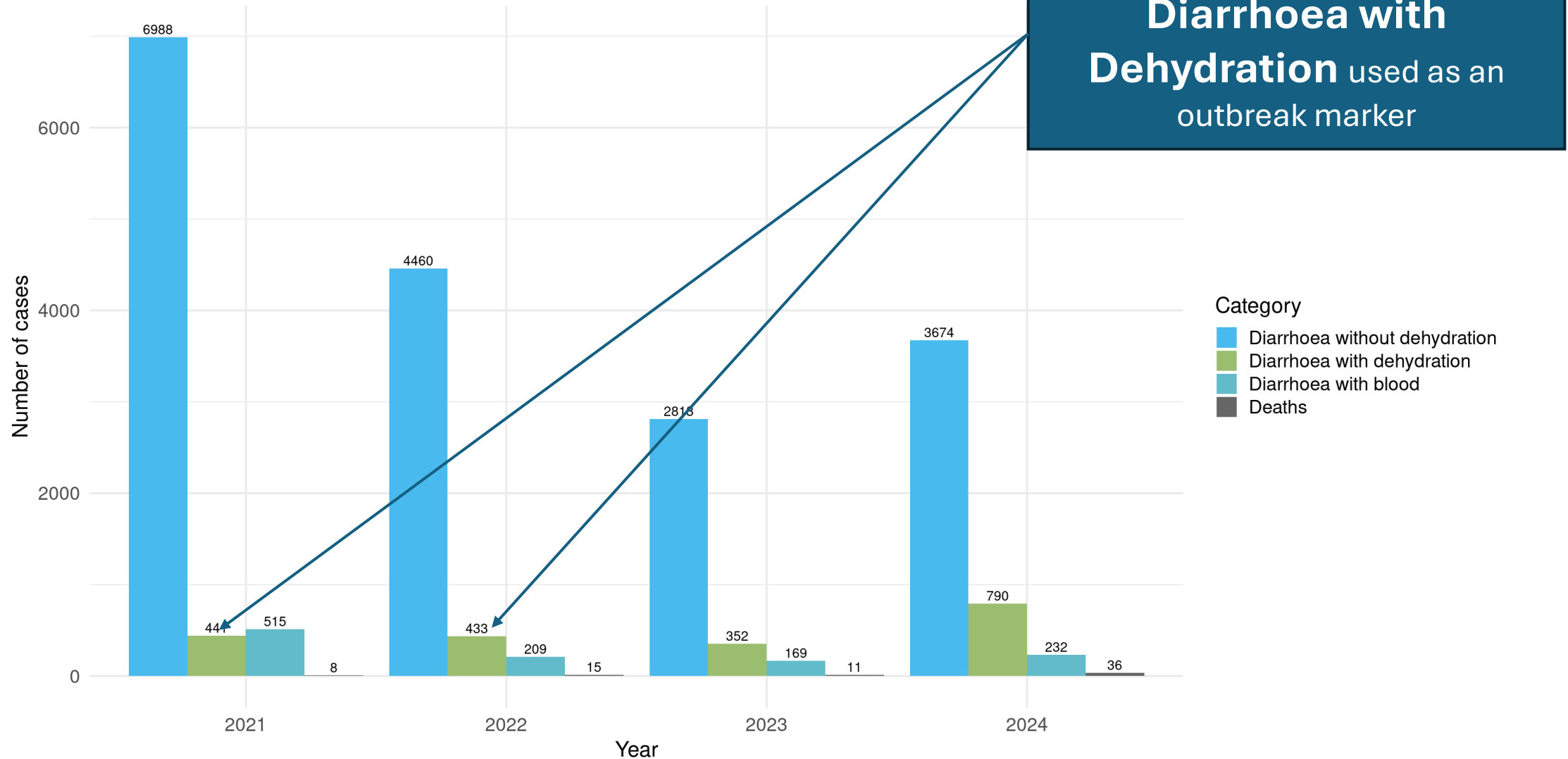
North-West Botswana



- North-West
- Area: 86,100km²
- Population
2022
121,398
- 22 Villages
- 1 District Hospital
- 12 Clinics
- 17 Health Posts
92 Mobile Stops
- Okavango Delta:
55 Safari Camps
- 17 private clinics
2 private Hospitals
- 1 Border-
MIA
- >10 Partners



