

# Utilization of Obstetric Services in Ghana between 1999 and 2003

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## Abstract

Analysis of the 2003 Ghana Demographic and Health Survey shows that even though over 90% of pregnant women attend antenatal care in health institutions, only 43% deliver in the health institutions. The quality of antenatal care received is also lower than is expected for standard obstetric care. The national caesarean section rate of 3.7% reflects inadequate obstetric coverage. There is a need for continued education of health workers to improve the quality of antenatal care. The Ghanaian health system needs to consider how to improve obstetric coverage by skilled attendants and to study the reasons for inadequate use of delivery services in order to be able to achieve the target for maternal health set in the Millennium Development Goals (*Afr. J. Reprod. Health* 2010; 14[3]: 153-158).

## Résumé

**Utilisation des services obstétriques au Ghana entre 1999 et 2003.** Une analyse de l'Enquête sur la Démographie et la Santé du Ghana pour l'année 2003 montre que bien que plus de 90% des femmes enceintes fréquentent les établissements de santé pour les soins anténatals, il n'y a que 43% qui accouchent dans les établissements de santé. La qualité du soin anténatal reçu est inférieure à ce qu'on s'attend du soin obstétrique type. Le taux de l'opération césarienne nationale de 3,7% reflète une couverture obstétrique inadéquate. Il est nécessaire qu'il y ait une formation continue du personnel sanitaire afin d'améliorer la qualité du soin anténatal. Il faut que le système de santé ghanéen considère la manière d'améliorer la couverture obstétrique par les accoucheurs qualifiés et d'étudier les raisons pour l'utilisation inadéquate des services d'accouchement afin de pouvoir atteindre l'objectif de la santé maternelle fixé dans les objectifs du millénaire pour le Développement (*Afr. J. Reprod. Health* 2010; 14[3]: 153-158).

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Key words: Obstetric services, antenatal care, delivery care, skilled attendants, safe motherhood.

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## Introduction

Obstetric services are crucial in the efforts to reduce maternal morbidity and mortality. This is because maternal mortality is a unique public health problem that cannot be solved without the establishment of clinical services. Clinical services are needed to prevent maternal deaths in those cases where the pregnancy complication could not be prevented. It has been established that although almost all maternal deaths are preventable not all cases of pregnancy complications that lead to maternal death can be predicted or prevented<sup>1</sup>. In order to achieve the Millennium Development Goals target of reducing maternal mortality by 75% by 2015<sup>2-4</sup>, the International Federation of Gynaecologists and Obstetricians (FIGO), the International Confederation of Midwives (ICM) and the World Health Organization (WHO) have together stated that all births should be attended by skilled attendants<sup>5</sup>. It has been shown that countries with a high proportion of births attended by skilled attendants

have low maternal mortality ratios<sup>5,6</sup>. In this context, a skilled attendant is defined as "a health professional- such as a midwife, doctor or nurse- who has been educated and trained to proficiency in the skills needed to manage normal pregnancies, childbirth and the immediate postnatal period, as well as in the identification, management and referral of complications in women and newborns"<sup>5</sup>.

Skilled attendants in any country are found within the established obstetric services. In order to improve attendance of births by skilled attendants, it is helpful to assess the level of utilization of obstetric services and the factors that determine use of the services. This assessment would provide information that can be used to design programmes to increase the proportions of births attended by skilled attendants and also set the agenda for further research into how to improve the level of utilization of obstetric services.

This paper examined the use of obstetric services by women in Ghana between 1999 and 2003 and discussed the implications of the level of utili-

**Table 1.** Availability of obstetric services in Ghana in 2002.

Type of facility	Proportion of all facilities	Proportion providing antenatal, normal delivery and caesarean section
Hospital	12.9%	87.0%
Clinic	30.3%	4.0%
Health centre	27.5%	2.0%
Maternity home	17.7%	1.0%
Maternal and child health centers	11.6%	0%

**Source:** Ghana Service Provision Assessment Survey 2002.

zation for maternal health in the country.

## Background

Ghana is a West African country with a population of about 20 million. The country is divided into 10 regions for administrative purposes. Infrastructure development is greatest in the southern part of the country and majority of services in the country are concentrated around the capital city, Accra, and around other regional capitals.

