

Maternal Health in Ghana: Investigating the Impact of the National Health Insurance Scheme on Maternal Health Indicators

INTRODUCTION

Reducing maternal mortality has been a global priority for more than two decades now, and Millennium Development Goal 5 targets a 75% reduction in maternal mortality ratios between 1990 and 2015. While some countries in sub-Saharan Africa have shown modest success in lowering their maternal mortality ratios, overall progress in reducing maternal mortality in the region has been

negligible.¹ Slightly more than half of all maternal deaths occur in Sub-Saharan Africa,² home to 12% of the world's population. In Ghana, for instance, the maternal mortality ratio in 2005 was estimated at 560 maternal deaths per 100,000 live births.³ A Ghanaian woman's risk of dying from treatable or preventable complications of pregnancy and childbirth over the course of her lifetime is about 1 in 45, compared to 1 in 7,300 in the developed regions.

Increasing access to skilled birth attendance and emergency obstetric care is widely viewed as the key strategy for preventing maternal deaths. A variety of barriers impede this access: health systems constraints (shortages of skilled workers and health facilities, particularly in rural areas; poor quality care; lack of adequate transport systems), cultural barriers (lack of women's autonomy within the household, preferences for home-based births, traditional birth practices), and economic barriers (high out-of-pocket costs associated with facility-based deliveries and transportation), among others.



Denise Averbug/ Ghana

To address economic barriers to skilled delivery care, policymakers have begun experimenting with health financing interventions such as vouchers and health insurance. Ghana, for example, has passed legislation to establish a National Health Insurance Scheme (NHIS) which provides free antenatal and facility-based delivery care to insured women. The Ghana example serves as a useful case study for safe motherhood financing interventions. This policy brief reviews data from a pre-post evaluation and investigates the impact of implementing the Ghana NHIS on utilization of antenatal and delivery care services, and on measures of financial protection.

BACKGROUND ON GHANA'S NATIONAL HEALTH INSURANCE SCHEME

Prior to 2003, Ghana financed its health care system through tax revenues and user fees charged to patients at the time of service. User fees, however, were found to substantially decrease access to health services, particularly among the poor, and exemptions for vulnerable and priority populations were unevenly applied. Community-based health insurance schemes began to emerge — growing from 47 in 2001 to 168 by 2003 - but these schemes only covered about 1 percent of the population by 2003 and often excluded antenatal care and normal deliveries.⁴ As a result, the government explored the feasibility of abolishing user fees and introducing a national health insurance scheme to be implemented at the district level.

In September 2003, the government introduced a policy of exempting women from delivery fees in public, private, and mission facilities in the four most-deprived regions of Ghana; and expanded the policy to the remaining six regions in April 2005.⁵ An evaluation of the fee exemption policy in two regions found that there was an increase in facility deliveries, earlier care-seeking for complications, and a decrease in out-of-pocket expenditures for delivery; whereas there was no change or worsening of service quality.⁶

However, there was severe under-funding for the policy from 2005 onwards and exemptions for deliveries were effectively suspended in many areas.⁷

In August 2003, the National Health Insurance Act was passed, aiming to provide universal coverage of all Ghanaians within 5 years through nationally-mandated district-wide health insurance schemes. By the end of 2007, 42% of the population was covered by the NHIS.⁸ The NHIS provides coverage for basic health care services, including outpatient consultations, essential drugs, inpatient care and shared accommodation, maternity care (normal and cesarean delivery), eye care, dental care, and emergency care. Certain public health services intended to be provided for free by the government, such as family planning and immunizations, were not included in the benefits package. The initial registration fee is 20,000 old Ghanaian cedis (\$2.16), while the annual premiums are theoretically income-based, with a minimum set at 72,000 cedis (\$7.81) per adult.⁹ Children are automatically covered as long as both parents enroll, and those over 70 years and pensioners are also exempt from premiums. In addition to registration fees and premiums, the NHIS is also funded via a national 2.5% sales tax and 2.5% of social security contributions from formal sector workers. Schemes are managed at the district level, and districts are authorized to set exemption policies according to local circumstances and context.

