

METHODS NOTE · Peer-reviewed · Published · Live dashboard figures

Inequities in Clinical Trial Distribution for Neglected Tropical Diseases: A Cross-Sectional Analysis of Global Research Concentration

Ronald Bwambale, Josette Ssanyu, Nelson Nsubuga, Janepher Nabaasa, Aggrey Gavamukulya, Persis Tikabulamu, Geoffrey Emesu & Phiona Obbo

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KEY WORDS neglected tropical diseases; Africa; Clinical trials

Abstract

Background Neglected Tropical Diseases (NTDs) affect over 1 billion people globally (1), with Africa carrying a disproportionate burden. Despite the WHO 2030 roadmap for elimination, clinical research infrastructure remains unevenly distributed. Twenty NTDs collectively affect over 500 million Africans(2), yet most NTDs have fewer than 10 active trials each, making them the most neglected diseases in the most neglected continent.

Methods This study analyzed trial data for major NTDs (schistosomiasis, onchocerciasis, and lymphatic filariasis) from the ClinicalTrials.gov. Research concentration was quantified using the Herfindahl-Hirschman Index (HHI), Gini Coefficient, and Shannon Entropy. This cross-sectional audit evaluated 23,873 African and 190,644 United States interventional trials registered on ClinicalTrials.gov through April 2026.

Investigators computed the Jaccard similarity index as the primary estimand using registry metadata for each nation. Results Analysis revealed a high concentration of research (HHI = 0.4154), indicating high concentration in select research hubs, and significant inequality in trial distribution (Gini = 0.69), which reflects substantial inequality in research participation. Africa registered no relevant trials compared to 15 in the United States, revealing a 15-fold absolute gap in research volume.

Shannon entropy of the trial distribution was 2.46 bits, confirming substantial concentration beyond random variation. **Conclusion** Clinical research is heavily centralized in established hubs, with Africa under-represented. Bridging this gap requires targeted investment in local research capacity and more equitable distribution of funding to support global elimination goals.

Interactive dashboard figures

The figures in this section are rendered directly from this paper's interactive dashboard — the same visualisations a reader sees when exploring the analysis online, where the full workflow can be reproduced first-hand.

Interactive dashboard:
<https://mahmood726-cyber.github.io/africa-e156-students/health-disease/dashboards/ntd-atlas.html>

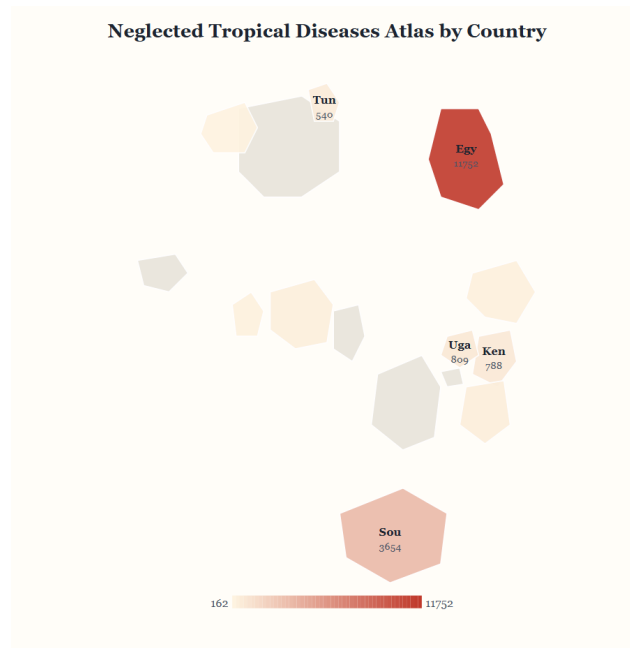


Figure 1. Neglected Tropical Diseases Atlas by Country Rendered directly from the article's live interactive dashboard.

