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Trends and predictors of home deliveries in Kassena-Nankana East and West districts in Ghana: 2003-2009

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ABSTRACT

Introduction: About sixty million of home deliveries occur worldwide every year. The vast majority of them in Low and Middle Income Countries (LMIC) where most of all out of health facility deliveries are attended by relatives and traditional births attendants . Poor hygienic conditions, ignorance of clean birth practices and lack of skills to manage the complications when they occur, make home deliveries unsafe for the mothers and their newborns. Thus, getting pregnant women to give birth at health facility is critical in the efforts to improve reproductive health outcomes in many LMIC.

In Ghana, the out-of-pocket fees were waived for pregnant women since 2003 and the primary health care system was modified to station community health nurses in rural areas. These two strategies have a potential to reduce the proportions of home deliveries by removing financial and distance barriers to health facility utilization. The aim of this study is to document the trends and the predictors of home deliveries after the implementation of the above interventions in two districts that pioneered their implementation in the country.

Material and methods: The study was carried out in Kassena-Nankana East and West districts, of the Upper East region in Ghana, where the Navrongo Health Research Centre operates the Navrongo Health and Demographic Surveillance System (NHDSS). The study design was a series of cross sectional analytical studies using secondary data. All the deliveries that occurred between January 2003 and December 2009 in the area were included in the analysis. We used time series analysis to describe the trends of home deliveries over time and a two level logistic regression models to determine the predictors of home deliveries.

Results: In all, 25539 deliveries occurred, majority (58.11%) of them at home. The trend analysis showed a consistent and significant decline in rates of home deliveries over time

($p<0.001$). The stationary time series pattern followed by the rate of home deliveries is an Autoregressive Moving average ARMA (1, 1) model. The rates of home deliveries were halved during the study period; from 69% in 2003 to 36.54% in 2009. Although the decline was consistently observed within all the subgroups, it was more marked in the poor, the rural residents and the uneducated populations.

Non maternal education (OR: 0.28, 95% CI: 0.23-0.34; for secondary/tertiary education compared to no education), traditional religion practice by the mothers (OR: 0.59, 95% CI: 0.53-0.64; for Christians compared to traditional religion), the rural residency (OR: 0.09, 95% CI: 0.08-0.12; for the urban residents compared to rural residents) and poverty (OR: 0.16, 95% CI: 0.13-0.20; for the rich compared to the poor) were strong predictors for home deliveries. Other significant predictors include the high number of parity (OR: 1.98, 95% CI: 1.72-2.28; for multipare mothers compared with nullipare), the high number of previous home deliveries (OR: 2.96, 95% CI: 2.25-3.90; for two or more previous home deliveries compared to zero previous home delivery), the marital status (OR: 0.88, 95% CI: 0.78-0.99; for non-married mothers compared to married mothers and, the pregnancy status (OR:2.21, 95% CI: 1.77-2.75; for single fetus compared to multiple fetuses).

Conclusion: The results showed that home deliveries are sharply declining since 2003 in the study area and the gaps between the rich and the poor, between the rural and the urban residents and, between educated and uneducated persons are also reducing. Even though we did not investigate the health care system related factors, the findings in our study are consistent with those broadly reported elsewhere about the predictors of home deliveries. Further studies with the before-after design are needed to show that the observed results are attributable to the two interventions.