EVALUATION OF THE NATIONAL HEALTH INSURANCE SCHEME

In 2004, the USAID-funded Partners for Health Reform^{plus} project, in collaboration with the Health Research Unit of the Ghana Health Service, initiated an evaluation of the NHIS. A baseline household survey was conducted in September 2004 prior to NHIS roll-out in two districts: Nkoranza (located in the Brong Ahafo region) and Offinso (located in the Ashanti region). In September 2007, more than two years after launch of the NHIS, an endline household survey was conducted in the same districts to measure the impacts of NHIS implementation.

TABLE I. COVERAGE OF MATERNAL HEALTH CARE BY HEALTH INSURANCE

	BASELINE (2004) NKORANZA HEALTH INSURANCE SCHEME*	ENDLINE (2007) NATIONAL HEALTH INSURANCE SCHEME**
Prenatal care		✓
Normal delivery		✓
Delivery by c-section	✓	✓
Hospitalization for delivery	✓	✓
Postnatal care		✓

*Available only in Nkoranza district

**Available in both Nkoranza and Offinso, and covering care in public, and private for-profit health facilities

At the time of the baseline survey, a community-based health insurance scheme covered about 34% of the district population in Nkoranza. The scheme was managed by the district's mission hospital and primarily covered inpatient services, including cesarean sections. In 2005, this scheme was replaced by the NHIS, serving the entire district and covering a broader range of health services. In Offinso, there were no community-based health insurance schemes before the district-wide scheme of the NHIS was established in 2005. Table I summarizes the maternal health benefits covered by health insurance in the study sites.

The baseline and endline surveys collected information on socio-demographic characteristics of households, health insurance membership, and health care utilization and payments associated with deliveries in the 12 months preceding the survey.¹⁰ The baseline sample included 298 women who had had a delivery (from 1,805 surveyed households); and the endline sample consisted of 319 women (from 2,520 surveyed households). Data on household assets were used to differentiate households in five asset-based wealth groups (wealth quintiles) pooled across baseline and endline samples.

IMPACT OF NHIS ON COVERAGE FOR MATERNAL CARE

In Nkoranza, the proportion of women with delivery in the past 12 months who were insured at time of delivery increased from 30% in 2004 to 45% in 2007 ($p=0.02$). Women of reproductive age (15-49 years) from wealthier households enrolled in the NHIS at higher rates, compared to women from poorer households: 16% of women from the poorest quintile were enrolled, compared to 48% of women from the richest quintile, and there is a clear gradient between enrollment and wealth (Table 2). The main reason given by uninsured households for non-enrollment in the NHIS is that they could not afford the premiums. Nearly all of the insured women who had a delivery (95%) paid a premium, with 65% of them paying 80,000 cedis (\$9.08).

TABLE 2. PERCENTAGE OF WOMEN AGE 15-49 WITH NHIS INSURANCE COVERAGE AT FOLLOW-UP BY WEALTH QUINTILE AND DELIVERY HISTORY IN PAST 12 MONTHS

WEALTH QUINTILE	NO DELIVERY	DELIVERY IN PAST 12 MONTHS	TOTAL
Poorest	16%	17%	16%
Middle-poor	27%	32%	27%
Middle	37%	29%	36%
Middle-rich	35%	53%	37%
Richest	47%	55%	48%
Total	33% N=2,671	36% N=319	33%

There was no indication in the data that women who expected to have a delivery were more likely to enroll in NHIS (ensuring they had insurance coverage for the delivery) than non-pregnant women: 36% of women who had a delivery were insured, compared to 33% of women who did not have a delivery ($p=0.45$) (Table 2). However, this difference was larger for women from the top two quintiles, indicating that some wealthier women might have been enrolling just for delivery coverage.

IMPACT OF NHIS ON UTILIZATION OF PRENATAL AND DELIVERY CARE

There were no significant changes in the proportion of women who received any prenatal care, or in the average number of reported prenatal care visits between baseline and endline (Figure 1), indicating that the NHIS did not increase utilization of prenatal care. Utilization of prenatal care services in Ghana was already high in 2004 and remained high in 2007 (96% and 94% of pregnant women respectively had at least one prenatal visit). The proportion of women who had four or more prenatal care visits decreased from 75% to 68%, though this change was not statistically significant.

