Socio-spatial equity analysis of relative wealth index and emergency obstetric care accessibility in urban Nigeria

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Abstract

Background Better geographical accessibility to comprehensive emergency obstetric care (CEmOC) facilities can significantly improve pregnancy outcomes. However, with other factors, such as affordability critical for care access, it is important to explore accessibility across groups. We assessed CEmOC geographical accessibility by wealth status in the 15 most-populated Nigerian cities.

Methods We mapped city boundaries, verified and geocoded functional CEmOC facilities, and assembled population distribution for women of childbearing age and Meta's Relative Wealth Index (RWI). We used the Google Maps Platform's internal Directions Application Programming Interface to obtain driving times to public and private facilities. City-level median travel time (MTT) and number of CEmOC facilities reachable within 60 min were summarised for peak and non-peak hours per wealth quintile. The correlation between RWI and MTT to the nearest public CEmOC was calculated.

Results We show that MTT to the nearest public CEmOC facility is lowest in the wealthiest 20% in all cities, with the largest difference in MTT between the wealthiest 20% and least wealthy 20% seen in Onitsha (26 vs 81 min) and the smallest in Warri (20 vs 30 min). Similarly, the average number of public CEmOC facilities reachable within 60 min varies (11 among the wealthiest 20% and six among the least wealthy in Kano). In five cities, zero facilities are reachable under 60 min for the least wealthy 20%. Those who live in the suburbs particularly have poor accessibility to CEmOC facilities.

Conclusions Our findings show that the least wealthy mostly have poor accessibility to care. Interventions addressing CEmOC geographical accessibility targeting poor people are needed to address inequities in urban settings.