**M24M19/001**

**B28697  
TAYEBWA YONAH**

**DATA‑DRIVEN NARRATIVE AND POLICY SUGGESTIONS**

My analysis of the African healthcare dataset, which includes indicators such as malaria prevalence, HIV rates, healthcare facility density, and access to clean water and sanitation, reveals significant disparities across countries. After cleaning and standardizing the data, we explored relationships between healthcare access metrics and disease burden, uncovering patterns that are critical for targeted interventions.

A clear trend emerges: countries with higher healthcare facility density and better access to clean water and sanitation report lower rates of malaria and HIV prevalence. For instance, nations with above‑average facility density (>1.5 facilities per 10,000 population) consistently exhibit reduced disease burdens, suggesting that infrastructure investment directly impacts public health outcomes. Conversely, countries with limited clean water access (<50% population coverage) show persistently high malaria incidence, highlighting the interconnectedness between environmental conditions and disease spread.

The data also indicates that HIV prevalence is strongly correlated with regions lacking robust healthcare access and education programs, underscoring the need for integrated health and community outreach strategies. Patterns in the scatter plots show a negative correlation between facility density and disease prevalence, while histograms reveal skewed distributions, with a few outliers facing extremely poor access.

**Policy Recommendations:**

Strengthen healthcare infrastructure: Prioritize funding to increase facility density in under‑served regions. This directly reduces disease burden and improves response times during outbreaks.

Expand clean water and sanitation programs: Investment in water access is a cost‑effective strategy that correlates with lower malaria prevalence and improved general health.

Targeted outreach and education: Countries with high HIV prevalence should combine infrastructure improvements with education and preventive measures.

Monitor through dashboards: An interactive dashboard should be adopted by ministries and NGOs to track these metrics in real time, enabling proactive interventions.

By leveraging these insights, policy makers and civil society can implement data‑informed decisions, ensuring equitable access to healthcare and addressing the root causes of preventable diseases.