The proportion of deliveries that took place in a health facility was 54.5% in 2004, and remained virtually unchanged (54.9%) in 2007 (Figure 2). Facility deliveries decreased from 63% to 57% in Nkoranza and increased from 42% to 52% in Offinso but this change was not statistically significant in either district. Multivariate analyses controlling for a number of socio-economic characteristics known to be associated with maternal care seeking showed no evidence that the NHIS was associated with a change in the likelihood that a woman delivered in a health facility. Among deliveries that took place in a health facility, the distribution among public, mission, and private for-profit facilities also remained unchanged. The results for facility deliveries closely matched those for delivery with a skilled birth attendant (defined as a doctor, nurse, or midwife): 56% of deliveries at baseline and 55% at endline were with a skilled attendant.

In the study districts, the NHIS did not increase the likelihood of using maternal health services (prenatal care, skilled attendance at delivery, facility-based births, or C-sections).

FIGURE 1. NUMBER OF PRENATAL CARE VISITS AMONG WOMEN WHO DELIVERED IN THE PREVIOUS 12 MONTHS

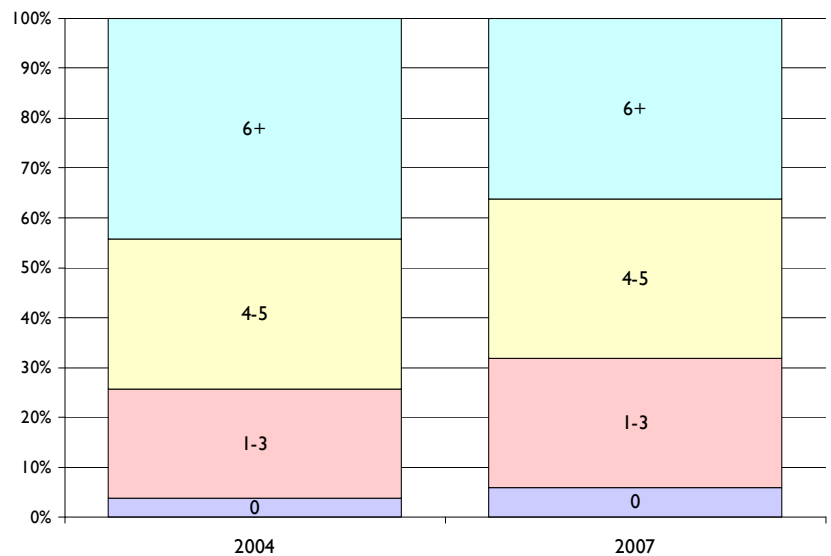
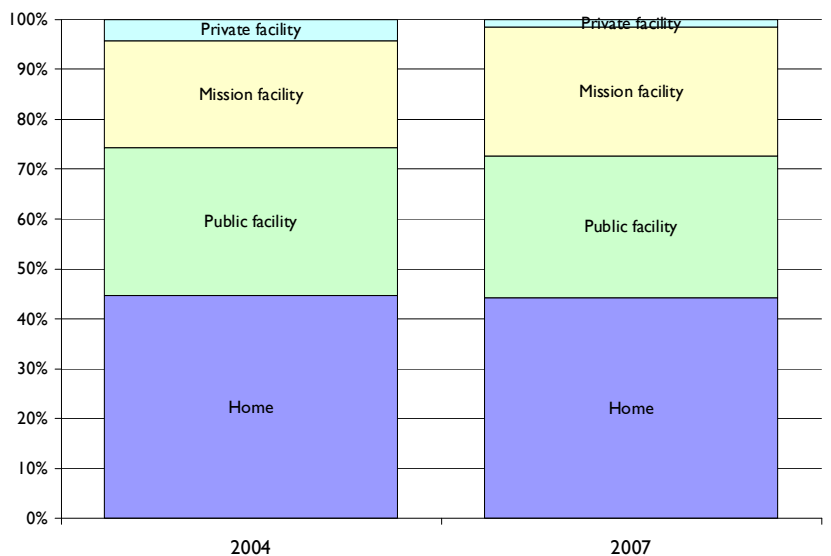


FIGURE 2. LOCATION OF DELIVERY AMONG WOMEN WHO DELIVERED IN PRIOR 12 MONTHS



At baseline, women who were insured by Nkoranza's community-based health insurance scheme were somewhat more likely to deliver in a health facility than uninsured women, although this difference was not statistically significant. By contrast, women who were covered by the NHIS at time of delivery were significantly more likely to have a facility-based delivery: 46% of uninsured women compared to 68% of insured women (Table 3). This may be due to the fact that the Nkoranza community-based scheme did not cover normal delivery, providing coverage only for surgical delivery and associated hospitalization costs.