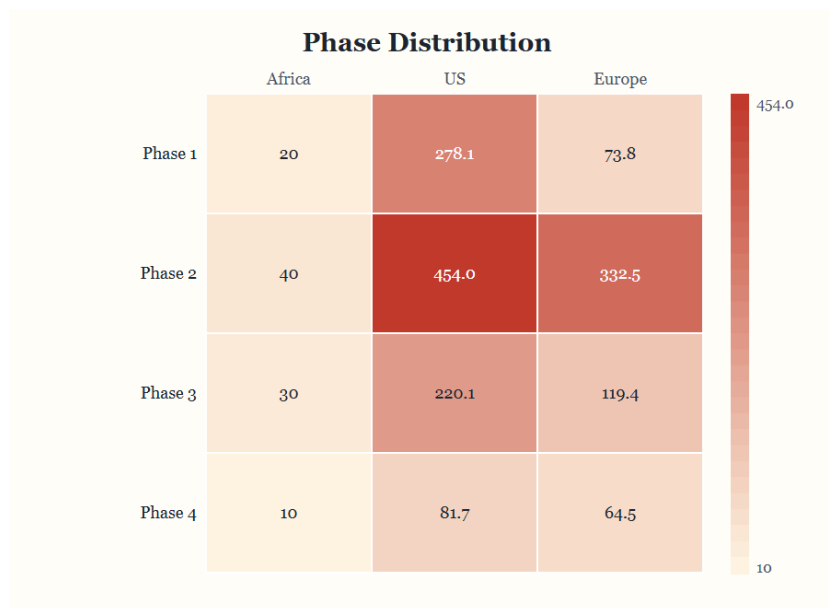


Figure 2. Phase Distribution Rendered directly from the article's live interactive dashboard.

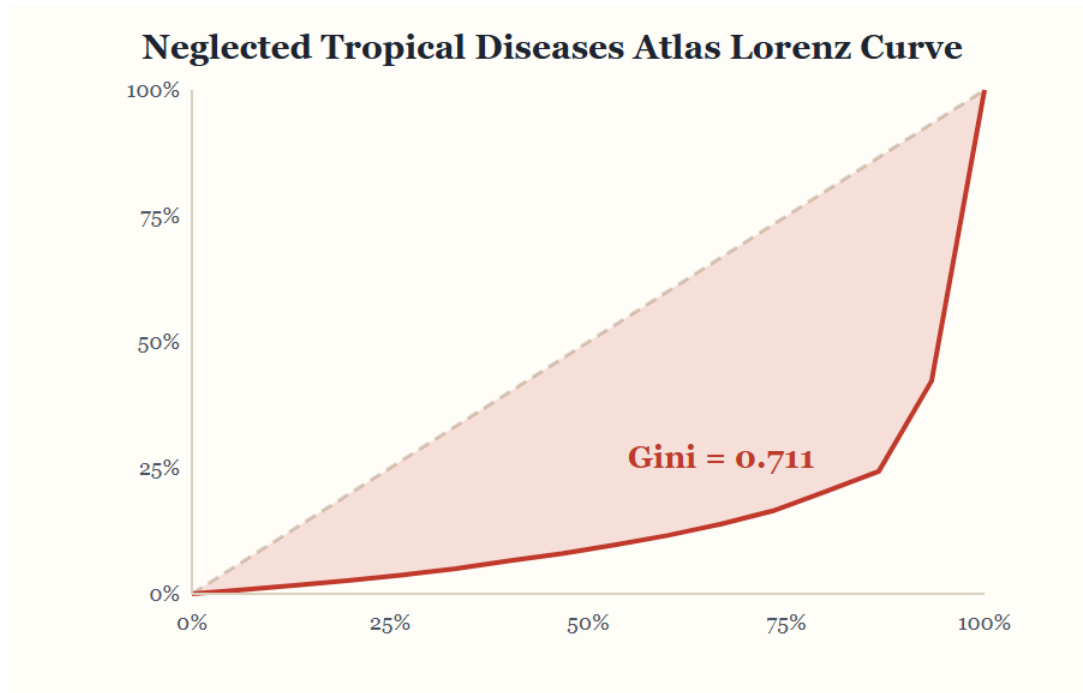


Figure 3. Neglected Tropical Diseases Atlas Lorenz Curve Rendered directly from the article's live interactive dashboard.