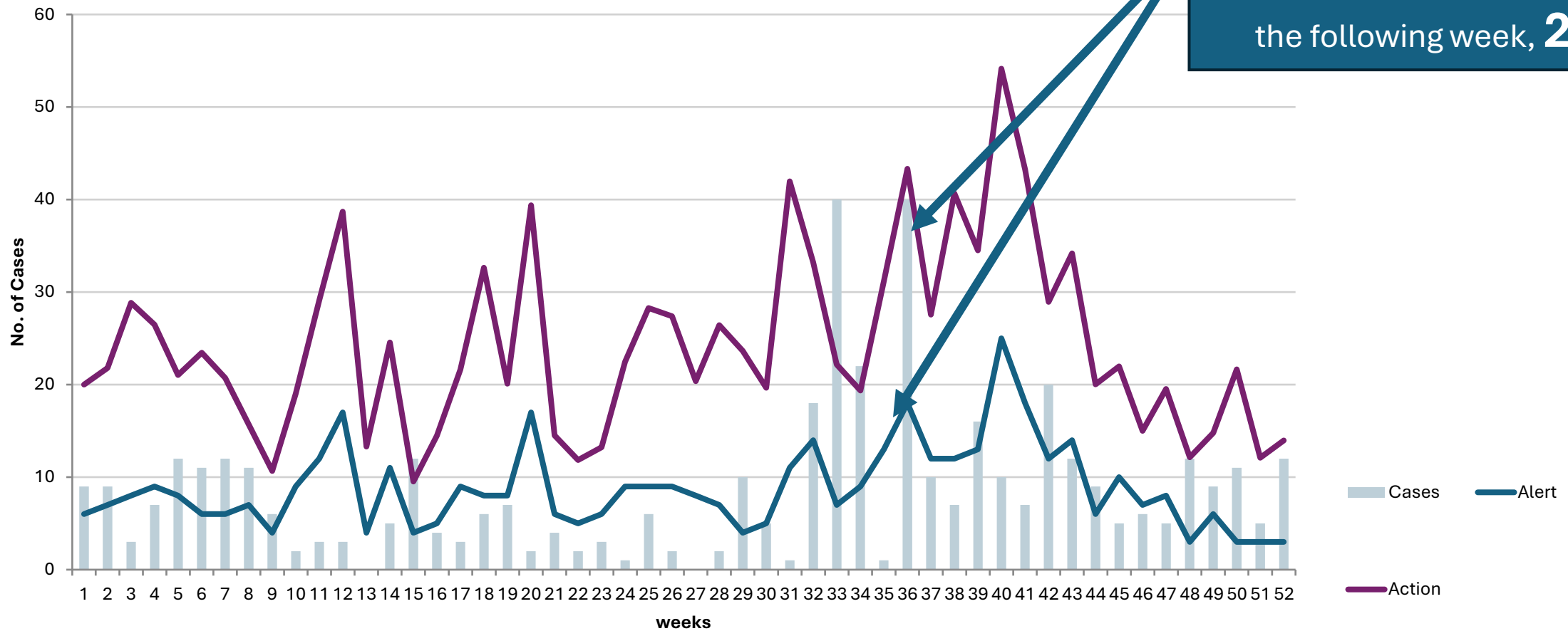
Burden of diarrhoeal disease in Ngamiland, 2021–2024





Diarrhoea with Dehydration, 2024

Action and Alert Thresholds

Reached **ALERT** threshold during the week ending 11 August 2024, and **ACTION** threshold the following week, **2024**.