The proportion of deliveries by c-section did not change significantly (6.9% at baseline and 6.4% at endline). However, both at baseline and endline, insured women were significantly more likely to deliver by c-section, compared to uninsured women (Table 3).

Multivariate analyses of the data on women who were covered by the NHIS at time of delivery showed that those who did not deliver in a health facility were more likely to be poorer and multiparous.

IMPACT OF NHIS ON OUT-OF-POCKET EXPENDITURES FOR PRENATAL AND DELIVERY CARE

Overall, out-of-pocket payments for delivery decreased by about one-third after the NHIS was implemented. Adjusting for inflation, average delivery expenditures declined from 111,570 cedis (about \$13) to 75,418 cedis (about \$9) ($p=0.10$). There were significant changes in how women paid for delivery care: while 30% at baseline said they had to sell agricultural produce to pay for the delivery, only 3% at endline reported having to do so. Overall, the proportion of women who did not have to pay for their delivery increased from 28% to 52% ($p<0.001$). Among women who delivered in a health facility, 9% did not have to pay at baseline, compared to 51% at endline ($p<0.001$).

Average expenditures on prenatal care also declined, but the relative change was smaller (15%) and not statistically significant (49,238 to 42,789 cedis, $p=0.44$). However, the proportion of women who did not have to pay anything for their prenatal care increased from 8% in 2004 to 43% in 2007 ($p<0.001$).

Implementation of the NHIS has been associated with a significant reduction in out-of-pocket payments for delivery.

TABLE 3. CHARACTERISTICS OF DELIVERY BY INSURANCE STATUS AMONG WOMEN WHO DELIVERED IN PAST 12 MONTHS

VARIABLE	BASELINE SAMPLE			FOLLOW-ON SAMPLE ONLY		
	NON-INSURED	INSURED BY NKORANZA CBHI	<i>p-value</i>	NON-INSURED	INSURED BY NHIS	<i>p-value</i>
	<i>N=190</i>	<i>N=92</i>		<i>N=178</i>	<i>N=135</i>	
Delivery at modern facility	52%	66%	0.196	46%	68%	0.013
Delivery by c-section	5%	12%	0.039	2%	13%	0.004

DISCUSSION

The findings of this pre-post evaluation of the NHIS in two districts of Ghana showed that the introduction of the scheme was associated with lower out-of-pocket payments for care for those who had coverage, and an increase in curative care-seeking.¹¹ However, the significant reduction in out-of-pocket payments for delivery care between 2004 and 2007 was not accompanied by an increase in deliveries in health facilities. Our findings are in line with a decrease in the proportion of deliveries with a skilled birth attendant between 2004 and 2007 reported by the Ghana Health Service at the national level and in several regions, including Brong Ahafo region (where the district of Nkoranza is located) and Ashanti region (where the district of Offinso is located).¹²

A number of factors on the demand side (maternal care seeking) and supply side (service delivery) may account for this result. First, direct costs other than facility charges for care (such as transportation, meals, and expenditures for accompanying family members), and opportunity costs (such as time away from home for the woman and lost income for accompanying family members) may have constituted a significant share of total costs associated with a delivery in a health facility. Second, as of 2007 insurance still did not cover those with the greatest financial barriers to overcome, possibly because the premiums remained unaffordable. The recent policy (enacted in July 2008) of enrolling pregnant women for free in the NHIS may address this potential barrier, but it remains to be seen if the policy will result in a change in maternal care seeking. If non-financial factors are the primary drivers of a woman's choice to deliver at home, this new policy may have limited role in increasing the proportion of deliveries with skilled care. Such non-financial factors could include cultural preferences for home delivery, social barriers related to ethnic group or gender discrimination, distance and difficult physical access to health facilities (poor road infrastructure), and

perceived quality of care in health facilities related to patient comfort or clinical quality.^{13 14} Perceptions of poor quality of care can reflect a number of service delivery (or supply-side) deficiencies such as shortages of medicines and supplies, poor conditions of health facilities, or inadequate numbers of health workers.