Ghana has been involved in the Safe Motherhood Initiative (SMI) since its inception. After the SMI meeting in Nairobi in 1987, Ghana joined other countries in adopting the antenatal risk assessment approach to preventing maternal mortality and in the training of traditional birth attendants (TBAs). Ghana has also trained skilled attendants through the establishment of midwifery training schools. The Ghana postgraduate training programme for Obstetricians and Gynaecologists which was initially supported by the Carnegie Corporation is a success story that has been widely reported<sup>7</sup>.

Ghana had a national sisterhood method of assessing maternal mortality programme in 1993 and this gave a maternal mortality ratio (MMR) of 214 per 100,000 live births. The recent maternal mortality estimates by WHO and other agencies gives the MMR for Ghana to be 524 per 100,000 live births<sup>8</sup>. Since both estimates are by different methods, they cannot be used to assess trends but both figures show that the MMR for Ghana is high.

In Ghana, hospitals comprise 13% of all health facilities and 87% of these hospitals provide antenatal, delivery and caesarean section services<sup>9</sup> (Table 1). Other institutions that provide obstetric services are clinics, maternity homes and health centres.

## Methods and Materials

Data were obtained from the 2003 Ghana Demographic and Health Survey (GDHS)<sup>10</sup>. The GDHS is a representative national cross-sectional survey that is conducted in Ghana every five years. The survey focuses on family planning, maternal health and child health. The data were used to determine the

level of use of antenatal and delivery services by women between 1999 and 2003. Cross-tabulation with certain demographic factors was performed to find the determinants of use of the antenatal and delivery services. The data were also used to assess the quality of antenatal services in the country. The association between receiving high quality antenatal services and using the delivery services was investigated by cross-tabulations. The quality of antenatal services received was rated as high if the women had their blood pressure checked, had urine tested, received malaria prophylaxis, received iron supplementation, had their blood tested and were informed about pregnancy complications and what to do in the event of a complication.

The data were analyzed using SPSS statistical software. The chi square test was used to test for associations and a p value of less than 0.05 was taken to be significant. Permission to use the GDHS data for this analysis was obtained from Measure DHS.