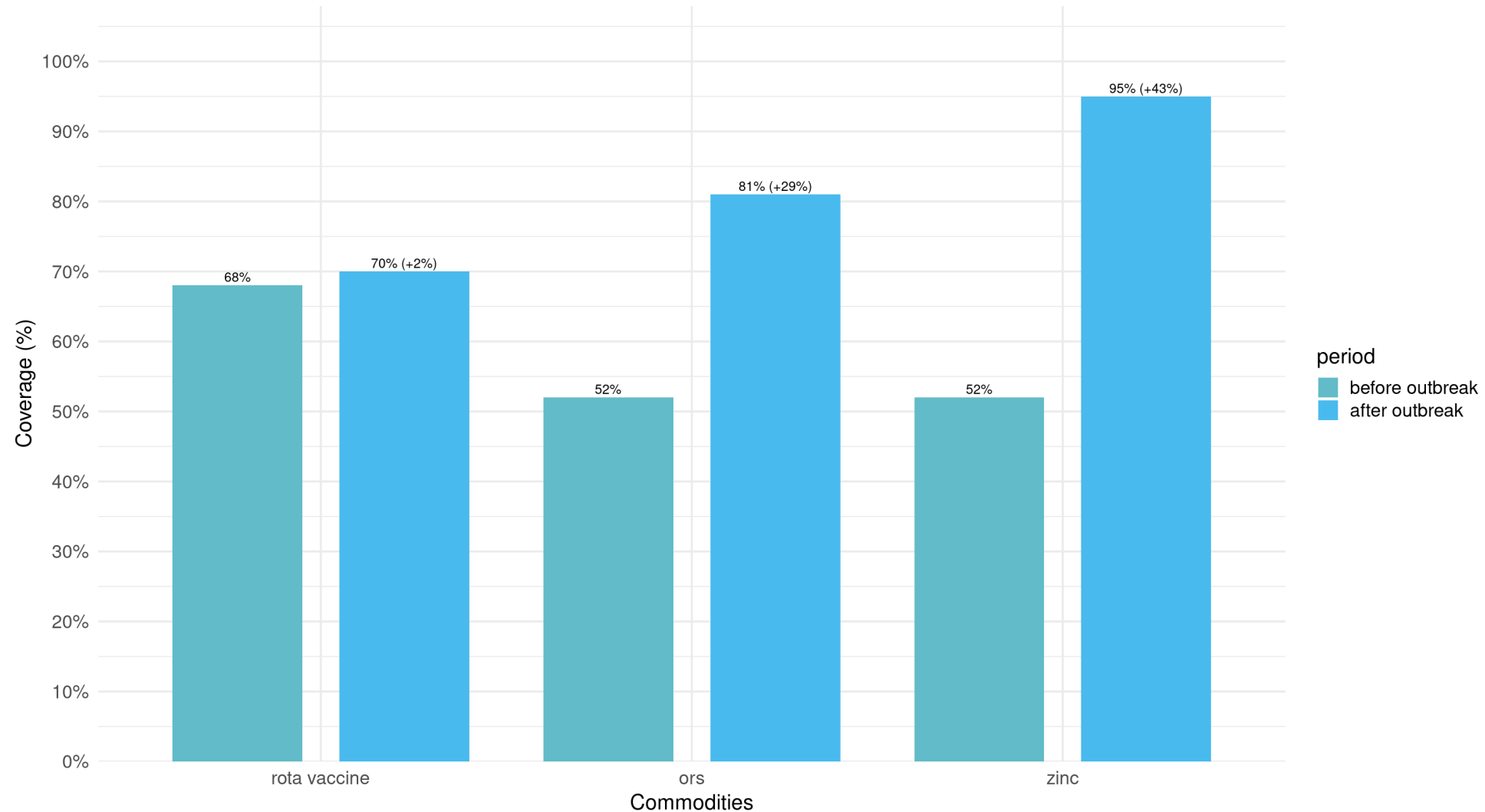


Surveillance thresholds built on annual averages



Seasonal peaks expected
but 2024 far exceeded **Public
Health Emergency**
thresholds