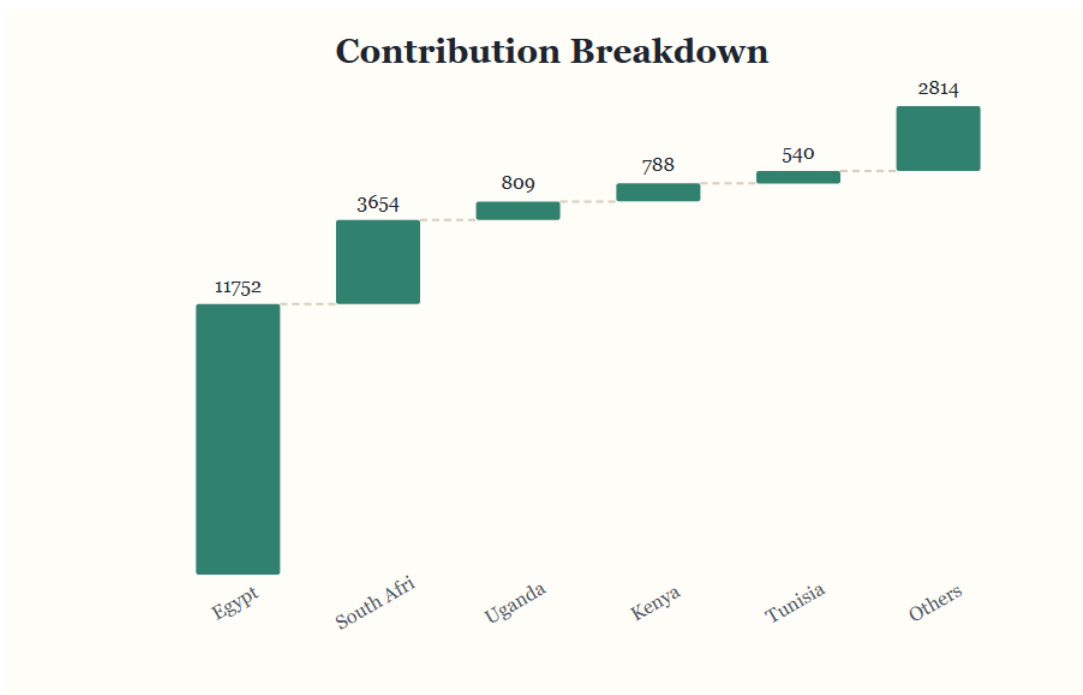


Figure 4. Contribution Breakdown Rendered directly from the article's live interactive dashboard.

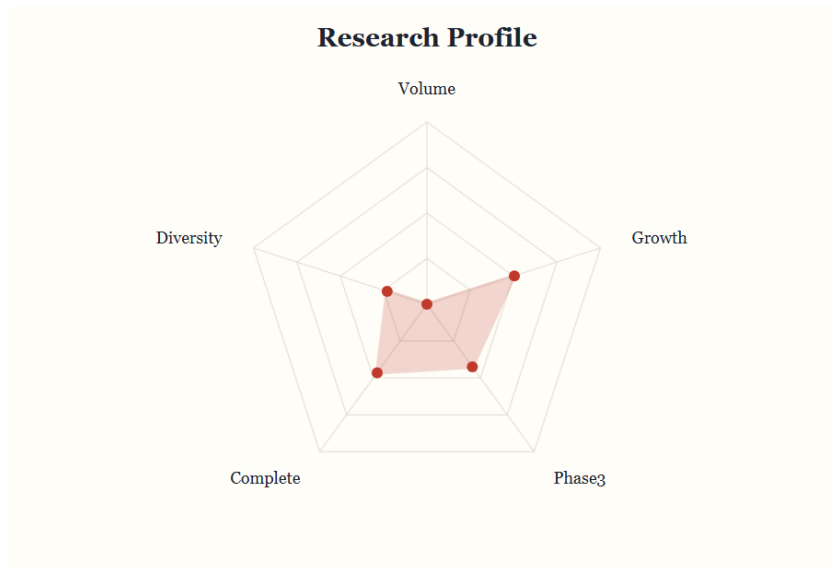


Figure 5. Research Profile Rendered directly from the article's live interactive dashboard.