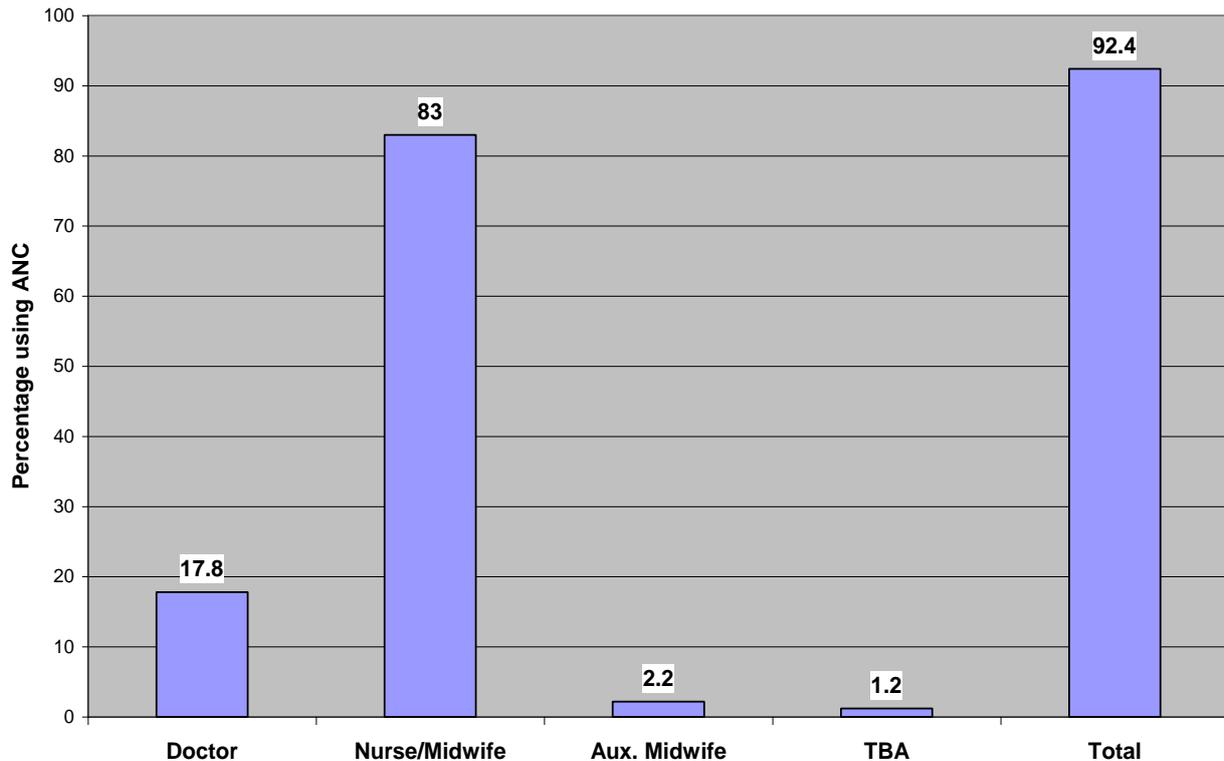
## Results

The 2003 GDHS covered 5691 women and 2777 (48.8%) of them had at least one pregnancy during the five year period preceding the survey.

### *Antenatal care*

Data on antenatal care was completed for 2766 women. Only 211 women (7.6%) did not have any antenatal care during their pregnancy. Of those who had antenatal care, 2195 (71.7%) had four or more visits during their pregnancy. The nurse or midwife was the commonest provider of antenatal care (Figure 1). Most women had their first antenatal visit between 3 and 5 months with the modal time for the first visit being 3 months in 27.2% of the women. Over 1500 women (60.5%) attended antenatal clinic until the ninth month of pregnancy.

Table 2 shows the proportions of antenatal care attendants who benefited from the different aspects of routine antenatal care. The lowest coverage was in the area of anti-malarial prophylaxis where only 55% of women were given anti-malarial treatment.



**Figure 1.** Providers of antenatal care to Ghanaian women, 1999-2003. TBA: Traditional birth attendant.

**Table 2.** Proportion of Ghanaian antenatal attendants benefiting from different aspects of antenatal care, 1999-2003 (N=2766).

Antenatal service	Proportion of attendants receiving service
Blood pressure measurement	95.8%
Anti-tetanus injection	84.2%
Blood sample taken	83.4%
Urine sample taken	80.9%
Iron supplementation	77.1%
Told about pregnancy complications	59.0%
Malaria prophylaxis	55.3%

#### Labour and delivery care

Figure 2 shows the place of delivery for the respondents. The commonest place where women delivered was at home. This was the case for 1356 respondents (49.0%). Health facilities were used by 1202 women (43.5%). The commonest attendant at delivery was the nurse or midwife. Nurses or midwives attended 40.5% of all deliveries (Figure 3). The proportion of births attended by a skilled attendant was 47.0%. One hundred and three women (3.7%) were delivered by caesarean section.