Commodity coverage before and after outbreak declaration, 2024



Mortalities, August 2024

Total mortalities (N=14)	Alive at presentation (n=6)	Brought in dead (n=8)
Age Group		
Less than 1 year old	4	8
One year and older	2	0
Gender*		
Female	3	4
Male	3	2

*Missing n=2

Almost all **mortalities**
where in infants **less
than one years old**

Majority of mortalities in
infants **brought in
dead**

Identifying rotavirus



In August, **56.2%** (18/32) of stool samples tested **positive for rotavirus**; by September, positivity fell to 4.2% (2/48).
5 samples showed *Taenia saginata*, *Giardia lamblia*, *Cryptosporidium*

No **point source** was identified for rotavirus against a backdrop of **poor water quality**



40.0% (4/10) samples from purification operators and **21.4%** (3/14) community sites tested positive for enteric pathogens such as *pseudomonas aeruginosa*, *E-Coli*, and coliforms

District level response

- Declaration of a Public Health Emergency
- Community mobilization, through NGOs, traditional leaders, faith-based actors, and healers, began in early September.
- Engaged district leadership
- Deployed Health promotion and IMCI teams for weekly commodity monitoring and supportive site visits for staff training in IMCI



Revealed systemic and structural challenges



Health System Capacity

- Staff Shortages (9 Doctors in District hospital), 5 in clinics, & 1 pediatrician
- No ICU in Ngamiland; nearest referral Hospital at least 500km away
- Pediatric ward overflowing
- Shortage of medical commodities



Treatment and Clinical Management

- Poor adherence to IMCI guidelines, under used De-CAM corners



Monitoring and Evaluation

- Late reporting to M&E including deaths – surveillance systems were not agile enough

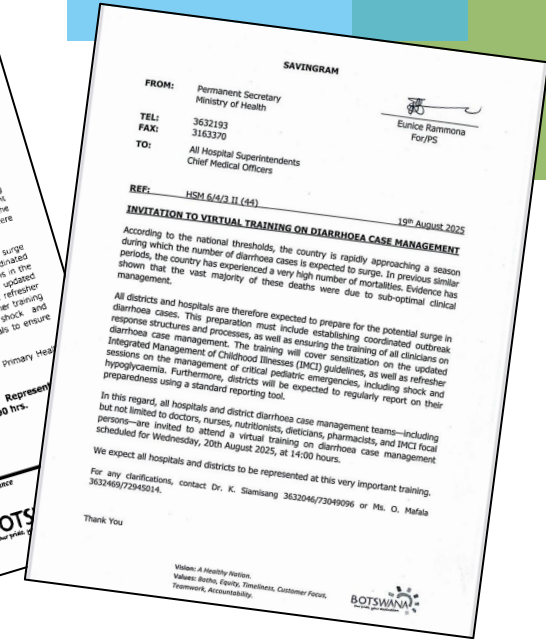
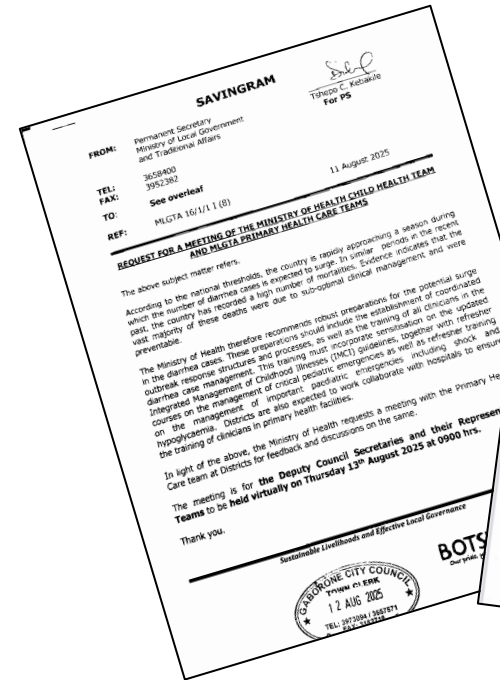


