

# Monitoring Inequalities in Child Vaccination in Sub-Saharan Africa: Analysis of 25 National Health Surveys



IMMUNIZATION  
ECONOMICS.ORG

Firew Bobo<sup>1,2</sup> Mirkuzie Woldie<sup>2</sup> Augustine Asante<sup>3</sup> Angela Dawson<sup>1</sup> Andrew Hayen<sup>1</sup>



## Our objectives

- Vaccines have substantially contributed to reducing morbidity and mortality among children, but inequality in coverage continues to persist.



- In this study, we aimed to examine inequalities in child vaccination coverage in sub-Saharan Africa.

## Methods

**Data source:** We analysed demographic and health survey data collected from 25 sub-Saharan countries since 2013.

### Measures:

We defined full vaccination as children who had received BCG, OPV 3, DTP 3, and measles vaccine at the age of 12 months. Incomplete vaccination was defined as a child missing at least one dose of any of the vaccines; and zero-dose children, are those who had not received any doses of vaccines

### Statistical analysis

We used the concentration index to estimate wealth-related inequalities in full vaccination coverage. We also identified predictors of inequalities in the full vaccination coverage using multilevel logistic regression models.

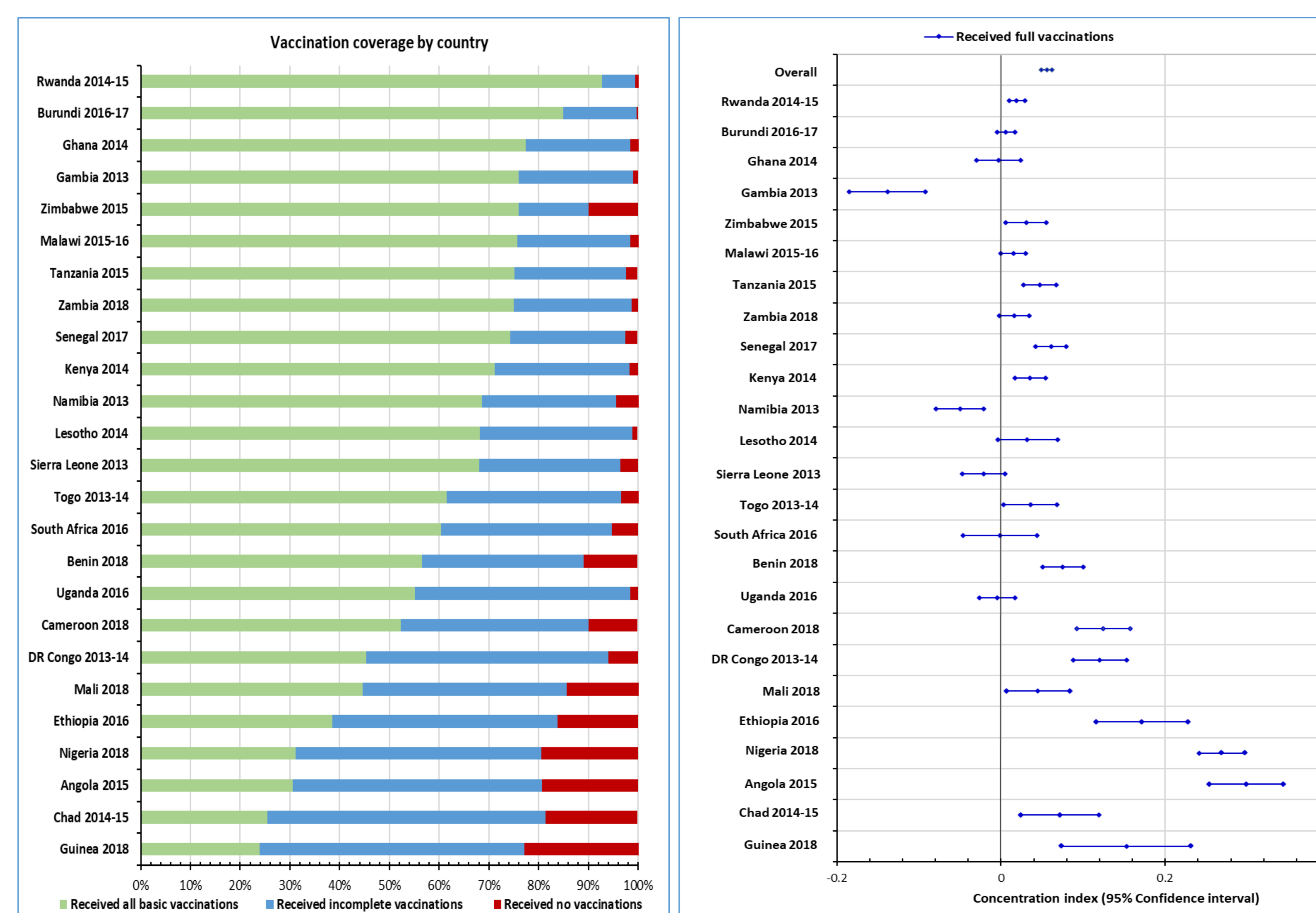
## Acknowledgements

University of Technology Sydney  
The DHS program

## Results

- Overall, 56.5% (95% CI: 55.7% to 57.3%) of children received full vaccination, 35.1% (34.4% to 35.7%) had incomplete vaccination, while 8.4% (95% CI: 8.0% to 8.8%) of children remained unvaccinated.
- Full vaccination coverage across the 25 sub-Saharan African countries ranged from 24% in Guinea to 93% in Rwanda. We found pro-rich inequality in full vaccination coverage in 23 countries, except for Gambia and Namibia, where we found pro-poor vaccination coverage.
- Countries with lower vaccination coverage had higher inequalities suggesting pro-rich coverage, while inequality in unvaccinated children was disproportionately concentrated among disadvantaged subgroups.
- Four or more antenatal care contacts, childbirth at health facility, improved maternal education, higher household wealth, and frequently listening to the radio increased vaccine uptake

## Increasing coverage addresses inequalities



## Implications for policy and practice

- Many children remain unvaccinated in sub-Saharan Africa.
- Possible explanations for under vaccination or no vaccination may include
  - vaccine hesitancy or refusal,
  - lack of access to vaccination services
  - missed opportunities
- Health facilities should also focus on addressing vaccine stockouts by securing adequate vaccine doses and ensuring reliable cold chain management.
- In addition to addressing the vaccine supply issues, health service delivery systems should also target increasing demand for vaccination services by providing targeted health information and education.

## Conclusions

- Continued efforts to improve access to vaccination services are required in sub-Saharan Africa.
- Vaccination programs and policies should primarily target areas with poor vaccination coverage and directly consider the needs and experiences of poor and vulnerable populations.

## Contact information

Email: [Firew.T.Bobo@student.uts.edu.au](mailto:Firew.T.Bobo@student.uts.edu.au)

Twitter: @FirewBobo

Read related works here!



## Affiliations

University of Technology Sydney, Sydney, Australia

University of New South Wales, Sydney, Australia

Fenot Project of Harvard T.H. Chan School of Public Health, Addis Ababa, Ethiopia