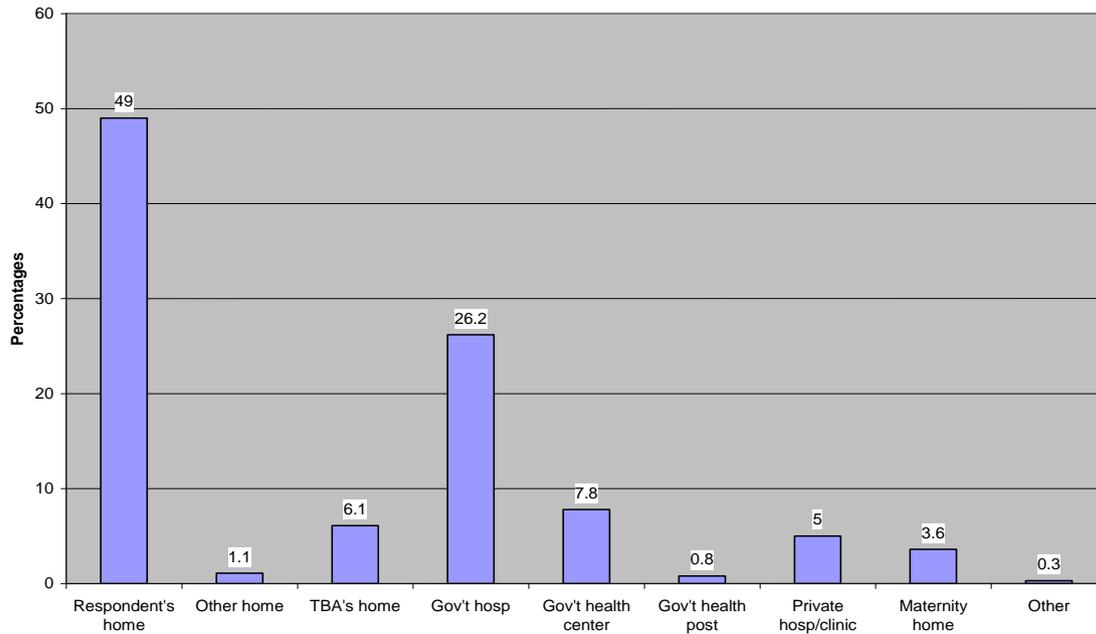
#### Determinants of antenatal care

Women living in urban areas were more likely to receive antenatal care ( $p < 0.001$ ) and women in the southern part of the country were more likely to receive antenatal care than those from the north ( $p < 0.001$ ). Women living in the capital region, Greater Accra, were significantly more likely to be seen by a doctor during antenatal visits ( $p < 0.001$ ). Although women in rural Ghana were more likely to receive antenatal care from a nurse or midwife, the difference was not statistically significant ( $p = 0.051$ ). Women of the highest educational status had a significantly greater chance of being attended to by doctors ( $p < 0.001$ ).

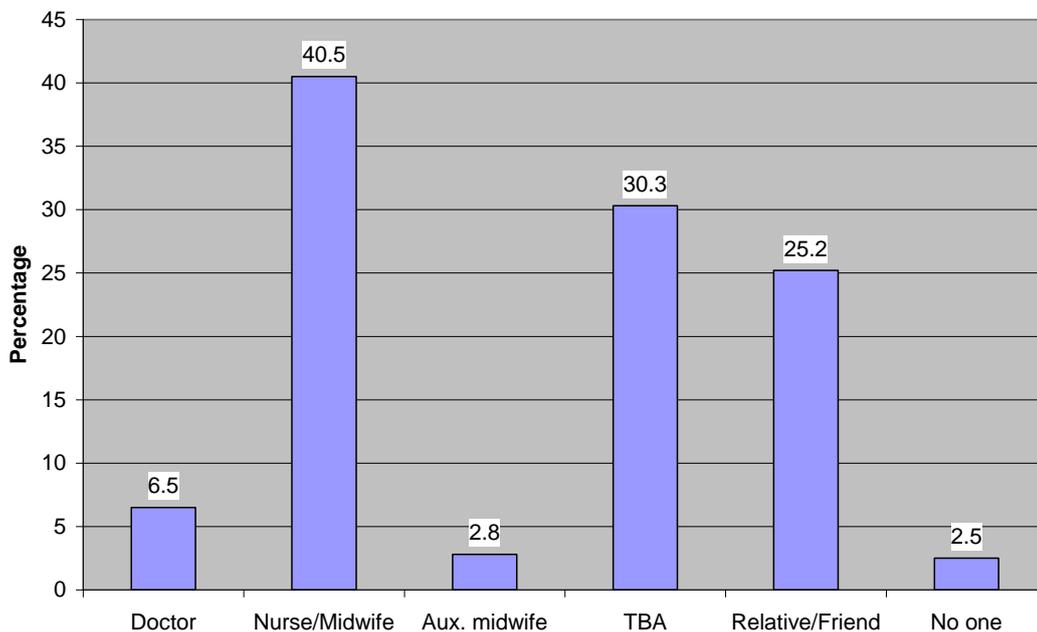
#### Determinants of delivery care

Women in Accra had a significantly increased chance of being delivered by a doctor ( $p < 0.001$ ). Women who were seen by a doctor for antenatal care were more likely to have a skilled attendant present at delivery ( $p < 0.001$ ). Patients who received good quality antenatal care were significantly more likely to have a skilled attendant present at delivery ( $p < 0.001$ ). Women living in rural Ghana were more likely to be delivered by a traditional birth attendant ( $p < 0.001$ ).

There was no association between age and the type of attendant at delivery ( $p = 0.816$ ).



**Figure 2.** Place of delivery for Ghanaian women, 1999 - 2003. TBA: Traditional birth attendant.



**Figure 3.** Attendant at delivery of Ghanaian women, 1999-2003. TBA: Traditional birth attendant.

## Discussion

This analysis shows that Ghanaian women make use of antenatal services over and above their use of delivery services. Most Ghanaian women have home deliveries attended by TBAs.

