Smarter Prescribing for Small Patients: AWaRe Antibiotic Use in Newborn Care Across 68 Hospitals implementing with NEST360 in Kenya, Malawi, Nigeria, and Tanzania

Introduction

Nearly **1 in 4 neonatal deaths** related to **infection**

Standard of care=**blood culture** and empiric **antibiotics**

Antibiotics often prescribed without culture guidance in high-burden settings

WHO AWaRe classification guides antibiotics to improve **antimicrobial stewardship**

Methods

- **Observational study:** using prospective, individually linked neonatal inpatient data from the **Neonatal Inpatient Dataset (NID)**
- All newborns admitted to NEST360 implementing hospitals were eligible for inclusion (June 2024–March 2025)
- **Descriptive statistics:** to assess prevalence of clinical infection diagnoses and overall antibiotic use
- **Antibiotic administration events categorized:** using **World Health Organization (WHO) Access, Watch, Reserve (AWaRe) Classification** across newborn ward admissions in each facility

Conclusion

Antibiotic overuse compared to clinical infection diagnosis and **lack of blood culture use** needs to be addressed. **Empiric antibiotic** choice in units needs to be revised, considering the high proportion of Watch antibiotics prescribed.

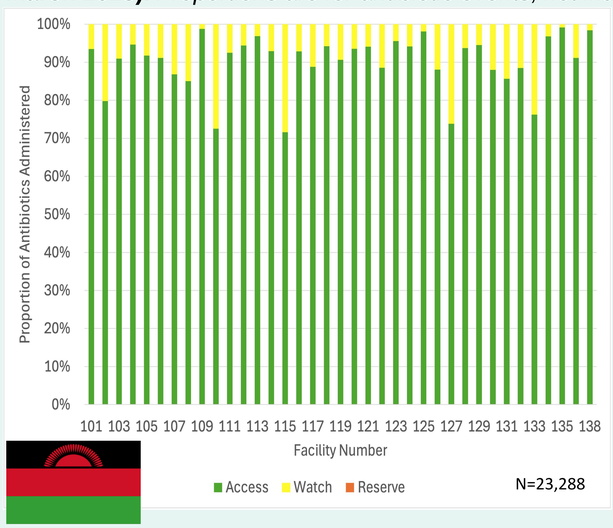
Hospital teams should **use data** to investigate these gaps, **improve blood culture use**, and drive progress with locally-driven **antibiotic stewardship** programmes.

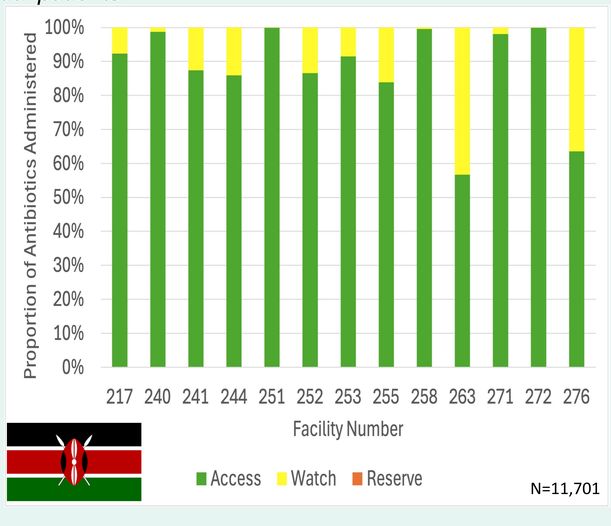
About the Research

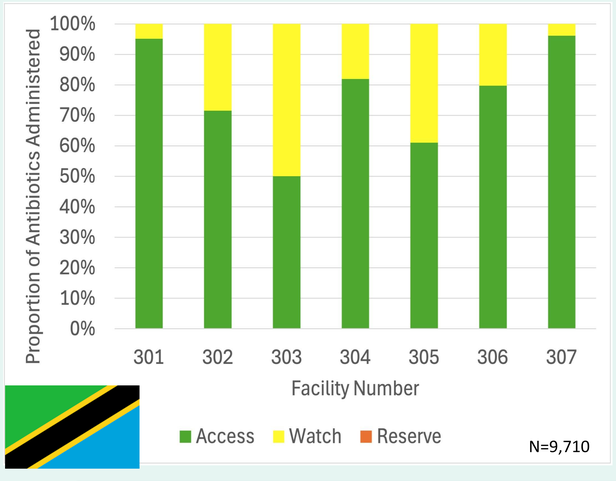
78,859 newborn admissions were analysed across 68 neonatal units. We describe antibiotic use in terms of WHO AWaRe categories for neonates admitted to hospitals implementing with the NEST360 Alliance in Kenya, Malawi, Nigeria, and Tanzania.

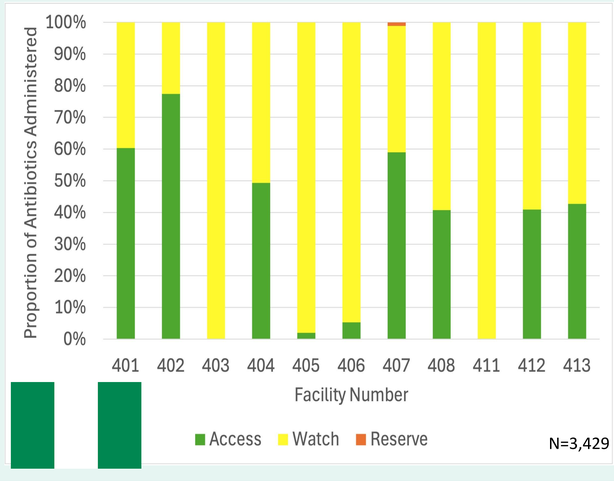
Results

Figure 1. Proportion of Antibiotics Administered in AWaRe categories by Facility and Country (June 2024–March 2025). *Proportions are for antibiotic events, not individual patients.*









Over half (57.2%, interfacility range 11.3–99.2%) of admitted newborns **received antibiotics** despite **only 24.1%** (interfacility range 7.6–66.8%) having a **clinical diagnosis of infection and only 8.6% (interfacility range 0-87%) with a blood culture performed.**

81% of newborns were given **Access** category medications only, **8% Watch** antibiotics only, **11% both Access and Watch** antibiotics, and **0.005%** had prescriptions for Aware and **Reserve** antibiotics

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