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

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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.

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 contracts, childbirth at health facility, improved maternal education, higher household wealth, and frequently listening to the radio increased vaccine uptake.

Increasing coverage addresses inequalities

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.

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.

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