The use of antenatal care in Ghana is comparable to the 94.2% use of antenatal services for at least one visit in South Africa<sup>11</sup>. The use of delivery services in South Africa is however much higher at

83.4%, than the 43.5% for Ghana<sup>11</sup>. Comparing the statistics for Ghana and South Africa, one startling difference is in female education. While only 6.8% of South African women have had no formal education<sup>11</sup>, the figure for Ghana is 28.2%<sup>12</sup>. This could be one of the possible reasons why use of delivery services varies so much between both countries despite similar use of antenatal services.

The trend in the use of obstetric services in Ghana raises concern because it has been shown

that most of the pregnancy complications that lead to maternal morbidity and mortality occur during labour and delivery. Although antenatal care results in early detection of some pregnancy complications such as anaemia and pre-eclampsia, in most cases antenatal care is limited in predicting which women would have problems during labour and delivery<sup>13</sup>. This is the reason why the current opinion is to increase the proportion of births attended by skilled attendants in order to improve maternal health<sup>5,6</sup>.

The finding that women make good use of antenatal services provided mainly by health institutions suggests that there is a lot of value placed on the role of the health institutions in pregnancy care. It is easy for a woman to plan to attend the antenatal clinic but since labour most often comes on without much warning, it could lead to reduction in the use of delivery services. Another possibility is that while attending antenatal clinic is largely dependent on the effort of the pregnant woman, the transport of the labouring woman to a health institution is the responsibility of family members. In such a situation, the values of the pregnant woman might not be considered and the problems involved in finding transport as well as the attendant costs of delivery at a health institution could greatly influence the decision of where to have the delivery conducted.

Accessibility to hospitals might be considered a reason why women do not use delivery services but this theory can easily be challenged by the high use of antenatal services. Another possibility is that relatives might not be happy with the hospital system where they are unable to be with the woman during labour. There is a need to study the reasons for non-use of delivery services in order to get the real answers. This analysis was unable to provide the answers to the reasons why the delivery services are underutilized.

The WHO guidelines for obstetric care states that between 5 and 15% of births should be by caesarean section<sup>14</sup>. This would reflect adequate obstetric coverage. The national caesarean section rate of 3.7% from this study shows that obstetric coverage in the country is less than expected.

Given the impression that women would like skilled attendants to be involved in their care, there is the need for birth preparedness classes to be integrated into antenatal care in Ghana. This should not be simply added to the duties of the doctors, nurses or midwives. There is the need to institute a separate visit where the pregnant woman preferably accompanied by a major decision maker are seen and helped to plan towards an institutional delivery. This could increase the use of delivery facilities by women because even though health workers recommend that women deliver in health facilities, much is not done to help the women prepare for this.

In order to help reduce the obstacles between a woman laboring at home and reaching the health institution, Ghanaian health providers need to look into the possibility of providing delivery care for home deliveries. This is a major challenge that should be taken on after careful planning and thought. Home deliveries by skilled attendants are a viable option as has been shown by the Dutch obstetric services<sup>15</sup>. Currently in Ghana cellular phone technology is available all over the country with most communities having a provider with equipment for making cellular phone calls. The creation of a toll free number where requests can be made to send a midwife to a house should be looked into especially in rural communities. Such a service can only be supported by a large number of midwives. The Ghanaian government has recently increased midwife training so this challenge could be considered. The need to have transport facilities so that the midwife conducting the home delivery can immediately be provided with a means of transferring a patient if necessary must be a major part of the planning discussion.

There is the need to improve the quality of antenatal services provided in Ghana. The aim of this quality improvement should be that all women would have their blood pressure measured, urine sample tested, blood sample taken, receive iron supplements and anti-malarial drugs and be educated about pregnancy complications as well as what to do when complications occur. The results of this data analysis showed that good quality antenatal care leads to the presence of a skilled attendant at birth. The teaching hospitals in the country should consider taking up the responsibility of providing continued education and audits of antenatal services in the country in order to improve quality. The Ghana Health Service would also have to ensure that all facilities for clinical measurements and laboratory tests are available at all the places where antenatal services are offered.

Although this study suggested possible reasons why delivery services are underutilized in Ghana, it is necessary to conduct further studies among both men and women to find out the exact reasons for this. The results of such a study would provide the necessary information about actions that the health service should take in order to achieve the target of having at least 80% of births attended by skilled attendants.

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