Community Care

- Late health seeking behaviors
- Access to clean water
- “Noka ya tshela”

Lessons learned

- **Readiness assessment** by CHN
- **Facility support visits** and mentorship
- **Refresher training** for clinicians
- National **IMCI guidelines** distributed to clinics
- **Risk Communication** to political leadership, community leaders, Traditional doctors and direct to communities to reduce number brought in dead



Private-public collaboration for top-up child-hood vaccinations

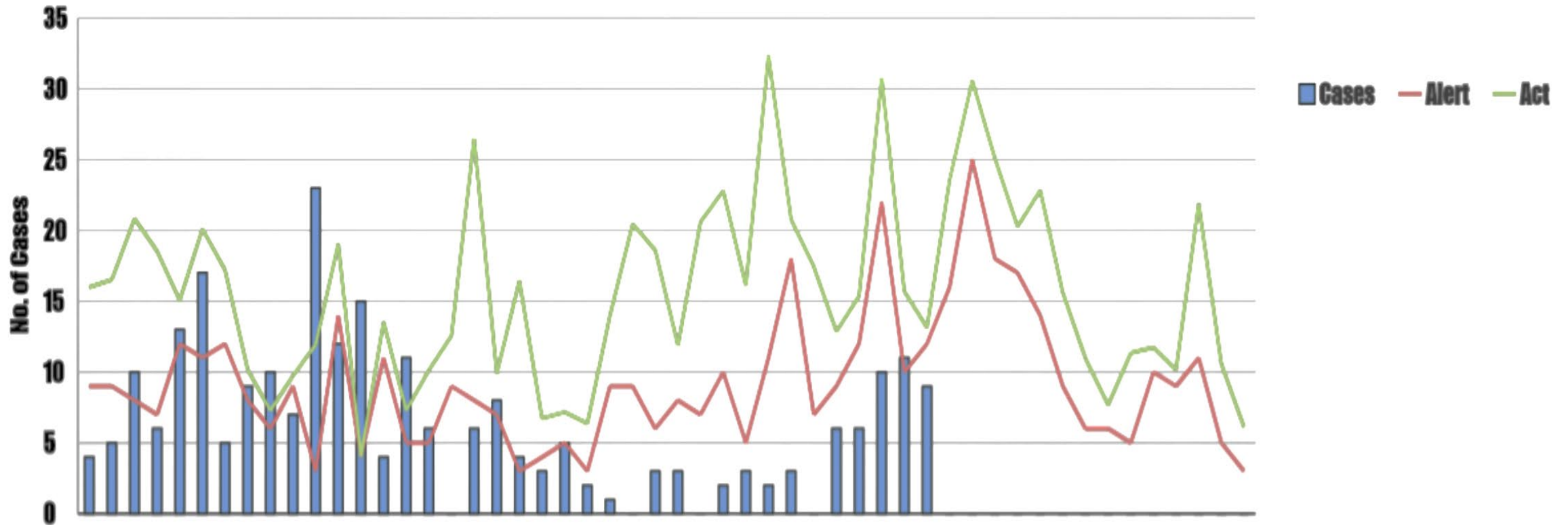


“Saving Lives and Livelihoods”

- Collaboration between CDC Africa, Mastercard foundation, and AMREF
- Provide top-up immunization for under 5s
- **Current Rota coverage is at 80%.**

A way forward

Ngamiland Diarrhoea with Dehydration 2025



An aerial photograph of a wide, winding river flowing through a vast, green landscape. The river is a deep blue color, contrasting with the surrounding green grass and scattered trees. The terrain appears to be a floodplain or a similar natural wetland area. The sky is a clear, bright blue with some light clouds. The overall scene is peaceful and scenic.

Thank You

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