In Ghana, there is some evidence that these factors were likely to affect both the demand for and supply of maternal health care. Possible reasons for the low (and declining) proportion of deliveries with skilled attendance, cited in the *Ghana Health Services 2007 Annual Report*, include strikes by health workers in 2007, an inadequate number of practicing midwives, difficulties in getting to health facilities for women in labor, as well as cultural barriers including attitudes of health workers.

POLICY IMPLICATIONS

The results of this evaluation point to several policy implications. First, the evidence supports the use of health insurance as a health financing tool to provide protection from out-of-pocket expenditures for women seeking delivery care in health facilities. Second, the finding that premiums still function as a barrier to purchasing insurance, and the strong wealth gradient in insurance enrollment, indicate that income-based targeting needs to be improved to ensure equitable insurance coverage. Third, insurance appears to affect utilization of different types of health services differently, so non-financial barriers to health care access need to be explored and considered along with implementation of insurance.

Further research is needed to assess what health system and socio-cultural barriers may still prevent women from seeking delivery care in health facilities. Qualitative research methods would be particularly useful in investigating such barriers, particularly looking into factors that are most amenable to policy intervention, such as revision of health financing policy, provider incentives, and facility quality of care.

Since this study was completed, two important developments related to maternal health took place in Ghana: all pregnant women were exempted from paying premiums for NHIS enrollment (effective in July 2008), and a proposal to include family planning services and supplies in the NHIS benefit package is currently being considered. These policy changes may succeed in improving access to and utilization of maternal health services for women in Ghana.

ENDNOTES

- ¹United Nations (2008), The Millennium Goals Report 2008, New York: United Nations.
- ²World Health Organization (2007), Maternal mortality in 2005: estimates developed by WHO, UNICEF, UNFPA, and the World Bank, Geneva: WHO.
- ³World Health Organization (2007), Maternal mortality in 2005: estimates developed by WHO, UNICEF, UNFPA, and the World Bank, Geneva: WHO.
- ⁴Atim, C, S. Grey, P. Apoya. (2003) A Survey of Mutual Health Organizations in Ghana: Unpublished draft. Bethesda, MD: Partners for Health Reformplus, Abt Associates Inc.
- ⁵Witter, S., Arhinful, D., Kusi, A., Zakariah-Akoto, S. 2007. The Experience of Ghana in Implementing a User Fee Exemption Policy to Provide Free Delivery Care. *Reproductive Health Matters*; 15(30):61-71.
- ⁶Witter, S., Armar-Klemesu M., and Dieng, T. 2008. National fee exemption schemes for deliveries: comparing the recent experiences of Ghana and Senegal. *Studies in Health Services Organisation & Policy* 24, 2008, pp. 167-198.
- ⁷Ibid.
- ⁸Ministry of Health Ghana (2008), Independent Review: Health Sector Programme of Work 2007, Accra: April 2008. (p.7)
- ⁹Effective 1 July 2007, the Ghana cedi was re-denominated and is now worth 10,000 old cedis. In this brief, we report all currency amounts in old Ghanaian cedis. Expenditures in 2007 were adjusted for inflation (40% over 3 years), so all expenditures are reported in 2004 old Ghanaian cedis. Conversion to \$US uses exchange at time of baseline survey (Sept. 2004)
- ¹⁰The survey also collected data on outpatient and inpatient curative care for illness or injury. These results are reported in a separate publication.
- ¹¹Health Systems 20/20 (2009), Evaluation of the National Health Insurance Scheme in Two Districts in Ghana. Bethesda, MD: Partners for Health Reformplus, Abt Associates Inc.
- ¹²Ghana Health Service (2007), Annual Report 2007, Accra: GHS. [<http://www.ghanahealthservice.org/includes/upload/publications/GHS%202007%20Annual%20Report.pdf>]
- ¹³Koblinsky M., Conroy C., Kureshy N., Stanton ME., Jessop Suzanne. (2000), Issues in Programming for Safe Motherhood. MotherCare Arlington, VA.: John Snow Inc. September 2000. [<http://www.nccdh.ca/downloads/Issues%20in%20Programming%20for%20Safe%20Motherhood.pdf>]
- ¹⁴Parkhurst JO, Sengooba F. (2005), Access to and utilisation of professional child delivery services in Uganda and Bangladesh. Health Systems Development Programme [http://www.hsd.lshtm.ac.uk/publications/hsd_working_papers/08-05_access_study_report%20-%20uganda.pdf]

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