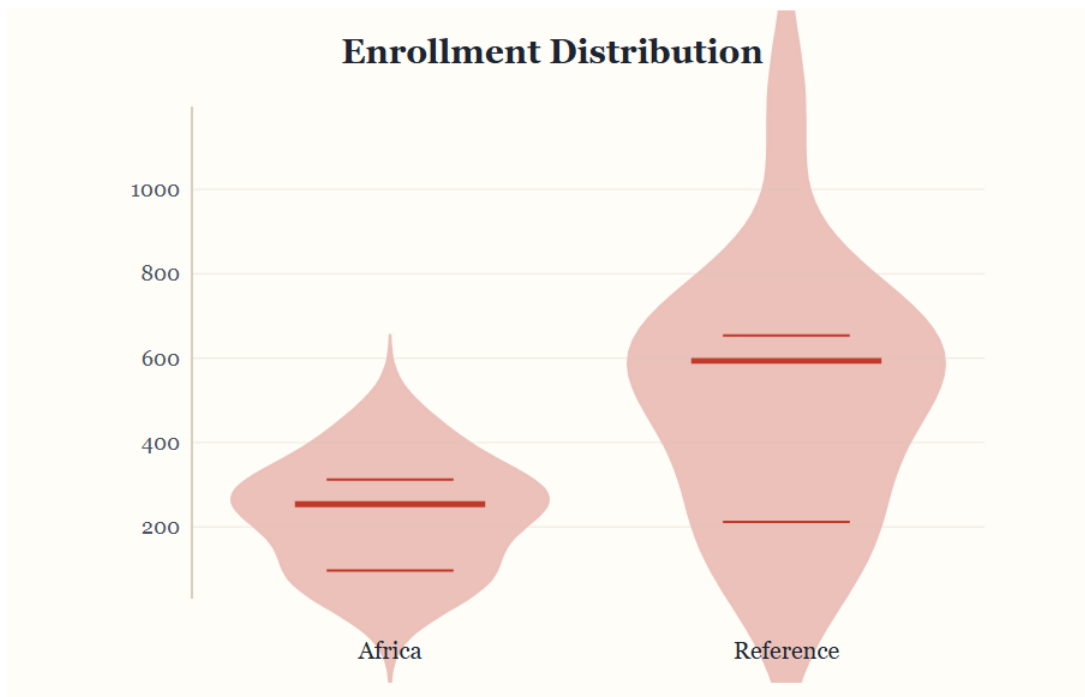


Figure 6. Enrollment Distribution Rendered directly from the article's live interactive dashboard.

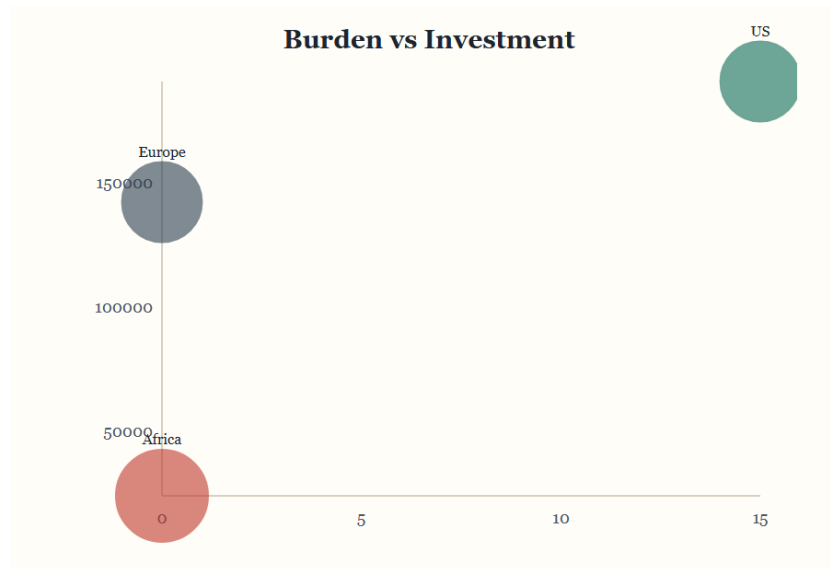


Figure 7. Burden vs Investment Rendered directly from the article's live interactive dashboard.

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